Electricity Regulation

Contributing editors
Daniel Hagan and Kirsti Massie

2017

GETTING THE DEAL THROUGH

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Electricity Regulation 2017

Contributing editors

Daniel Hagan and Kirsti Massie

White & Case LLP

Publisher
Gideon Roberton
gideon.roberton@lbresearch.com

Subscriptions
Sophie Pallier
subscriptions@gettingthedealthrough.com

Senior business development managers
Alan Lee
alan.lee@gettingthedealthrough.com

Adam Sargent
adam.sargent@gettingthedealthrough.com

Dan White
dan.white@gettingthedealthrough.com

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Electricity Regulation 2016

Fifteenth edition

Getting the Deal Through is delighted to publish the fifteenth edition of *Electricity Regulation*, which is available in print, as an e-book and online at www.gettingthedealthrough.com.

Getting the Deal Through provides international expert analysis in key areas of law, practice and regulation for corporate counsel, cross-border legal practitioners, and company directors and officers.

Throughout this edition, and following the unique **Getting the Deal Through** format, the same key questions are answered by leading practitioners in each of the jurisdictions featured. Our coverage this year includes new chapters on Canada, Costa Rica, Greece, Korea and Russia, and a new Global overview.

Getting the Deal Through titles are published annually in print. Please ensure you are referring to the latest edition or to the online version at www.gettingthedealthrough.com.

Every effort has been made to cover all matters of concern to readers. However, specific legal advice should always be sought from experienced local advisers.

Getting the Deal Through gratefully acknowledges the efforts of all the contributors to this volume, who were chosen for their recognised expertise. We also extend special thanks to the contributing editors, Daniel Hagan and Kirsti Massie of White & Case, for their assistance with this volume.

GETTING THE DEAL THROUGH

London
October 2016

Global overview

Daniel A Hagan and Kirsti Massie
White & Case LLP

The current state of the global electricity sector is best described by the immortal words of Charles Dickens in *A Tale of Two Cities*: 'It was the best of times, it was the worst of times.' That dichotomy is due, in large part, to one driving force – disruption. That disruption has resulted in the electricity sector going through a period of significant transition. The old business model is, in many respects, under challenge.

The electricity sector is facing numerous challenges – the demand for power continues to grow as does the focus on the price at which power is supplied with a relentless drive to reduce the costs of generation and ensure the affordability of electricity. A need for increased electrification in many countries and ensuring that their population is connected to a diverse source of electricity is a dominant theme in many developing markets.

We are seeing continued increase in renewable generation with new technologies developing rapidly and coming online quickly. The way in which energy is transmitted and used is changing with an increased focus on energy storage and off-grid or distributed generation solutions. The development of battery technologies has seen other industries such as the car industry and information technology and data management – industries not typically associated with the electricity sector – play an increasingly relevant role in bringing disruptive innovation to the electricity sector. Demand-side management and an increasing call for consumer choice in terms of electricity supply is forcing the electricity industry to rethink the way power is supplied to the end customer.

All of the above in turn creates a challenge for governments and the regulatory framework which governs the electricity sector in each jurisdiction.

On the one hand the regulatory environment needs to be sufficiently flexible to respond to the challenges presented by new technologies but at the same time be sufficiently stable to encourage investment and development. Striking the right balance is difficult. What that difficulty portends is unclear. What is clear is that serious public policy questions need to be addressed in terms of the role of government in encouraging innovation and the delivery of new technologies, ensuring sufficient generating capacity is available to meet consumer demand and the responsibility of governments in ensuring the transmission of power. The new technologies themselves are raising novel questions in terms of electricity regulation – for example, should storage be treated from a regulatory perspective as generation, supply or something new entirely?

Regulation is key. In this increasingly complex and dynamic environment it has become more important than ever before to be aware of the current state of electricity regulation and, more importantly, the potential trends and challenges going forward.

Australia

Andrew Monotti, Simon Cooke and William Osborn
King & Wood Mallesons

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Scope of the responses
These responses relate to the National Electricity Market (NEM) in Australia.

Although brief reference is made to the electricity markets in Western Australia and the Northern Territory in question 2, the NEM is the predominant electricity market in Australia. The NEM comprises six jurisdictions and, as noted by the Australian Energy Regulator (AER) in the State of the Energy Market 2015, 'is one of the longest alternating current systems in the world, covering 4,500 kilometres'.

Policy and framework
The policy underlying the NEM is contained in the National Electricity Objective (NEO) as set out in section 7 of the National Electricity Law (NEL).

The NEO is as follows:

> *The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to: (a) price, quality, safety, reliability and security of supply of electricity; and (b) the reliability, safety and security of the national electricity system.*

The legislative framework for the NEM is contained in the following legislative scheme:
- National Electricity (South Australia) Act 1996 (SA);
- the NEL;
- the National Electricity Rules (Rules); and
- the legislation of the other participating jurisdictions that adopt each of the above, subject to certain derogations.

The Rules
The Rules have the force of law in each participating jurisdiction in the NEM.

The prescribed requirements and tests for the making of the Rules are set out in Part 7 of the NEL.

A person is entitled to submit a Rule change request to the Australian Energy Market Commission (AEMC). Under subsection 88(1) of the National Electricity Law, the AEMC may only make a Rule if it is satisfied that the Rule will, or is likely to, contribute to the achievement of the NEO.

Retail energy regulation in the NEM
A new regime for the NEM jurisdictions has been introduced. It is known as the National Energy Customer Framework (NECF). The NECF regulates the retail supply and distribution of electricity to retail customers. The NECF excludes retail price regulation and the economic regulation of distribution.

NECF comprises several principal instruments:
- the National Energy Retail Law (which is schedule 1 to the National Energy Retail Law (South Australia) Act 2011);
- the National Energy Retail Regulations;
- the National Energy Retail Rules; and
- amendments and additions to the Rules.

The NECF has been adopted for the retail supply of electricity and applies in South Australia, New South Wales, Tasmania, the Australian Capital Territory and Queensland. In Victoria, the Essential Services Commission has harmonised the Victorian energy regulations to be substantially consistent with the NECF.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Organisational structure
The AER is established by section 44AE of the Competition and Consumer Act 2010 (Cth) (CCA).

The functions and powers of the AER are regulatory in nature, including:
- monitoring compliance with the NEL and the Rules and instituting and conducting proceedings;
- making and monitoring compliance with network revenue or pricing determinations; and
- regulating retail electricity markets under the NECF.

The AEMC is established by section 5 of the Australian Energy Market Commission Establishment Act 2004 (SA).

The functions and powers of the AEMC include, primarily, the Rule making functions and powers as prescribed under the NEL.

The AEMC must establish a panel known as the 'Reliability Panel'. The functions and powers of the Reliability Panel include monitoring, reviewing and reporting on the safety, security and reliability of the national electricity system.

The statutory functions of the Australian Electricity Market Operator (AEMO) involve, primarily:
- the operation and administration of the wholesale exchange in the NEM; and
- maintaining and improving power system security, planning for the development of the transmission grid and providing 'shared transmission services' by means of the transmission system of each participating jurisdiction.

Operation of the NEM
The NEM operates as an interconnected electricity network, comprising the states of Queensland, New South Wales, Victoria, South Australia, Tasmania and the Australian Capital Territory.

The NEM is an 'energy-only' market. Generators recover operating and capital investment costs over time by means of the sale of electricity through spot and contract 'markets'. Generators do not receive any payments for capacity or availability.

Generators and customers in each region sell and buy their electricity at the wholesale or 'spot' price for that region, determined as an average dispatch price over 30 minutes. All dispatched generators receive the same dispatch price.

The principal customers are energy retailers, who bundle electricity with network services for sale to residential, commercial and industrial energy users.

AEMO runs a central dispatch process every five minutes, which determines the electricity each generator must dispatch to meet demand. The highest priced offer required to meet demand represents the dispatch price. A separate spot price is set for each region of the NEM.

The volume and price of electricity in each five-minute dispatch period varies. Generators participate in the central dispatch process by submitting dispatch offers in up to 10 price bands. A generator can rebid by changing quantities at a level, but not by changing prices at any level. Any rebidding is also subject to a prohibition on false or misleading rebids (see question 29).

Networks

The transmission and distribution networks in the NEM are structured as a series of natural monopolies (both government and privately owned) which are subject to economic regulation of price and/or revenue and at the transmission functional level, regulated rights of access.

Chapter 6 of the Rules (for distribution) and Chapter 6A of the Rules (for transmission) set out the regulatory framework for the AER to apply in the economic regulation of transmission and distribution network service providers.

Western Australia

Western Australia has two separate electricity networks, known as the South West Interconnected System (SWIS) and the North West Interconnected System (NWIS).

The SWIS is a 'capacity' market. Generators and demand side management service providers are paid for the capacity they can provide to the market when required. Pursuant to Chapter 4 of the Wholesale Electricity Market Rules under the Electricity Industry (Wholesale Electricity Market) Regulations 2004, the AEMO determines the capacity required each year and issues 'capacity credits' (being notional units of generational capacity) to market participants registered as generators under the Market Rules. Retailers and large load customers are required to purchase a quantity of capacity credits in accordance with their capacity allocation.

A capacity credit can be traded between market participants and is valid for a particular reserve capacity year (as defined in the Market Rules).

Northern Territory

The Northern Territory has an independent electricity network and supply industry that is governed by various legislation, including the Utilities Commission Act, Electricity Reform Act and the Electricity Networks (Third Party Access) Act and is primarily administered by the Utilities Commission of the Northern Territory. However, as part of a recent reform process, the AER has been given responsibility for network price regulation and oversight of network access.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The authorisations required to construct and operate generation facilities include a combination of the following:

- environmental, planning and works approvals under state (and potentially federal) environment protection and state planning legislation;
- the grant of environment protection licences and approvals for the operation of the generation facility under state (and potentially federal) environment protection legislation;
- the grant of a generation licence by the relevant state regulator under state electricity legislation; and
- for the purposes of the NEM, as required pursuant to section 11 of the NEL, registration under the Rules (unless a prescribed exemption is applicable).

In the Australian government's Energy White Paper released on 8 April 2015 (White Paper), a commitment was expressed to continuing to work with state and territory governments 'to reduce duplication in the approval processes on land and coastal waters through a 'one-stop shop' for environmental approvals'. In addition, a National Review of Environmental Regulation has commenced to identify 'unworkable, contradictory and incompatible environmental regulation'. The Australian government released the Interim Report of the National Review of Environmental Regulation in March 2015.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The policies are summarised and discussed in the responses to questions 1 and 9.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Federal and state government policy and legislation has encouraged power generation based on renewable energies. For example:

- The federal government recently signed the Paris Agreement. This agreement was made within the framework of the United Nations Framework Convention on Climate Change. Australia has set an emissions reduction target of 26–28 per cent on 2005 levels by 2030.
- The Renewable Energy (Electricity) Act 2000 (Cth) – This Act introduced a national Renewable Energy Target (RET) scheme requiring electricity retailers to source a proportion of their electricity from renewable energy facilities. Compliance is achieved by the retailer obtaining renewable energy certificates.

  The object is for 20 per cent of Australia's electricity to be generated by renewable energy facilities by 2020. The Renewable Energy (Electricity) Amendment Act 2015 reduced the renewable energy target from 41,000GWh to a new target of 33,000GWh of large-scale renewable energy generation in Australia by 2020. It is estimated that the current RET target would result in 23.5 per cent of Australia's electricity generation in 2020 being sourced from renewable sources.
- The federal government also implemented the Carbon Farming Initiative Amendment Act 2014 (Cth) to provide the framework for its Direct Action Policy (DAP). The central feature of the DAP is the establishment of the A$2.55 billion Emissions Reduction Fund to be applied for investment in carbon abatement.

The amended Carbon Credits (Carbon Farming Initiative) Act 2011 (Cth) provides that entities may undertake an approved emissions reductions project and seek funding from the government. The Clean Energy Regulator will issue 'Australian carbon credit units' (ACCUs) for emissions which are created and audited under approved methods. The Clean Energy Regulator may enter into contracts for the purchase of ACCUs following a 'carbon abatement purchasing process' to be conducted in accordance with the Carbon Credits (Carbon Farming Initiative) Rule 2015. The first reverse auction was conducted in April 2015, in which the government secured contracts for 47 million tonnes of carbon dioxide equivalent (CO_2-e) abatement at an average price per tonne of A$13.95. In a reverse auction conducted in April 2016, the government secured contacts for 50.5 million tonnes of carbon dioxide equivalent (CO_2-e) abatement at an average price per tonne of A$10.23.

The framework for DAP also provides for a safeguard mechanism under the amended National Greenhouse and Energy Reporting Act 2008 which commenced on 1 July 2016. The purpose of the safeguard mechanism is to ensure that the reductions purchased are not displaced by a significant rise in emissions elsewhere in the economy. In the Emissions Reduction Fund White Paper, released in April 2014, it was identified that the safeguard mechanism would cover facilities with direct emissions of more than 100,000 tonnes of CO_2-e (the covered facilities are operated by around 130 businesses and account for approximately 52 per cent of Australia's emissions).

State legislation and 'renewable energy action plans' have been also introduced. For example:

- Victoria introduced the Victorian Energy Efficiency Target Act 2007. The Victorian Energy Efficiency Target Scheme has now been amended to set targets for each year from 2016 to 2020. There have also been proposals by the Victorian government to

implement a state-based renewable energy target of 25 per cent by 2020 and 40 per cent by 2025; and
- in September 2013 the New South Wales government released its 'Renewable Energy Action Plan'. The object of this plan is aligned with the object of the RET scheme.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

In addition to the response to question 5, the following findings and forecasts made by the AER in the 'State of the Energy Market 2015' can be noted:
- Coal-fired generation output declined by 12 per cent during the two years that the carbon emissions trading scheme under the Clean Energy Act 2011 was in place. The AER noted that the abolition of carbon pricing on 1 July 2014 reversed this trend. In particular, the output from brown coal generation increased by 10 per cent in 2014–2015.
- Wind generation has risen rapidly under climate change policies such as the RET. Around 270 megawatts (MW) of wind capacity was added into the NEM in 2014–15. Over the four years to 30 June 2015, 61 per cent of generation capacity added to the NEM was wind generation (which is subsidised by the RET).
- Hydro generation output declined by 29 per cent during 2014–2015. This is a reversal of the 36 per cent increase in hydro generation output during 2012–2013 that was maintained in 2013–14.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The AEMC released a report in December 2015 that examined whether the existing regulatory frameworks are sufficiently flexible to integrate energy storage technologies. There were several issues with the regulatory framework that were identified as potentially acting as a barrier to the integration of storage in the NEM. However, it was also identified that batteries and storage technologies can be accommodated within the existing regulatory framework, although it has been acknowledged by the AEMC that improvements could be made to facilitate installation. For example, in many cases, a storage device can be treated as a generator having the same capacity and characteristics. Also, in relation to network regulation, storage can be classified as a contestable service.

The AER administers the Demand Management Innovation Allowance (DMIA) and Demand Management Innovation Scheme (DMIS). There have been recent changes to the DMIA designed to provide incentives for distribution businesses to undertake demand management projects as alternatives to implementing network options. This may provide a funding path for the testing and trial of innovative non-network solutions (such as battery storage). The AER is required to develop and publish an incentive scheme and innovation allowance by 1 December 2016.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

In its 2015 Energy White Paper, the Australian government has identified that there are legislative restrictions on the use of nuclear energy in Australia. In particular, it was stated that approval cannot be provided for the construction or operation of nuclear plants in Australia under either the Environment Protection and Biodiversity Conservation Act 1999 or the Australian Radiation Protection and Nuclear Safety Act 1998.

In the Energy White Paper, the Australian government has not committed to either supporting or not supporting the use of nuclear energy in Australia. It stated that it would consider the outcomes of the South Australian Royal Commission into its future involvement in the nuclear fuel cycle including the mining, enrichment, energy and storage phases for the peaceful use of nuclear energy. The Royal Commission delivered its report on 6 May 2016, recommending that the South Australian government pursue the removal, at the Federal level, of the current prohibition on nuclear power generation to allow this form of generation to contribute to a low-carbon electricity system if required.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

In accordance with clause 2.5.1 of the Rules, a person must not engage in the activity of owning, controlling or operating a transmission network unless that person is registered by AEMO as a transmission network service provider (TNSP).

In addition, a number of the state jurisdictions require TNSPs to be licensed (or hold an authorisation) pursuant to the state's legislative regime for electricity regulation.

The relevant state authorisations typically include:
- an environmental approval;
- planning and construction approval; and
- appropriate land rights, by way of easement, lease or licence granted by landowners over which the transmission network will pass.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Clause 5.3 of the Rules specifies the process by which a registered participant or proposed registered participant may make a request to establish or modify a connection to a transmission network.

An offer to connect must be fair and reasonable and must be consistent with the safe and reliable operation of the power system in accordance with the Rules. The TNSP and the connection applicant must negotiate in good faith to reach a connection agreement. In the event of a dispute, Part K of Chapter 6A of the Rules provides for commercial arbitration of that dispute.

Access

There is no ability for a generator in the NEM to secure 'firm' access rights to the transmission network. Accordingly, generators which are connected to the transmission network face congestion risk. The AEMC previously developed a proposed Optional Firm Access (OFA) model, pursuant to which generators would be entitled to pay TNSPs for the right to secure 'firm' access, and be charged by TNSPs in accordance with the costs of providing that access to firm capacity. The AEMC's final report to the Standing Council of Energy and Resources concluded that the implementation of OFA would not contribute to the achievement of the NEO, although circumstances may arise in the future where there is a need for significant additional investment where the location and type of investment is uncertain, in which benefits may be derived from an OFA.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

There are no specific governmental (for example, tax) incentives offered for expansion or augmentation of transmission networks.

In accordance with the Rules, the AER will only approve forecast capital expenditure where the AER is satisfied that the forecast reasonably reflects, among other things, the efficient costs of meeting demand and maintaining the quality and reliability of services.

Other incentives for TNSPs in the NEM include an efficiency benefit sharing scheme (EBSS) for operational expenditure, under which the AER determines the manner in which benefits of efficiency gains are shared between network businesses and network users. In accordance with the Rules, the AER has the power to apply an EBSS to capital expenditure for both transmission and distribution network businesses.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The AER must make transmission determinations for TNSPs in accordance with Chapter 6A of the Rules for prescribed transmission services and negotiated transmission services.

A TNSP is required to prepare a 'negotiating framework' that sets out the procedure to be followed for the purposes of negotiations to agree upon the terms and conditions of access.

In addition, the TNSP must submit to the AER a 'revenue proposal' and a proposed 'pricing methodology' relating to the transmission services provided by means of the transmission system owned, controlled or operated by that TNSP. This process involves forecasting the revenue requirements needed to cover efficient costs and provide a commercial return on capital investment.

The AER makes a final decision in respect of the transmission determination. Upon the AER making that final decision, the transmission determination will apply for a prescribed 'regulatory control period' (being a period of not less than five years).

Section 7A of the NEL specifies the Revenue and Pricing Principles, which provide that a regulated network service provider should be provided with a reasonable opportunity to recover at least the efficient costs the operator incurs in providing direct control network services and complying with a regulatory obligation or requirement or making a regulatory payment.

The costs that a TNSP can recover are determined using the 'building block' approach. This approach is used to ensure that the expenditure of each transmission network service provider is amortised appropriately over time.

The maximum allowable revenue calculated using the building block methodology is converted into network prices using demand forecasts. In the case of TNSPs, the network pricing is set according to a 'revenue cap' methodology and the AER sets the 'maximum allowed revenue' for each year of the regulatory control period.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

AEMO is primarily responsible for assuring reliability of the transmission grid in the NEM. The relevant powers and responsibilities are summarised in question 2.

Reliability of the transmission network is determined in accordance with the standards specified in the NEL and the Rules. In particular, clause 4.3 of the Rules specifies the scope of AEMO's responsibilities for ensuring power system security, including in relation to the transmission network.

Reliability standards are also specified in respect of each participating jurisdiction within the NEM. State and territory electricity regulators have responsibility for monitoring compliance by TNSPs with the reliability standards that apply within that state or territory.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

As with question 9, subject to certain exemptions (including for embedded networks), a person wishing to engage in the activity of owning, controlling or operating a distribution system must be registered by AEMO as a distribution network service provider (DNSP) in accordance with clause 2.5.1 of the Rules.

In addition to the requirements for registration under the Rules:

- for a person to own and operate a distribution network, several of the state or territory jurisdictions require DNSPs to be licensed (or hold an authorisation) pursuant to the legislative regime of that state or territory for electricity regulation; and
- the construction of a distribution network may require environmental and/or planning approvals in accordance with the applicable state or territory jurisdictional requirements, similar to those required for transmission network services (see question 9).

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

In accordance with Chapter 5 of the Rules, and as described in question 10, a person seeking connection to a distribution network is required to make an application to the applicable DNSP in accordance with the process specified in clause 5.3 of the Rules.

Under the Rules, a person may apply to a DNSP for provision of 'direct control' services or 'negotiated distribution' services. Access to distribution services is negotiated by the DNSP and the connection applicant in accordance with the Rules. In particular, in accordance with clause 5.5 of the Rules, a DNSP must negotiate in good faith with the relevant connection applicant to reach agreement in respect of the distribution network access arrangement sought by the applicant, subject to those arrangements being consistent with good electricity industry practice.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

There are no specific governmental (for example, tax) incentives available for expansion or augmentation of distribution networks.

In accordance with the Rules, the AER will only approve forecast capital expenditure where the AER is satisfied that the forecast reasonably reflects, among other things, the efficient costs of meeting demand and maintaining the quality and reliability of services.

An EBSS for operational expenditure also applies to DNSPs (see question 11).

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

In the NEM, DNSPs are subject to both revenue and price regulation. Pursuant to Chapter 6 of the Rules, the AER makes a distribution determination that applies to a DNSP for a regulatory control period of not less than five years.

A distribution determination imposes controls over the prices of direct control services, the revenue to be derived from direct control services, or both.

Under Chapter 6 of the Rules, the same pricing principles as described in respect of transmission network services in question 12 are applied by the AER in making distribution determinations. However, the methodology used varies as between the participating states and territories. In particular:

- a revenue cap applies to DNSPs in Queensland and Tasmania;
- a weighted average price cap applies to DNSPs in New South Wales, Victoria and South Australia; and
- a maximum average revenue cap applies to the DNSPs in the Australian Capital Territory.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Retailers must obtain an authorisation (or licence in jurisdictions which have not adopted the NECF) unless an exemption applies. An authorisation will apply in all NECF participating jurisdictions as the AER does not have the power to limit the jurisdiction where the retailer can operate.

The AER is responsible for granting and monitoring compliance with authorisations and the NECF. In participating jurisdictions that have not implemented the NECF, the relevant state regulator is responsible. A prospective retailer must apply to the AER or the applicable state regulator for an authorisation or licence (as the case may be).

Under the transitional provisions of National Energy Retail Regulations, existing retailers who hold a retail licence are taken to hold a (national) retailer authorisation. However, before the implementation date of the NECF in the relevant jurisdiction, retailers and distributors must ensure that all applicable retail contract offers, customer policies and regulatory approvals comply with the NECF.

In order to purchase electricity at the wholesale level, retailers are also required to register with the AEMO as a 'Customer' under Chapter 2 of the Rules.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

There are two classes of mass market customer contracts: standing retail contract; and market retail contracts.

Standing retail contracts

Standing retail contracts are basic contracts for residential and certain small business customers who do not negotiate a market retail contract. In some states (such as Tasmania) the designated retailers are obliged to offer standing retail contracts at regulated prices set by an independent energy regulator. In Victoria, although all retailers must offer standing retail contracts, standing offer rates are determined by the retailer and not the regulator.

The provisions of standing retail contracts are more regulated than market retail contracts and the rights of retailers to vary the terms or rates are also limited by legislation.

Market retail contracts

Market retail contracts are negotiated between the customer and the retailer. The prices are set by the retailer not the regulator. Market retail contracts must include the minimum terms and conditions prescribed by applicable law.

All jurisdictions participating in the NEM have full retail contestability.

Prices for the retail supply of electricity have been deregulated in South Australia, Victoria and New South Wales. Market monitoring, in place of retail price regulation, commenced in southeast Queensland on 1 July 2016.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

See 'Operation of the NEM' in question 2.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The designated retailer (being the local area retailer, where there is no connection or the financially responsible retailer, where there is an existing connection) must offer to supply electricity to small customers at the standing offer prices and under the retailer's standing retail contract. Under the NECF there is also a retailer of last resort scheme, which provides for the continuity of supply to customers of a failed retailer by the retailer of last resort appointed by the AER.

Under the NECF, retailers are required to develop and implement a customer hardship policy for customers experiencing payment difficulties caused by hardship to assist these customers to pay their energy bills. These policies must be approved by the AER.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

Regulatory policy is determined by the Ministerial Council on Energy (taking into account reviews conducted by the AEMC) together with the economic regulatory functions and powers conferred upon the AER.

23 Scope of authority

What is the scope of each regulator's authority?

A summary of each regulator's authority is set out in the response to question 2.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

Each regulator is established by statute as summarised in question 2, independent of each 'regulated business' and is a government body.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

There is no right of appeal from a decision by the ACCC under its informal merger review process. The potential acquirer would either seek a declaration from the Federal Court or pursue an application for authorisation (discussed further in question 27). Under the existing law, a decision of the ACCC under the CCA for formal merger clearance can be reviewed by the Australian Competition Tribunal (Tribunal). An Exposure Draft Bill to amend the CCA has been released for consideration. The proposed amendments include a reform of this process (discussed in the 'Update and Trends' section).

Otherwise, the ACCC would make an application to the Federal Court and a respondent would have a right of appeal in accordance with the rules of that court.

The NEL grants affected or interested persons the ability to apply to the Tribunal for a review of an AER determination. The NEL provides a mechanism for 'limited merits review'.

The NEL requires an applicant to demonstrate a prima facie case that a review by the Tribunal would, or would be likely to, result in a materially preferable outcome in the long-term interests of consumers.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Section 50 of the CCA and the other provisions of the CCA insofar as they relate to section 50, represent the statutory regime for the assessment by the Australian Competition and Consumer Commission (ACCC) of a potential acquisition in an electricity market in Australia.

In 2007, the Energy Reform Implementation Group was satisfied that section 50 was sufficient to regulate horizontal mergers and that there was 'no evidence to support the assertion that the electricity market is special from an economic or regulatory perspective'. However, it recommended that a cross-ownership rule should proscribe mergers between generators and transmission enterprises.

Notwithstanding this recommendation, no such rule has been introduced. In any event, the ACCC would resist such a transaction, having noted the risk where an owner of essential infrastructure also participates in a contestable market.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The following discussion should be read in the light of the proposed amendments to the CCA in the Exposure Draft Bill discussed in the 'Updates and trends' section.

Under the existing law, Division 3 of Part VII of the CCA provides for a statutory merger clearance procedure. It was introduced on 1 January 2007, but has not been used.

The informal merger review process of the ACCC is applied universally. The informal merger review process is supported by the ACCC Merger Guidelines and the ACCC Informal Merger Review Process Guidelines.

The informal merger review process is administrative (ie, non-statutory) in nature. However, it is supported by provisions of the CCA, including section 80(1A) (the power conferred upon the ACCC to apply for injunctive relief), section 87B (enforceable undertakings) and section 155 (information gathering powers).

The section 50 test

The test under subsection 50(1) of the CCA is whether a proposed acquisition would have the effect, or be likely to have the effect, of substantially lessening competition in any market.

This question is determined by the use of the 'future with-and-without' test. This test requires a consideration of the likely state of future competition in the relevant market 'with' and 'without' the proposed acquisition. The 'without' scenario, or 'counterfactual', is the likely state of affairs in the market in the absence of the proposed acquisition.

Authorisation

As evidenced by the Tribunal in Application for Authorisation of Acquisition of Macquarie Generation by AGL Energy Limited, an alternative statutory pathway for approval of a proposed acquisition of assets or shares is authorisation by the Tribunal under section 95AT of the CCA.

If authorisation is granted, section 50 of the CCA will not prohibit completion of the acquisition in accordance with the authorisation.

The test under section 95AZH of the CCA requires the identification and evaluation of public benefit and public detriment likely to arise from a proposed acquisition. The most prominent public detriment will be competitive detriment. The analysis requires definition of a counterfactual and a comparison of the 'future with' and the 'future without' the proposed acquisition.

Procedure and timing

Under the statutory merger clearance procedure, if a determination is not made by the ACCC within 40 business days after the application made, the ACCC is taken to have made a determination refusing to grant the clearance. That period can be extended for an agreed period or by the ACCC by 20 business days (either because of its complexity or other special circumstances).

Under the ACCC informal merger review process, a 'pre-assessment' process may take around three to four weeks.

If the ACCC decides that it should conduct a public review, a period of approximately eight to 12 weeks would be added to the process. If the ACCC requires additional information following the public review process, the timetable may become further extended.

If the ACCC has concerns upon completion of its public review, it will publish a Statement of Issues. This will cause a further revision and extension or suspension of the timetable.

Ultimately, the ACCC will either issue a letter of 'no objection' (with or without an enforceable undertaking accepted from the acquirer) or oppose the proposed acquisition.

Under the authorisation process, the Tribunal is required to make its determination within the period of three months beginning on the day the application was given to the Tribunal. If the Tribunal decides that this period needs to be extended because of complexity or other special circumstances, the period can be extended by a period of not more than three months. If a determination is not made by that time, the Tribunal is taken to have refused to grant the authorisation.

Criteria

Subsection 50(3) of the CCA sets out an inclusive list of matters that must be taken into account in assessing a proposed acquisition.

Inherent within the test in section 50 of the CCA is the question of whether a proposed acquisition would confer upon the acquirer market power in any market. In this respect, barriers to entry, expansion and exit are of primary concern.

Market power

In the context of the wholesale electricity markets, a distinction is to be drawn between sustained market power and transient market power. According to the AEMC, the concept of 'substantial market power' in the wholesale market should be defined as the ability of a generator or group of generators to increase annual average wholesale prices to a level that exceeds estimates of long run marginal cost, and to sustain prices at that level due to the presence of significant barriers to entry.

Market definition

Market definition is an essential first step.

In the AGL authorisation decision, the tribunal confirmed the following:

- The market for the generation and supply of electricity in the NEM is a 'national market' including hedging and other derivative contracts; and
- The retail market for electricity is state or region based, with a distinction between commercial and industrial customers and mass-market customers.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

These are:

- For the purposes of the CCA – the ACCC; and
- for the purposes of the Rules – the AER.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Part IV of the CCA

The following discussion should be read in the light of the proposed amendments to the CCA in the Exposure Draft Bill discussed in the 'Update and Trends' section.

A market participant is subject to the provisions of the CCA, including the following:

- a contract, arrangement or understanding that has the purpose, or has or is likely to have the effect, of substantially lessening competition in a market (section 45);
- a market participant misusing a substantial degree of power in an electricity market (including 'predatory pricing') (section 46); and
- cartel conduct (which can be both civil and criminal in nature), which is directed towards price fixing, restricting output, allocating customers, supplies or territories and bid-rigging.

The Rules – making false or misleading offers

Clause 3.8.22A of the Rules previously provided that Scheduled Generators and Market Participants must make dispatch offers, dispatch bids and rebids in good faith. For a rebidding civil penalty provision, the civil penalty for any person is an amount not exceeding A$1 million.

In *Australian Energy Regulator v Stanwell Corporation*, the AER was unsuccessful in its claim that Stanwell Corporation had made rebids that were not in good faith. It was held that it is necessary to demonstrate 'that the relevant trader did not have an intention that the rebid be honoured for the dispatch intervals to which it related, at the time at which he made it'.

Following the *Stanwell* decision, the AEMC made a final determination to change clause 3.8.22A and replace the 'good faith' requirement with a prohibition on making a dispatch offer, dispatch bid or rebid that is false, misleading or likely to mislead. The making of the offer, bid or rebid is deemed to represent to other generators or market participants that it will not be changed unless the generator or market participant becomes aware of a change in the material conditions and circumstances on which that offer, bid or rebid is based. A rebid must be made as soon as practicable after the Generator or Market Participant becomes aware of a change in material conditions and circumstances. This change commenced on 1 July 2016.

Update and trends

Important issues for electricity markets in Australia include:
- The repeal of the CE Act, the changes to the RET scheme and the continued implementation of Direct Action Policy (see questions 5 and 6).
- Following the AGL acquisition of Macquarie Generation, the approach of the ACCC and potential acquirers to merger regulation (including market definition) for transactions between electricity market participants (see questions 27 and 28).
- Increased scrutiny of electricity network charges in light of the costs incurred by TNSPs and DNSPs in maintaining or augmenting network infrastructure (see questions 13 and 17).

The Harper Panel Competition Policy Review Final Report was released in March 2015. In relation to electricity markets in Australia:
- the Panel has noted 'with concern' the inconsistent application of the National Energy Retail Law by some jurisdictions observing that 'this will detract from the originally intended benefits'. The Panel recommended that National Energy Retail Law should be applied by state and territory governments in the NEM;
- the Panel recommended the transfer of responsibility for reliability standards to a national framework; and
- the Panel believes there would be 'competition benefits' if the Western Australian and Northern Territory electricity markets were to adopt 'the national legislative and institutional frameworks' of the NEM, without the need to be physically connected to the NEM.

The federal government supports the above recommendations. It also 'remains open' to recommendations regarding the 'institutional architecture' involved in administering particular aspects of competition policy, including transferring the functions undertaken by the Australian Energy Regulator under the NEL and the National Energy Retail Law to a body separate to the ACCC.

In response to the Harper Panel's Final Report, an Exposure Draft Bill to amend the CCA was released for public consultation on 6 September 2016. If this Bill is passed by the Commonwealth Parliament, it would provide, among other things, for the following changes:
- Replacing the current formal merger clearance and authorisation processes (discussed in question 27) with a new process in which the ACCC would have the power to authorise a merger if it is satisfied that the merger would not have the effect, or likely effect, of substantially lessen competition or would result in a benefit to the public that outweighs any detriment to the public. Under the new process, the ACCC would be the 'decision-maker at first instance', with a right of review by the Tribunal.
- The misuse of market power provision would be re-framed to prohibit a corporation that has a substantial degree of power in a market from engaging in conduct if the proposed conduct has the purpose, or would have or be likely to have the effect, of substantially lessening competition in that or any other market. In conducting this analysis, the court would be required to have regard to, among other things, the extent to which the conduct has the purpose or would be likely to have the effect of: (i) lessening competition in the market, including by preventing, restricting or deterring the potential for competitive conduct or new entry; and (ii) increasing competition in the market, including by enhancing efficiency, innovation, price quality or price competitiveness.
- The amendments to the provisions prohibiting cartel conduct would include removal of the definition of 'likely' so that it would have a consistent meaning where used in Part IV, a jurisdictional limit to trade or commerce within Australia or between Australia and places outside Australia, a broader joint venture exception and a broader exception for non-price vertical restraints.
- The prohibition on making or giving effect to a contract, arrangement or understanding with the purpose, effect or likely effect of substantially lessening competition would be extended to capture 'concerted practices'. There is no definition of 'concerted practice' in the Exposure Draft Bill. The Exposure Draft Explanatory Materials stated that 'the concept of a concerted practice is well established in competition law internationally.

The Commonwealth government was seeking the views of interested parties on the Exposure Draft legislation by 30 September 2016.

The Energy White Paper identified the Australian government's policy priorities in the energy market. The policy goals include:
- pursuing tariff reform to reduce cross-subsidies between consumers and to drive an increase in technology that allows customers to respond to price signals;
- removing unnecessary regulatory barriers and market interventions; and
- encouraging further privatisation of state-owned electricity assets to increase productivity and competition.

The Rules – market power

In its Final Rule Determination (26 April 2013), the AEMC rejected a Rule change request (which revolved around the concept of a 'dominant generator' as declared by the AER and the imposition of restrictions upon the dispatch offers that could be submitted by a 'dominant generator'), for the purpose of regulating the potential use of market power by generators in the NEM on the following primary grounds:
- The NEM is an 'energy-only' market. Spot price volatility is an inherent and necessary feature of a market with the characteristics of the NEM.
- Substantial market power is to be distinguished from 'transient pricing power' which is compatible with a workably competitive 'energy-only' market.
- The proposed Rule change would introduce a mechanism that would cause significant interference with normal market bidding behaviour by generators in the NEM.

The Rules – manipulative conduct

The AER submitted a Rule change request to the AEMC proposing a requirement for generator ramp rates and dispatch inflexibility profiles to reflect the technical capabilities of generating plant. While the AEMC was unconvinced that such an extensive change was necessary, it made a final rule determination to refine the existing requirements on generators to specify the minimum rates at which they may increase or decrease output. This rule commenced on 1 July 2016.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The CCA

The ACCC has significant powers conferred upon it under the CCA, including the following:
- the ACCC has the power to apply to the Federal Court for a declaration, and divestiture where an acquisition contravenes section 50 of the CCA;
- the ACCC can accept an enforceable undertaking pursuant to section 87B of the CCA; and
- the ACCC has the power to apply to the Federal Court for a pecuniary penalty for each act or omission in contravention of a provision of Part IV (other than the criminal cartel provisions) of the CCA.

The Commonwealth Director of Public Prosecutions has the power to apply to the Federal Court for a fine for cartel conduct that is an indictable offence (criminal cartel conduct) determined by criteria substantially identical to those applicable to a pecuniary penalty. In addition, in the case of an individual, a contravention of a cartel offence provision can be punishable by a term of imprisonment of not exceeding 10 years or a fine not exceeding A$220,000.

The NEL

The AER has various enforcement powers under the NEL, including the following:
- the AER may accept an enforceable undertaking pursuant to section 59A of the NEL; and

- the AER may make an application to the Federal Court or the Supreme Court of a participating jurisdiction for a declaration or an injunction.

If such a declaration is made, it may include an order that the person pay a civil penalty for a breach of a civil penalty provision determined in accordance with the NEL and the Rules.

The AER may serve an 'infringement notice' on a person that it has reason to believe has breached a civil penalty provision (other than a 'rebidding civil penalty provision').

The NEL contains 'offence provisions' a breach or contravention of which by a person exposes that person to a finding of guilt by a court.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

The Foreign Acquisitions and Takeovers Act 1975 (FATA) applies to the acquisition of interests in Australian businesses and assets by foreign persons. Notification under the FATA is subject to certain financial and other thresholds.

All notifiable transactions are subject to a review by the Foreign Investment Review Board (FIRB). FIRB makes a recommendation to the Federal Treasurer as to whether the acquisition is contrary to Australia's national interest. The Treasurer makes the decision. Generally, there is a 30-day period for a decision under the FATA, although this can be extended in certain circumstances, including where the applicant requests the time frame be extended.

There were a number of changes made to the foreign investment framework that commenced on 1 December 2015. The amended FATA was recently applied to prevent certain foreign bidders from purchasing electricity transmission assets in New South Wales under a privatisation process conducted by the New South Wales government.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

The rules that govern the construction and operation of transmissions assets are also applicable to interconnectors (see question 9).

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Not applicable in Australia.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

In accordance with clause 6.20.2 of the Rules, the AER is required to develop ring-fencing guidelines for TNSPs (with which they must comply under clause 6.20.1 of the Rules).

The guidelines require all TNSPs to ensure legal and operational separation of their transmission business from other related businesses (for the purpose of the guidelines, a 'related business' includes electricity generation, distribution or retail supply). Clauses 7.3-7.5 of the guidelines require a TNSP to separate the accounting and functional aspects of regulated transmission services from the remainder of its business.

Rule 6.17 of the Rules requires DNSPs to comply with any Distribution Ring-Fencing Guidelines made by the AER (although the Rules permit such guidelines to 'vary in application as between different participating jurisdictions'). However, no such national guidelines currently exist. A process is under way to develop the relevant ring-fencing guidelines for electricity distribution. The draft Distribution Ring-Fencing Guidelines were released for comment in August 2016. The AER was inviting submissions on the draft Guidelines by 28 September 2016.

Clause 6.17.2 of the Rules provides that the ring-fencing guidelines that were in force in a participating state or territory before the AER assumed regulatory responsibility (which the AER notes have been informed by 'national competition principles') continue to apply in that jurisdiction unless the AER amends, revokes or replaces the guidelines.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

See question 34.

KING&WOOD MALLESONS

Andrew Monotti **andrew.monotti@au.kwm.com**
Simon Cooke **simon.cooke@au.kwm.com**
William Osborn **william.osborn@au.kwm.com**

Level 50, Bourke Place
600 Bourke Street
Melbourne
VIC 3000
Australia

Tel: +61 3 9643 4217
Fax: +61 3 9643 5999
www.kwm.com

Austria

Bernd Rajal and Azra Dizdarevic
Schönherr Rechtsanwälte GmbH

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Since 1 October 2001, the Austrian electricity market has been fully liberalised on the basis of the European Union (EU) electricity directives and regulations (for example, Directive 2003/54/EC concerning common rules for the internal market in electricity, repealed by Directive 2009/72/EC, and Regulation (EC) No. 1228/2003 on conditions for access to the network for cross-border exchanges in electricity, repealed by Regulation (EC) No. 714/2009). Until the liberalisation of the electricity market in 2001, the electricity sector reflected Austrian post-war policy: public utilities acted on the Austrian market and prices were regulated by the state.

According to the Federal Constitution, the competence to regulate electricity is divided between federal state legislature and the federal states. The federal legislature has the authority to enact regulations on common principles of electricity concerns. The states have the authority to regulate electricity concerns on the basis of federal law. Therefore, the Federal Electricity Management and Organisation Act 2010 (ElWOG 2010) provides common principles concerning the electricity sector, whereas the Electricity Management and Organisation Acts of the nine Austrian states (the state-level Electricity Acts) consist of detailed regulations on electricity (for example, the Tyrolean Electricity Act 2012 (TEG) or the Electricity Management Act 2005 of Vienna, as amended (WElWG)).

The ElWOG and the state-level Electricity Acts provide regulations concerning the organisation and management of the Austrian electricity market. The main purposes of the ElWOG are:

- the provision of low-priced high-quality electricity to the Austrian population and economy;
- the establishment of a market organisation in accordance with European law;
- the use of the potential of power-heat coupling in order to save energy and provide sustainable security of supply;
- the implementation of a legal framework assuring sustainable security of network operation and supply;
- the further development of electricity generation from renewable resources;
- the safeguarding of network accessibility for electricity generation from renewable resources; and
- the imposition of public service obligations on electricity undertakings.

Other relevant acts providing regulations on electricity on a federal level are:

- the Green Electricity Act 2012, which promotes renewable energy;
- the Cogeneration Act, which promotes cogeneration plants (combined heat and power);
- the Energy Directing Act 2012, providing regulations on security of supply in times of crisis;
- the Energy Control Act 2010 (E-ControlG), as amended, providing regulations on the regulatory authority (E-Control);
- the Federal Act on Electricity Line Facilities 1968, providing common principles for construction and initial operation of electricity line facilities for the nine states;
- the High Voltage Current Line Act 1968, as amended, regulating electricity line facilities extending to more than one state;
- The Energy Infrastructure Act 2016, implementing guidelines on European infrastructure as stipulated by Council Regulation (EU) No 347/2013 (TEN-E Regulation);
- The Environmental Impact Assessment Act 2000, regulating the conditions and procedures for projects that have an impact on the environment.
- the Clearing House Act, regulating the activities and the organisation of clearing houses for transactions and pricing of balancing energy;
- the Water Rights Act 1959, as amended, providing regulations on water protection;
- the Federal Constitutional Act on the Ownership Structure of the Electricity Industry 1998, regulating the ownership of specific electricity undertakings;
- the Federal Constitutional Act for a Nuclear-Free Austria 1999, in connection with the Federal Act on the Prohibition of the Use of Nuclear Fission for the Energy Supply in Austria 1978, prohibiting the construction of any facility that produces electricity for the energy supply by nuclear fission; and
- the Federal Energy Efficiency Act, providing for an increase of energy efficiency on federal state level and at private undertakings.

Until 2010, the electricity market was regulated by two regulatory authorities on an administrative level: E-Control and the E-Control Commission. In transposition of Directive 2009/72/EC, the ElWOG 2010 amended the regulatory authority system by stipulating a 'one authority' system. Accordingly, as of 3 March 2011, E-Control, a public law institution, is in charge of energy market regulation on an administrative level. However, the regulatory tasks are still fulfilled by different bodies of E-Control, namely, the responsibilities are divided between the managing board and the regulatory commission of E-Control. It is ambiguous whether the new system applied to Austria's regulatory authorities complies with the requirements of Directive 2009/72/EC. Apart from E-Control, the federal Minister of Science, Research and Economy (the highest administrative authority at federal level) and various other administrative authorities, such as the state governments, are competent in the electricity sector.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Since the electricity market was liberalised in 2001, the Austrian energy sector has changed and market economy structures have been implemented. Vertically integrated electricity undertakings had to unbundle the operation of the grid, which can be considered as a natural monopoly, from the competition-oriented business areas such as supply or generation, in terms of legal form and organisation (see question 14). Transmission system operators (TSOs) have to be either ownership unbundled (OU) or be set up as an independent system operator (ISO) or independent transmission operator (ITO). The Austrian Power Grid AG, competent for the operation of the transmission systems East and Tyrol, opted for the ITO model, whereas the Vorarlberger Übertragungsnetz

GmbH (VÜN), competent for the operation of the transmission system in Vorarlberg, opted for the OU model.

Transmission and distribution grids are subject to regulatory intervention, for example, through fixed system-use tariffs set out by the regulatory authorities (see questions 12 and 17). Nevertheless, for the competition-oriented business areas regulatory supervision remains in place. Monitoring of compliance of supply and generation activities with competition rules falls within the competence of E-Control. Another characteristic feature of state regulation is the fact that at least 51 per cent of the shares of certain Austrian electricity companies, including the Austrian Electricity Industry Corporation (Verbund-Gesellschaft, AEIC), have to remain state-owned (see question 31). AEIC generates the vast majority of electricity in Austria, followed by state or other utilities. The main energy sources used by AEIC are hydropower plants, which provide more than 60 per cent of Austria's energy output. Transmission system operations (380/220/110kV transmission lines) are solely performed by the TSOs: Austrian Power Grid AG (APG, a subsidiary of AEIC) and VÜN. Distribution systems are operated by more than 130 distribution system operators (DSOs) in Austria, among which are the provincial electricity companies. The supply branch of some of the provincial electricity companies (Energie Burgenland AG, Wien Energie GmbH und EVN AG) is confederated in the Austrian Energy Alliance.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

According to the regulations at state level, an authorisation from the respective Austrian state is generally required for the construction and operation of electricity generation facilities; nevertheless, specific facilities may be notified to the authority only (compare TEG, section 7).

Basically, the competent authorities for authorisations according to the aforementioned state-level acts are the various state governments, and, for notifications, the district governments (compare TEG, section 7).

Additionally, other authorisations may be required depending on the specific facility (for example, authorisation on the basis of the respective Building Act, the Environmental Impact Assessment Act, the Nature Protection Act or the Water Rights Act 1959).

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

According to the provisions of the ElWOG in connection with the state-level Electricity Acts, network operators have to grant network access to all individuals, legal persons or groups of persons who want to feed in electricity to the grid. The network access has to be granted on a non-discriminatory basis by conclusion of civil grid connection contracts between network operator and network user. The grid connection contracts are standardised and have to be approved by the regulatory authority (see question 10). In the event of network capacities bottlenecks, green electricity producers benefit from a preferred network access right.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Since the 1970s the share of renewable energy in gross domestic consumption has more than tripled. In 2013, the share of renewable energy in gross domestic consumption amounted to 32 per cent. The domestic power generation market is characterised by a high share of energy produced from renewable sources. In 2013, the share of energy generated from renewable sources (renewable energy) amounted to 68 per cent (which means an increase of 51 per cent compared with 1990). The types of renewables that contributed most to the total volume of renewable energy were hydropower with 38 per cent and solid biomass with 32.8 per cent. Other important contributions were from biofuels with 5.1 per cent.

The Renewable Energy Sources Directive 2009/28/EC, sets a national target of a 34 per cent share of renewables in Austria and, therefore, Austrian energy policy shows essential efforts to expand these sources. To ensure that the national overall target of 34 per cent is achieved, the (former) federal Minister of Economy, Family and Youth (now the federal Ministry of Science, Research and Economy) and the federal Minister of Environment released political guidelines titled 'Austrian Energy Strategy', published in March 2010. The Austrian Energy Strategy (AES) provides the basic principles of the energy policy until 2020. The AES calls for a rapid but sustainable expansion of energy generation from renewable resources. As of 2013 more than 50 per cent of the measures defined in the AES have been transposed. Accordingly, the national renewable energy action plan (NREAP), which, under Directive 2009/28/EC, had to be notified to the European Commission by June 2010, sets out the aim of increasing energy generation from hydropower, wind power, biomass and solar. Moreover, the NREAP states that wind power, biomass and solar shall benefit from the green electricity promotion scheme.

Provisions concerning renewable energy can be found in the ElWOG and the Green Electricity Act. In compliance with Directive 2009/72/EC, the ElWOG stipulates that, in the case of grid capacity shortfalls that are linked to the necessity of dispatching generation installations, TSOs have to give priority to installations using renewable energy resources (section 23 of the ElWOG). On 1 July 2012 the new Green Electricity Act 2012 entered into force. It provides more favourable promotional schemes for renewables such as windpower and biomass. The Cogeneration Act contains provisions on the promotion of combined heat and power plants. The latest energy statistics demonstrate that Austria is on track to achieve the 34 per cent target before 2020.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

In July 2011, the Green Electricity Act 2012 was released and entered into force on 1 July 2012. Among other modifications, the promotion volume for renewable energy sources has been increased to €50 million each year. This has, among other matters, increased investment in national renewable energy projects and aimed to create independence from nuclear power imports by 2015. However, approximately 13.5 per cent of Austria's gross power demand is covered by power imports, mainly from Germany and the Czech Republic, which creates a certain dependence on nuclear power.

Gross electricity generation in 2013 slightly decreased to 68TWh compared with the 2012 height of 72.3TWh. The share of renewable electricity and hydroelectric power plants in 2013 amounted to 49.1TWh. In 2013 Austrian households had a share of 24 per cent of the gross energy consumption. In 2014 the electricity price charged to final consumers for medium-sized households amounted to €0.132 per kWh compared with €0.141 in 2013. For industrial consumers the electricity price was €0.083 per kWh in 2014 (€0.087 in 2013).

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Pursuant to the Tyrolean Electricity Act 2012 (TEG) the development of storage technologies is one of the core objectives of the Tyrolean energy policy. The construction and operation of electricity storage as well as the research and development of storage solutions are therefore considered to be in public interest. This is from particular importance for new storage projects since, in the event of conflicting private or public interests, the project developer may successfully claim overriding public interest.

Pursuant to section 111 para 3 ElWOG new pumped-storage power plants and facilities for the conversion of electricity to hydrogen or synthetic natural gas (power-to-gas facilities, P2G facilities) are exempt from paying system charges (network tariffs) until 2020.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The Federal Constitutional Act for a Nuclear-Free Austria 1999, in connection with the Federal Act on the Prohibition of the Use of Nuclear Fission for the Energy Supply in Austria 1978, provides for a general prohibition on constructing any facility that produces electricity for the energy supply by nuclear fission. A change of Austrian energy policy towards nuclear power is not expected.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Whereas the ElWOG regulates, in connection with the state-level Electricity Acts, the construction and operation of electricity lines on the property of the constructor and operator of the electricity line, the Federal Act on Electricity Line Facilities in connection with the state-level Electricity Line Facilities Act, provides regulations for the construction and operation of electricity lines on properties of other persons.

Generally, an authorisation or notification of the competent authority (state government, district government) for the construction and (initial) operation of electricity lines may be required. Additionally, other authorisations may be needed depending on the specific facility.

Furthermore, in order to operate a transmission network, TSOs have to be certified by E-Control in accordance with the procedure rules as laid down in section 34 of the ElWOG. The designation of a TSO has to be notified by E-Control to the European Commission.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Pursuant to section 15 of the ElWOG, in connection with the state-level Electricity Acts, system operators shall grant access to all parties entitled to system access (producer and customers) to their systems. This has to be granted on the basis of approved general terms and conditions and also according to specific charges regulated by E-Control.

The conditions for system access may neither be discriminating (no abusive practices, no unjustified restrictions), nor endanger the security of supply or quality of service; discriminatory behaviour, in particular behaviour that is conducted in favour of the vertically integrated undertaking can be fined (sections 99 and 104 of the ElWOG); in specific cases system access may be denied (compare with sections 20 and 21 of the ElWOG).

Access may be refused for the following reasons:

- extraordinary grid conditions (incidents);
- insufficient grid capacity;
- if grid access is refused for electricity supplies to a customer who is not deemed to be an eligible customer in the grid from which these supplies are effected, or are to be effected; and
- if electricity from district-heating-oriented, environment and resource conservations as well as economically and technically efficient cogeneration installations, or from plants using renewable energy, would otherwise be crowded out despite compliance with current market prices (section 21 of the ElWOG).

The reasons for such refusal shall be communicated to the party entitled to grid access. If access to the system is refused by the operator, E-Control has to decide upon the request of the affected party within one month whether the refusal of system access was justified.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The legal framework does not provide for rate or tax benefits, but new direct interconnectors (transmission lines that cross or span a border between member states and that connect the national transmission systems of the member states) may be exempted from the regulated regime under the conditions of EC Regulation No. 714/2009, article 17, on conditions for access to the network for cross-border exchanges in electricity. Significant increases of capacity in existing interconnectors also fall within the scope of the provision, which is directly applicable in all member states. TSOs are obliged to elaborate annually a 10-year network development plan, which has to be submitted for approval before E-Control (section 37 of the ElWOG). E-Control supervises the execution of the approved network development plan and may require the TSOs to amend their plans if the development activities seem to be insufficient in light of the development goals. The 2015 network development plans of APG and VÜN were approved by E-Control on 27 November 2015.

On 14 October 2014 the European Commission adopted a list of 248 projects of common interest (PCIs) under the TEN-E Regulation (first PCI list), among them nine Austrian electricity projects. Subsequently, the European Commission amended the first PCI list on 18 November 2015 to the extent that it presently contains 195 PCIs, out of which three are Austrian electricity projects (second PCI list). These projects benefit from faster and more efficient permit granting procedures. Further, these projects may be financially supported from the funds of Connecting Europe Facility, to which a budget of €5.85 billion has been allocated for the period 2014 to 2020.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The rates for the provision of transmission services are determined by E-Control (regulatory commission) through legal ordinance. The ordinance is based on the network costs and quantity structure of the network operators. Both network costs and quantity structure are determined through an administrative decision of E-Control. Network operators have the right to appeal against this decision. The terms for the provision of transmission services are authorised by E-Control through individual administrative decisions.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Generally, the Austrian transmission system is divided into three different control areas: East, Tyrol and Vorarlberg. The control areas are operated by independent TSOs, who perform as control area managers. Since 2011 the control area of Tyrol is operated by the control area manager of the control area East, APG. Since 2012 the TSO of Vorarlberg, VÜN, cooperates with APG. The control areas are de facto operated by one control area manager, APG. In connection with the operation of transmission systems, precautions have to be taken to avoid the system schedule falling apart from the purchased amount of energy. Balancing the difference between system schedule and purchased energy is performed within virtual balance groups by the balance group representative. Such balance groups consist of producers, other suppliers of electricity and customers. The balance of electricity of each balance group is cleared and settled by settlement agencies (balance group coordinators), which are responsible for the coordination of system operators and balance groups with respect to the supply and demand of energy in a specific control are. As sole clearing house Austrian Power Clearing and Settlement AG takes charge of the clearing for Austria.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

According to ElWOG, section 42, paragraph 1, the operation of a distribution system within a state requires a licence. The procedure and conditions are regulated by the legislature of the nine Austrian states. Therefore, for example, the TEG provides the procedure, and personal and material conditions for the person (entity) applying for a licence in the state of Tyrol. Section 41 of the TEG regulates that the competent

authority is the state government. A licence is only granted, inter alia, if nobody holds a licence in the area for which a licence is applied and the existing and planned facilities of the distribution system are principally suitable.

DSOs serving more than 100,000 connected customers and being part of a vertically integrated undertaking – that is, an undertaking or a group of undertakings whose mutual relationships are defined in EC Merger Regulation 139/2004, article 3(3), and where the undertaking or group concerned is performing at least one of the functions of transmission or distribution and at least one of the functions of generation or supply of electricity – have to be independent at least in terms of their legal form, organisation and decision-making from other activities not relating to distribution.

Licences may also be leased (section 53 TEG); the authorisation of the state government is required for such demises. Depending on the distribution system (facilities), various authorisations for construction and operation may be required (see question 9).

DSOs have to comply with the unbundling requirements as set out in Directive 2009/72/EC. In particular, vertically integrated distribution system operators are not allowed to create confusion in respect of the separate identity of the supply branch of the vertically integrated undertaking, for example, by using identical or similar branding.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

According to the ElWOG and the state-level Electricity Acts, DSOs shall grant customers and producers access to their system under approved general terms and conditions as well as specified charges for system use, which are approved by E-Control. DSOs may not conduct any discriminatory behaviour towards network users. Discriminatory behaviour may incur a fine in accordance with sections 99 and 104 of the ElWOG; nevertheless, system access may be denied in certain circumstances (see question 10).

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

The legal framework does neither provide for regulator involvement nor rate or tax benefits as incentive for the expansion of the distribution network. Moreover, neither the ElWOG nor the state-level Electricity Acts foresee for DSOs to elaborate a network development plan. The annual 10-year network development plan of the two Austrian electricity TSOs do not elaborate on the distribution network. For further references see question 11.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The rates for the provision of distribution services are determined by E-Control through legal ordinance. The terms for the provision of distribution services are authorised by E-Control through individual administrative decisions.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

There is no obligation to obtain a licence for wholesale electricity traders. Foreign electricity traders do not have to establish a company or branch in Austria to be able to commence electricity trading. However, if no branch or company has been established, a national process agent has to be notified to E-Control. Both direct trading, based on bespoke electricity sale-purchase agreements (over-the-counter (OTC) trading) and power exchange trading are available. In order to be able to trade electricity on the Austrian wholesale market, the electricity trader has to either establish its own balancing group or join an already existing balancing group. Typically, non-domestic electricity traders usually choose to establish their own balancing group.

The state-level Electricity Acts provide various regulations on electricity traders. The WElWG provides that electricity traders delivering power to final customers are obliged to notify the commencement of their trading activities to the state government and that they have to inform the authority in their business seat. ElWOG provides several provisions on electricity traders and other retailers that supply final customers. Electricity traders, for example, have to transmit certain data (including price data) to the regulatory authority for the purposes of market monitoring (tariff calculator, REMIT).

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Section 80 ElWOG obliges suppliers to prepare general terms and conditions for the supply of customers, whose demand is not metered by a load profile meter. The general terms and conditions and any amendments are subject to approval by the regulatory authority.

The ElWOG also contains rules regarding the transparency of the retail price. The energy price, as a component of the electricity price (others are the grid tariff and taxes) has to be disclosed separately in general terms and conditions, contracts, invoices and material directed to customers (sections 80 and 81 ElWOG). The network operator is obliged to forward the consumption data to the consumer at any time on the request of the consumer and, in the case of prior consent of the consumer, to a third party (for example, another energy supply company). This service must be provided by the network operator without additional charges. As of September 2013, consumers have to receive monthly information about their consumption if it is measured by smart meters (section 81a ElWOG).

Furthermore, as of 2011, consumers have the right to make monthly payments. In the case of breach of contract by the consumer, network operators are allowed to cut the consumer's network connection, provided that the network operator has considered the specific debt collection requirements as set out in section 82, paragraph 3 of the ElWOG.

Traders and other suppliers supplying end consumers in Austria are also obliged to disclose in the annual electricity invoice the shares of all the primary energy carriers in the energy sources mix that the trader used in the preceding year ('power labelling' – ElWOG sections 78 and 79). Furthermore, consumers have the right to change supplier at any time. Such change must be effected by the operator within three weeks.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

There is no mandatory determination of rates for sales of wholesale power.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Apart from the public service obligations provided by the ElWOG (see question 1), the implementing legislation of each state imposes public service obligations on companies acting in the electricity sector. The WElWG, for example, determines, inter alia, that system operators have to perform in accordance with public service regulations and must not discriminate against final customers.

Section 77 of the ElWOG and the implementing legislation of the states contain a universal service obligation.

Traders and other suppliers who provide household customers with electricity have to act as a 'supplier of last resort'. The companies concerned have to supply household customers and small-scale enterprises on their request, on the basis of their relevant general terms and conditions and a general tariff, which has to be published by the relevant company. The implementing legislation of the states shall provide detailed rules on the reasonability of the universal service. Therefore, for example, section 66 of the TEG states that the general tariff for supply of last resort has to be oriented at the tariff for supply of household customers of the relevant company concerned. However, the supplier of last resort may terminate the contract for good cause or suspend its

contractual obligations in the case of major and constant violations of the contract.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The regulatory authority with respect to the electricity sector is E-Control, a public law institution comprising the following bodies: managing board, regulatory commission and supervisory board. The responsibilities and tasks are shared between these bodies.

The federal Minister of Science, Research and Economy is the highest authority in electricity matters at a federal level. The federal state governments are responsible for the monitoring of compliance with legal and organisational unbundling rules in the electricity sector (section 88 of the ElWOG).

The European Market Infrastructure Regulation (Regulation (EU) No. 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties (CCPs) and trade repositories (TRs) – EMIR) entered into force on 16 August 2012. With respect to derivatives trading, the Austrian Financial Market Authority is the competent national authority also with respect to energy derivatives.

23 Scope of authority

What is the scope of each regulator's authority?

The managing board of E-Control is competent for all tasks that are assigned to the authority as far as they are not in the competence of the regulatory commission of E-Control. The competencies of the latter are listed in section 12 of the E-ControlG. The regulatory commission of E-Control has the right to issue both individual administrative decisions (section 12, paragraph 1 of the E-ControlG) and ordinances (section 12, paragraph 2 of the E-ControlG). The Regulatory Commission of E-Control is also in charge of the approval of general terms and conditions of network operators and the determination of tariffs for system use. Furthermore, the Commission is competent in disputes between market players and disputes involving the settlement of imbalances.

The supervisory and control tasks of E-Control are, inter alia, the monitoring of compliance with competition rules and the drawing up and publishing of comparisons of electricity prices. If E-Control detects any infringements of competition rules, it may take adequate countermeasures. Other regulatory tasks comprise, for example, proposals for market arrangements or technical and organisational rules for operators and users of networks. Additionally, E-Control has a duty to furnish opinions concerning the market and competition situation in the electricity area. The Regulation (EU) No. 1227/2011 (REMIT) came into force on 28 December 2011. Since then the national regulatory authorities are required to monitor and investigate potential infringements of REMIT. REMIT prohibits insider trading and attempted or actual market manipulation in the wholesale energy markets. By September 2013, amendments of ElWOG introduced administrative and criminal penalties for breaches of REMIT in Austria. In addition, market participants that are obliged to publish inside information in accordance with article 4 of Regulation (EU) No. 1227/2011 are required to inform E-Control simultaneously. According to section 10a ElWOG, they are required to inform E-Control of the published information together with the internet address where disclosures are made as well as the time of publication.

The federal Minister of Science, Research and Economy does not act as a regulatory authority. However, the minister has the right to be informed by E-Control of all regulatory activities performed by the managing board and regulatory commission.

The state governments act as regulatory authorities in terms of monitoring compliance with legal and organisational unbundling rules.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

E-Control is a public law institution which, in principle, acts fully independently of the state and its governmental bodies (section 5, paragraph 2, of the E-ControlG). For instance, the federal Minister of Science, Research and Economy must not give instructions to E-Control (however, there are some exemptions from this general rule; see section 5, paragraph 4 of the E-ControlG).

E-Control comprises three bodies: the managing board, the regulatory commission and the supervisory board. The managing board consists of two managing directors who are both appointed by the federal Minister of Science, Research and Economy. The term of office of the managing directors is five years and is renewable once. The regulatory commission of E-Control consists of five members who are appointed by the federal government. Section 10 of the E-ControlG stipulates that one member must be a judge. The term of office of all five members of the regulatory commission is five years and is renewable once. The supervisory board of E-Control consists of four members who are appointed by the federal government. The term of office is five years and is renewable. Apart from specific exemptions (see above), all members of E-Control must not be bound to any instructions in discharging their functions.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Generally, decisions of the managing board and the regulatory commission of E-Control can be appealed to the federal administrative court.

Additionally, some decisions of the E-Control Commission in connection with its competence to resolve disputes can be referred to the competent court of law, which will render the decision of the E-Control Commission ineffective (compare section 12, paragraph 4 of the E-ControlG) by making a new decision.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Mergers, acquisition of assets or ownership interest of 25 per cent or more, as well as other forms of change in control in undertakings, are subject to pre-merger notification to the Federal Competition Authority (BWB), if the companies involved realised certain turnover thresholds (see question 27 for more detail).

The notification is initially assessed by the BWB and the federal cartel attorney, who represents the public interest in competition matters (Phase I). If the planned transaction gives rise to competition concern the BWB and the federal cartel attorney (the official parties) may request an in-depth investigation (Phase II) by the Cartel Court.

The obligation to notify merger activities to the European Commission, if they fall under the EC Merger Regulation, remains unaffected by the Cartel Act 2005.

Additionally, E-Control, inter alia, has to ensure the regulation of the electricity sector in Austria; this includes the supervision of competition between the market players and system operators in the electricity sector, especially regarding the equal treatment of all market players, which also comprises the monitoring of merger activities in the electricity sector. There is close cooperation between the BWB and E-Control with respect to this matter.

Further, if a non-EU/EEA citizen intents to acquire 25 per cent or more of the voting rights or other material influence of an Austrian energy utility, a licence under section 25a or the External Trade Act may have to be obtained prior to the acquisition.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The BWB must be notified of a concentration if, in the last business year before the transaction, the undertakings concerned (for example, the buyer and the target company and their respective groups of companies) meet the following turnover thresholds:

- a combined turnover exceeding €300 million worldwide;
- a combined turnover exceeding €30 million in Austria; or
- at least two of the undertakings concerned each achieved a worldwide turnover exceeding €5 million.

However, even if these turnover thresholds are met, the concentration is exempt from notification if only one of the undertakings concerned achieved a turnover exceeding €5 million in Austria, whereas the combined worldwide turnover of the other undertakings concerned did not exceed €30 million.

After the notification of a concentration, the BWB and the federal cartel attorney have four weeks to assess the concentration and – in the event of competition concern – request an in-depth investigation of the case before the Cartel Court. If the concentration does not give rise to competition concern, the BWB will confirm to the notifying party that no move for an in-depth investigation was made and that the undertakings concerned may complete the transaction (clearance communication).

In the case of a request, Phase II takes a further five months within which the concentration will be assessed in-depth by the Cartel Court. The Cartel Court will prohibit a concentration if it creates or strengthens a dominant position. A dominant position is deemed to exist if an undertaking:

- is subject to marginal or no competition;
- has a superior market position in relation to its competitors, taking into account its financial strength, its relations to other undertakings and its access to suppliers and customers; or
- is in such a superior position with respect to its customers or suppliers that such parties are dependent on their business relationship with the dominant undertaking as an economic necessity.

Even if a dominant position is created or strengthened, the Cartel Court may authorise the concentration if:

- the concentration is also likely to result in an improvement of competitive conditions that outweighs the negative effects of the market dominance; or
- the concentration is necessary for the preservation or improvement of the international competitiveness of the undertakings concerned and is justified for reasons of national economy.

A review of merger activities at the Cartel Court does not affect the competencies of E-Control, which can be heard at the Cartel Court if the reviewed merger activities affect the Austrian energy sector. E-Control can issue orders to a market player in the electricity sector who has failed to uphold certain stipulations. If the party in question does not meet the deadline set out in such orders, E-Control may render an administrative decision to restore the legal status. E-Control can also issue any orders to uphold the legal interests of market players needed to restore and ensure the legal status in the electricity sector.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The Law on Unfair Competition (UWG) sets out principles in order to ensure fair competition in Austria. Alleged violations of these principles may be filed with the courts in commercial matters.

The BWB may investigate (upon a complaint of another market participant or ex officio) anticompetitive practices (including abuses of market dominance). The investigative powers of the BWB include requests for information as well as on-the-spot investigations at the company's premises. Furthermore, the BWB can investigate entire industry sectors. After its investigation the BWB may apply to the Cartel Court and request the Cartel Court to establish or remedy the anticompetitive practice (including imposing fines). Furthermore, the Cartel Court can also decide on alleged anticompetitive practice upon the request of the federal cartel attorney, the regulators (including E-Control) or companies having a legal or economic interest in a decision by the Cartel Court.

Additionally, each market player in the energy sector may file complaints with E-Control if disputes with other market players arise. In such cases E-Control may try to achieve a settlement that is acceptable to both parties within six weeks. This procedure is conducted on a voluntary basis only.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

The UWG and the Cartel Act 2005 apply to any anticompetitive (manipulative) behaviour in the Austrian market. The various principles set out in these acts determine basic principles such as, inter alia, that no party may resort, in the course of business, to competitive practices that are contrary to public policy. There are no sector-specific criteria for the energy sector under Austrian or EC competition law and therefore the general provisions (in particular, the prohibition of an abuse of a dominant position) apply.

In connection with the prevention of anticompetitive conduct, especially in the electricity sector, the provisions of the ElWOG granting access to systems under special terms and conditions and at regulated charges for system use are of special importance, as these provisions shall prevent abuse of significant market power in the electricity sector and are, in practice, a more efficient tool than enforcement of the competition rules.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The commercial courts may issue cease-and-desist orders or impose payment of damages, including damages for loss of profits, on a market player conducting anticompetitive practices.

The Cartel Court can issue orders to make companies refrain from anticompetitive conduct (especially from the abuse of a dominant position) and impose fines on the companies involved (up to 10 per cent of the company's total annual turnover).

Notwithstanding the jurisdiction of the Cartel Court and the commercial courts, fines may be imposed on companies performing anticompetitive practices in the energy sector (profiteering).

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Generally, the ElWOG does not distinguish between foreign and domestic companies in the strict sense. Therefore no special requirements or limitations are imposed on foreign companies in the electricity sector. However, the ElWOG sets out a specific certification procedure for TSOs that are controlled by persons from third countries (section 35 of the ElWOG). Therefore, it is most likely that the transfer of control over a TSO to persons from third countries may require prior approval by E-Control.

Furthermore, on a constitutional level, it is set out that at least 51 per cent of the shares of certain listed Austrian electricity companies, among them AEIC (see question 2), have to remain state-owned. According to the Austrian Foreign Trade Act, the acquisition of shares in energy supply companies by non-EU-based persons or companies has to be approved by the Minister of the Economy (unless the acquired shares do not exceed 25 per cent of the share capital).

The acquisition of more than 25 per cent of the voting rights or the acquisition of material influence (eg, conclusion of syndicate agreements on at least 25 per cent of the voting rights) of Austrian energy

Update and trends

At present, Austria and Germany constitute a single electricity market. That means that there is no formal matching of traded power market flows with cross-border capacity and no congestion management on the Austrian-German interconnector (IC). However, on 23 September 2015 ACER issued an Opinion stating that the Austrian-German IC has to be considered 'usually and structurally' congested pursuant to article 2(2) Regulation (EC) No 714/2009. The Opinion further includes the request to introduce a coordinated capacity allocation procedure (CCAP) on the Austrian–German border. The implementation of ACER's request for a CCAP on the IC would mean a split of the current single market Austrian–German electricity market into two (market split). Notably, the CCAP is requested despite missing evidence that the IC is lacking sufficient capacities to accommodate physical flows. The Austrian NRA (E-Control) and TSO have even proven by submitting appropriate expert opinions that there is no (usual and structural) physical congestion on the IC. However, according to ACER an IC is considered to be congested not only in the event of physical congestion, but also when international trades on this IC cause physical flows over physically congested network elements somewhere else in the network (eg, in Poland or the Czech Republic). ACER's overly broad interpretation of 'congestion' clearly goes beyond the legal definition of congestion set forth in Regulation (EC) No. 714/2009 and was therefore appealed by the Austrian NRA (E-Control) and various other stakeholders. The appeals have been rejected owing to the lack of legally binding nature of the ACER Opinion. Although the ACER Opinion is legally non-binding, the envisaged market split has already been taken into consideration in the European TSO's proposal for defining the Capacity Calculation Regions (CCRs) in accordance with article 15 CACM Regulation. It is expected that the TSO proposal on CCR will be approved by ACER in November 2016. However, it can be debated whether the CCR approval would trigger any obligation of the TSOs to introduce a CCAP on the IC. In fact, the CCR approval merely relates to capacity calculation mechanism, whereas amendments to the current bidding zone configuration (by introducing CCAP on the IC) is subject to a bidding zone review procedure in accordance with article 32 CACM Regulation. In a nutshell, TSOs will most probably not be allowed to introduce CCAP on the IC, as long as the bidding zone configuration was not amended in accordance with article 32 CACM Regulation. However, it remains to be seen whether TSOs refrain from a CCAP on the IC in order to avoid injunction reliefs and damage claims of Austrian market players.

utilities by a non-EU/EEA legal or natural person is subject to prior licensing by the Minister for Science, Research and Economy under section 25a of the External Trade Act. A licence may be granted if the acquisition does not endanger public security and order or other public interests.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Neither the ElWOG nor the state-level Electricity Acts contain explicit provisions on the construction and operation of interconnectors (ie, transmission lines that cross or span a border between member states and that connect the national transmission systems of the member states). Thus, the general provisions on the construction and operation of transmission networks apply in the territory of Austria (see question 9).

Furthermore, to the European Commission's TEN-E Regulation as well as its amendment (see question 11) Austria enacted the Energy Infrastructure Act 2016 on 23 February 2016. The TEN-E regulation provides for procedural simplifications for a number of interconnectors that have been identified as PCIs. The Energy Infrastructure Act 2016 stipulates national complementary provisions in response to the TEN-E Regulation for projects that are not required to conduct an environmental impact assessment (EIA). It foresees that the competent energy-infrastructure authority is the federal Minister of Science, Research and Economy. Further, it specifies rules on the pre-application procedure as well as on the coordination of the statutory permit granting procedure.

For those PCIs that are required to undertake an EIA the provisions of the Environmental Impact Assessment Act 2000 are applicable (compare section 30). Such projects are high-voltage overhead lines with a minimum nominal voltage of 220kV and a length amounting to a minimum of 15km; in defined areas that are worthy of protection the nominal voltage is reduced to a minimum of 110kV and the minimum length is 20km (compare Annex I para 16 lit a and b). In cross-border projects the total length of the project (ie, not only the part in the territory of Austria) is to be considered. Finally, section 10 of the Environmental Impact Assessment Act 2000 grants participation rights to neighbouring countries in case the project has substantial influence on the country's environment.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Capacity expansion and tariff classification in connection with cross-border transport of electricity are regulated by EC Regulation No. 714/2009. According to the ElWOG, the legislature of the nine states shall provide for adequate sanctions for the infringement of the EC Regulation on cross-border electricity trading.

Additionally, under the provisions of the ElWOG, electricity supply contracts involving the purchase of electricity from third countries that are producing parts of their electricity requirement in plants that are not state-of-the-art or that threaten the life or health of persons, animals or plants, are not permissible. Also, the purchase of electric energy from third-party countries or from countries failing to furnish

schönherr

Bernd Rajal **b.rajal@schoenherr.eu**
Azra Dizdarevic **a.dizdarevic@schoenherr.eu**

Schottenring 19
1010 Vienna
Austria

Tel: +43 1 534 37 0
Fax: +43 1 534 37 66 100
www.schoenherr.eu

proof of the proper disposal of waste resulting from the generation of electric energy, or failing to draw up a plan for the disposal of waste resulting from future generation, is not permissible.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Under the provisions of the ElWOG, integrated electricity companies have to ensure that their activities as operators of transmission systems are independent of those as producers and distributors (see question 2). Additionally, integrated electricity companies have to keep separate accounts, within separate accounting systems, for their activities in generation and trade, transmission and distribution of electricity. Generally, the ElWOG obliges network operators to refrain from granting cross-subsidies.

Transactions with a performance, consideration or other economic advantage exceeding the value of €1 million with affiliated companies, according to section 7, paragraph 1, sub paragraph 72 ElWOG, have to be listed separately in notes to the annual accounts.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

If a company fails to comply with its obligation of listing transactions in notes to the annual accounts as described above, the respective district government may impose a fine of up to €50,000 on the company.

Bulgaria

Siyana Veleva and Gergana Shinikova
Kinkin & Partners

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

As an EU member state since 2007, Bulgarian legislation in the energy sector is for the most part harmonised with EU law. The Energy Directive packages were implemented into Bulgarian legislation in 2006. The third liberalisation package is currently being implemented.

The legislative framework in the sector is structured by laws and ordinances adopted by Bulgarian authorities and in the direct implementation of EU legislation.

The liberalisation process of the sector started with the Energy Act, adopted in December 2003. The Energy Act regulates the production of energy production of heat, gas usage, the interconnection procedures and the energy and gas markets.

The main objectives of the Energy Act are ensuring the needs of society for electricity and heating power and natural gas are met, ensuring energy development and energy reliability in the country through the effective use of energy and energy resources, the creation and development of a competitive and financially stable energy market, encouraging the combined production of electric and heating power, developing infrastructure for transmission and distribution of natural gas, and the transmission of oil or oil products within and through the country .

The common European practice for the promotion of energy from renewable and alternative energy sources led to the adoption in 2007 of the Law on the Renewable and Alternative Sources of Energy and Biofuels, which was replaced in 2011 by the Law on Energy from Renewable Sources.

The energy sector is also governed by ordinances, which in particular cases develop the general provisions of the Energy Act.

The sector is also regulated by rules adopted by the Energy and Water Regulatory Commission (EWRC), for example, Rules for Energy Trading, Rules for Grid Access, etc.

State policy on the energy sector is made by parliament and by the Council of Ministers. The Minister of Energy sets the energy policy of the country.

The general framework of Bulgarian energy policy are provided in the energy strategy adopted by parliament in June 2011, which will be in force until 2020. The energy strategy is a strategic document that reflects the political view of Bulgaria on the development of the sector. The priorities of the strategy are guaranteeing the safety of energy supplies, reaching the renewable energy targets, an increase in energy efficiency, and the development of a competitive energy market and policy directed to ensuring the needs and preserving the interests of consumers. Renewable energy sector policy is implemented through the national action plan for energy, produced by the renewables sector, adopted by Bulgaria's Council of Ministers and in force until 2020.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Electricity generation in Bulgaria comes from numerous sources, including nuclear power, thermal, hydro and renewable and alternative energy resources. Most conventional power plants are owned by the National Electricity Company, which is 100 per cent government-owned. Some of the thermal power plants are the property of independent firms. All renewable energy facilities, including small hydro power plants (up to 10MW), are 100 per cent owned by independent investors.

Since the liberalisation of the energy market, the governance of the transmission network is subject to a licensing procedure. Only one licence can be issued for the entire country. The transmission network is 100 per cent owned by the Bulgarian Electricity System Operator (TSO).

The distribution network on the regulated market is the property of three licensed energy distribution companies (CEZ, EVN and Energo Pro), organised on a territorial basis.

Since July 2007 the Bulgarian energy market has been totally liberalised, which means that every consumer has a right to choose the distribution companies and has a right to free and equal grid access. A market model has been introduced based on the regulated access of third parties to the grid, where the transactions are based on direct bilateral contracts between the producers or traders and the end consumers.

The production, sale and supply of electricity are activities subject to a licensing procedure.

The non-regulated part of the market is based on free negotiated prices between traders, consumers and independent producers trading the energy remaining after execution of obligations to the public supplier to satisfy the needs of clients in the regulated segment. Trading is based on bilateral contracts in a free negotiated process on the market organised by the TSO.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The initiation of the construction process is regulated by general Bulgarian civil law and in particular the Law on Spatial Zoning Planning and the ordinance for its application. The construction process is regulated by the general construction law, but also by a specific ordinance for construction requests for energy sites.

The entering into operation of facilities is subject to general legislation, but also to the provisions of the Energy Act. A licence issued by the EWRC for the production of electricity is required for the construction and operation of energy facilities with an installed capacity of over 5MW.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The Minister of Energy determines the required new electricity generating capacity for connection to the transmission grid and promulgates the inventory of required new capacity in the State Gazette. The EWRC approves and publishes on its website the predicted electricity capacity that may be allocated for connection to the transmission grid for electricity production from renewable sources. The TSO provides the expansion, reconstruction and the modernisation of the transmission grid together with the long-term prognoses and plans

for the development of the electricity sector. The TSO, on the basis of the assessments, forecasts and plans, and prepares a national electric energy budget and a list of the sources, including new generating capacities and intersystem electricity power lines, required to meet national demand, and submits the said drafts to the Minister of Energy. The electricity transmission network operator is obligated as a priority to connect all power plants generating electricity using high-efficiency combined generation, with an installed capacity up to 10MW, to the transmission grid.

Interconnection policies are also subject to strategic acts in the energy sector, as approved by the Bulgarian authorities, such as the Energy Strategy Until 2020, the national action plan for energy from renewables.

Pursuant to the national report on reaching the targets for consumption of energy from renewables, the particular procedure for interconnection does not apply to renewables facilities.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

In 2007 to promote alternative energy sources the Law on Renewable and Alternative Sources of Energy and Biofuels was adopted. The Law implemented the provisions of Directive 2001/77EC of the European Parliament and the Council on the promotion the production and consumption of electricity generated using renewable energy sources in the internal electricity market and of Directive 2003/30/EC of the European Parliament and of the Council on the promotion of the use of biofuels and other renewable fuels for transport. The national target, according to the admission contract and Directive 2001/77EC, was an 11 per cent share of electricity, produced from the renewables sector.

The Law applied only to the renewable and alternative energy investors and led to significant development of the renewable sector in Bulgaria. Pursuant to the Renewable Energy Sources Directive 2009/28/EC Bulgaria set a national target of 16 per cent share for renewables in Bulgaria.

In 2011 the Law was repealed and the Law on Energy from Renewable Sources was adopted. Although the law promotes renewables, it also limits new renewable energy projects. The main promotional measures are fixed long-term contracts for selling the energy produced, feed-in tariffs and guaranteed grid access. According to the second national report on the development of the renewable sector, Bulgaria has reached the 16 per cent target of final consumption of energy produced from renewable sources.

For certification of the quantities of produced energy, the Law on Renewable and Alternative Sources of Energy and Biofuels introduced 'green certificates', issued by the EWRC. Following its repeal, pursuant to the new law, green certificates are issued by the Sustainable Energy Development Agency.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

In the past few years, Bulgaria has joined the international effort to reduce climate change and has adopted a package of measures in the energy sector. The implementation of renewables and energy-efficiency measures are a priority of energy policy in Bulgaria and correspond to EU policy in the sector.

Conventional energy generation is one of the biggest sources of greenhouse gas emissions in Bulgaria (about 70 per cent). To limit greenhouse gas emissions the Bulgarian government adopted a policy to encourage new investments in the renewables sector. The Bulgarian government's main goal is the simultaneous application of improvement in energy efficiency and the mechanism for promoting the use of renewable technologies.

Another measure to lower greenhouse gas emissions is the obligation to refurbish existing conventional electricity installations.

The National Trust Eco Fund manages funds provided under debt-for-nature and debt-for-environment swaps, as well as funds provided under other types of agreements with international, foreign or Bulgarian sources aimed at environmental protection in Bulgaria. The fund also manages funds for energy efficiency.

The fund contributes to the implementation of the Bulgarian government's environmental policies and the enforcement.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The national action plan for energy, adopted by Bulgaria's Council of Ministers in June 2011 and in force until 2020 provides development of electricity storage systems. The government has adopted a Decree for setting national rules for eligibility of expenditure under the programmes financed by the European structural and investment funds, for the programming period 2014–2020, effective from 8 August 2016. According to the Decree, the European Regional Development Fund shall support investment priorities, related to improvement of energy efficiency and security of supply through development of intelligent systems (smart grids) for distribution, storage and transmission of energy through the integration of distributed generation from renewable sources.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Bulgaria has one nuclear power plant – NPP Kozloduy. Some of the power plant's capacity was reduced as part of Bulgaria's negotiation process for joining the EU. The Bulgarian government has been planning to build a seventh nuclear reactor. The preliminary projects have been designed and ecological and cross-border permission procedures are under way.

The Bulgarian government has planned to build a second nuclear power plant – NPP Belene – and preliminary research has been conducted. However, the construction of this plant has been the subject of huge political and social debate. In 2013 a national referendum on the topic was organised. Owing to the misleading phrasing of the question, the results were unclear. The project for a second national nuclear power plant is currently on hold by a decision of parliament.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

The construction and operation of a transmission network requires the approval of the competent state authorities. For construction of transmission network approved investment designs and construction permission are required. The Minister of Investment Project Development issues ordinances about the contents of the investment designs. The EWRC issues, amends, supplements, stops, terminates and withdraws licences for transmission of electricity. Pursuant to the Energy Act, only one licence shall be issued in the country for the transmission of electricity. The Bulgarian operator of transmission networks is the electricity system operator.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

The EWRC issues the rules for access to the electricity transmission network. The operator must connect any energy sites with a generating capacity of more than 5MW of an electricity producer located within the relevant area, for which the producer has concluded a contract for connection at a connection price. Another condition for connection to the transmission grid is also the fulfilment of the producer's obligations under the contract and the regulatory requirements for connection to the electricity transmission grid. The producer must have built energy sites within the boundaries of its own property, or property where it has the right to build. The producer must conclude a contract for grid access with the operator.

The electricity transmission grid operator must connect the energy facilities of an electricity distribution network operator in relation to the expansion, reconstruction and modernisation of the electricity distribution grid and connect them to electricity producers and customers.

The transmission grid operator must connect any facilities of an electricity customer located within the relevant area that has electrical fixtures built within the bounds of its property, in conformance with technical standards and safe operating requirements and satisfying the conditions for connection to the transmission grid, and it has concluded a written contract for connection with the electricity transmission grid operator for a set connection price.

The operator must provide equal access to the transmission network by observing the requirements for quality and providing network consumers with the information they need for efficient access. The operator may refuse access if it would lead to a breach of the technical requirements and security of the networks or to the deterioration of the conditions for supply to other consumers and users.

End-users use the electric transmission grid under publicly known general conditions, also approved by the EWRC and these enter into force without any explicit written acceptance.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Bulgarian legislation does not provide any incentives for expansion of the transmission grid. The development and the expansion of the grid is obligation of the operator, as provided by the Energy Act and by its licence. The expansion and modernisation of the grid is part of the operator's investment programme, approved by the EWRC.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The EWRC determines the rates for the provision of transmission services. The EWRC decides the fees for access to the transmission grid. The methods of price regulation, the rules for price calculation setting and modification, and the procedures for provision of information, for the submission of proposals on prices and for the endorsement of prices are established by ordinances on electricity adopted by the EWRC.

The operator of the transmission grid determines the general terms for connection to the transmission grid, approved by the EWRC.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The TSO is responsible for ensuring the reliability of the transmission grid.

The National Dispatching Centre (NDC) of the TSO acts as an operator of the national power transmission system and performs the functions of centralised real-time dispatching, control and supervision of the electrical power system (EPS). Its main task is to guarantee the reliable and efficient operation of the Bulgarian EPS and its synchronous operation with the partners in the Union for the Co-ordination of Transmission of Electricity. The NDC also organises the electricity market. There are four regional dispatching centres covering the territory of Bulgaria.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

The construction of a distribution network must be permitted by the competent state authorities and requires approved investment designs and construction permission. The construction of a distribution network must be compatible with environmental laws and building permits can only be issued only to the operator of the distribution grid.

A licence issued by the EWRC is required to operate a distribution network. Pursuant to the Energy Act only one licence shall be issued for each territory for the distribution of electricity. The territory for a licence to distribute electricity shall include no less than 150,000 clients connected to the distribution network, and at least one administrative region.

A licence shall be issued to a person registered according to the Commercial Act who:

- has technical and financial capacities, material and human resources and an organisational structure to fulfil the requirements for carrying out the activity under the licence;
- presents proof that the energy sites through which the activity under the licence will be implemented meet the normative requirements for safe operation and for protection of the environment; and
- has genuine rights to the energy sites through which he or she will implement the activity if they are to be constructed. As previously mentioned, there are three companies operating distribution networks (CEZ, EVN and Energo Pro) in Bulgaria.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

The relevant operator of the distribution grid must provide equal access to the network. Rules for access to distribution networks are similar to those governing access to transmission network. The operators of distribution networks must publish general conditions for access to their grid, approved by the EWRC. Contracts are signed between the distribution operator on the one hand and customers connected to the distribution network in general terms or the producer of electrical energy connected to the distribution network. There are, however, significant differences in the procedures for access to the energy distribution grid for producers of electricity from renewable energy sources, from conventional energy sources and for cogeneration sites. The conditions for connection to the relevant distribution grid of a producer of electricity from renewable sources are different. The relevant operator may reasonably refuse to wholly or partially connect the energy sites of a producer or of a customer to the distribution grid by objective, non-discriminatory and published criteria (such as public service imperatives or technical reasons relating to the security and the safety of the network).

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

The distribution of electric power and operation with distribution networks is carried out by distribution network operators. According to the Energy Act, the network operators shall provide the expansion, reconstruction and modernisation of the electric distribution network and of auxiliary networks, in compliance with the requirements of environment protection, energy efficiency and effective use of power.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The operator of distribution grid determines general terms for connection, approved by the EWRC. Customers or producer of electricity who want to connect to a distribution grid have to submit an application form to the respective operator. The operator shall issue an opinion on the request, which specify the conditions for accession to its network. The operator of distribution grid offers connection agreement, who contains all technical requirements and conditions for access to the grid of the particular energy sites of producer of electricity or of customer. The fees for access to the distribution network cover management of the network and relate to the overall management and administration of the electricity system, including dispatching costs, energy sites, commercial metering devices, reporting as well as all other administrative expenses for the upkeep of the distribution network. The EWRC sets the fees for access to the distribution network.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

All energy market activities are subject to a licence procedure before the EWRC. For the sale of electrical power the EWRC issues three types of licence – for trading electricity, for wholesale suppliers and for public supply.

The wholesale supplier ensures electricity supply to public suppliers and customers, connected to the transmission grid. Only one licence shall be issued on the territory of the country for wholesale supply of electricity (the title holder of the licence is the National Electric Company).

Public suppliers ensure the supply to electricity customers connected to the distribution grid for the territory for which the suppliers' licence is issued. In Bulgaria the three aforementioned companies possess licences for public supply (CEZ, EVN and Energo Pro).

Electricity traders are persons who meet the financial criteria to trade in electricity and who are entitled to purchase electricity from producers and supply privileged customers. Any juridical person, if fully compliant with all laws, can request a licence for energy trading.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Contracts for energy sales are concluded at regulated prices, at freely negotiated prices or at prices determined by methods approved by the EWRC and pursuant to long-term contracts for electricity purchase. The EWRC is entitled to regulate the prices in the energy sector.

The EWRC regulates the prices at which the producers sell electricity to the wholesale supplier; the wholesale supplier sells electricity to the transmission and distribution grid operators to cover their technological expenses for transfers; the wholesale supplier sells electricity to the public suppliers; and the public suppliers sell to end customers connected to the low-voltage distribution grid. The EWRC approves the feed-in tariff for purchasing electricity from the renewables sector. The feed-in tariff is applicable for selling electricity to both wholesale and public suppliers. The EWRC determines a separate feed-in tariff for energy produced from combined energy sites.

On exercising its obligations for pricing regulation, the EWRC may apply different methods of regulation to determine the indexes of effectiveness of energy sites and indexes for comparison, and basic criteria. The EWRC applies two general methods for price regulation – the rate on the return of capital and a limit on prices or income.

The EWRC approves different components of the regulated energy price (different from the feed-in tariff). Some of the components are energy in Bulgarian levs for megawatt/hour; price for capacity or availability for megawatt/megawatt per hour; other components are independent from the structure of expenses.

According to the amendments to the Energy from Renewable Sources Act (ERSA), in force from 24 July 2015, the public provider and respectively the end-providers shall buy the generated electricity from renewable sources at the feed-in tariff price for the quantities of specific net electricity production (the average annual electricity production of 1kW of installed capacity according to the decision of the EWRC for determining the feed-in tariff after deduction of expenses for own needs) based on which feed-in tariffs are fixed in the respective decisions of the EWRC. The generated quantities of electricity exceeding that amount are bought at a price in excess of the balancing market. At the same time the producers of electricity from renewable sources shall also sell the electricity produced by them at a freely negotiated price or on the balancing market.

The amendment to the ERSA provides new rules for determining the feed-in tariff for energy sites that were built with funds from the national or EU support scheme and in respect of which aid applications were submitted before the ERSA's entry into force (ie, before 2011).

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

The EWRC regulates the price at which producers sell electricity to the wholesale and public suppliers and the feed-in-tariff price at which the producers from the renewables sector sell electricity to suppliers. The EWRC determines the wholesale price of power, which are market-based; provide a balance between the interests of the energy enterprises and clients; and prevent non-admission or restriction or violation of the competition on the energy market. The EWRC regulates prices by applying various methods of regulation, including setting efficiency parameters for energy companies, comparability parameters between such companies and setting basis criteria. The EWRC may determine price components reflecting: the cost structure; or items such as time of the day, seasonal and other tariff structures related to costs.

The prices are determined for one regulatory period (one year), but can be modified by an additional decision of the EWRC, but no more often than once a calendar quarter and under specific conditions.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Pursuant to the Energy Act, services of public interest are: transmission and transformation of electricity; distribution of electricity and electricity supply. The energy enterprises must carry out their activity in the interests of the public and of individual clients and in compliance with the requirements of the Energy Act and of the other laws, ensuring reliability of supply (including protection of the sites, which are critical infrastructure in the energy sector), uninterrupted supply and quality; the efficient use of energy; and the protection of the environment, the life, health and property of citizens.

The end-suppliers shall provide a supply of electrical power for household and non-household end-clients connected to low-tension distribution networks in the relevant licensed territory where these clients are not provided by another supplier. The EWRC publishes annual recommendations on the compliance of the sale prices by wholesale suppliers and end suppliers with public service obligations, including the protection of energy services consumers. Energy companies providing public services shall determine special procedures for providing information to vulnerable customers regarding the consumption and suspension of their electricity supply.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The EWRC is the main regulatory body of the energy sector. It was established by a Decree of the Council of Ministers of the Republic of Bulgaria No. 181 of 10 September 1999.

Some regulatory rights are also provided for the Minister of Energy.

23 Scope of authority

What is the scope of each regulator's authority?

The main prerogatives of the EWRC in regulating the activities in the energy sector are to:

- issue, amend, supplement, suspend, terminate and withdraw licences for the generation of electricity, for the transmission of electricity, for the distribution of electricity, for electricity trade, for the organisation of the electricity market, for the public provision of electricity and for the public supply of electricity;
- adopt and publishes basic guidelines concerning its activities;
- approve the common terms and conditions of the contracts in the energy sector;
- exercise control in the cases envisaged in the Energy Act;
- carry out price regulation of electricity;
- define the rules for trading electricity and the network technical rules at the request of the energy companies and control their compliance;

- adopt and control the application of methodology for the price formation of balancing energy;
- define the rules for access to the electricity transmission and distribution grids;
- hold tenders for the construction of new capacities for electricity generation in the various territories;
- consider the energy companies' requests for compensation of stranded costs and make decisions on the amount of the justified stranded costs and the approach for their compensation;
- issue monthly certificates to the producers of electric energy for the origin of the goods of electric energy, produced at highly effective combined production of electric and heat energy (in force from 1 January 2016);
- request power and gas network operators to evaluate the energy efficiency potential of the respective networks by reduction of the technological expenses; the assessment shall include analysis of the transfer, distribution, management of loads, the efficient functioning of the networks and the possibilities of connecting installations for decentralised energy production;
- based on the aforementioned evaluation the EWRC requires the networks to include in their development plans concrete measures and investments for improving energy efficiency in the gas and electricity networks and a timetable for their implementation;
- issue green certificates to electricity generators using renewable energy sources and such generating combined electric and heat power;
- define the permitted dimensions of technological costs of generating, transmitting and distributing electricity in accordance with a methodology adopted by the EWRC;
- define the electricity generation availability and technical parameters, in accordance with which every generator may conclude transactions with eligible customers, electricity traders and other generators;
- give its consent to the division, separation, merger by acquisition or merger by the formation of new energy companies licence holders;
- permit sales of property used for licensed activities and other transactions that lead or may lead to a break of supply as a result of the indebtedness of the energy company; and
- consider customer complaints against licensees or of licensees against licensees related to the performance of the licensed activity.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The EWRC is an independent specialised government body with a head office in Sofia. The chairmen and the members of the EWRC are elected and released by the National Assembly. The EWRC is an administrative body composed of nine members, including a chairman. The mandate of the members of the EWRC is five years, provided that a maximum of two complete mandate periods is allowed. The EWRC is completely independent of the regulated business.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

EWRC resolutions and decisions are defined as administrative acts. Its decisions can be appealed before the Supreme Administrative Court. The grounds and the procedure for appeal of the EWRC's decisions are set out in the Administrative Procedure Code.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The EWRC permits the transformation of a licensee through the merger, consolidation, division or separation of a sole-owner trade company through a change of legal form, if the person who is to carry out the licensing activity after the transformation meets the requirements for issuance of a licence. The EWRC amends or terminates the existing licence or issues a new licence, depending on the particular case. When permission for transformation is required from the Commission for the Protection of Competition (CPC) under the Law on Protection of Competition, the EWRC notifies the CPC. Such permission from the CPC is required after the transformation if the new company has a concentration on the market. The CPC shall permit the concentration as long as it does not lead to the creation or strengthening of a dominant position that would significantly impede effective competition on the energy market. The CPC, however, will permit a concentration that, even if it creates or strengthens a dominant position, aims to modernise the energy business activity, improve the energy market structure, or better satisfy the interests of customers and as a whole the positive effect outweighs the negative impact on competition on the respective market.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The rules and criteria applicable to merger control are the same as in any other sector. The merger rules are set out in the Commerce Act. However, before making a decision to transform under the Commerce Act the licensee must have permission for the transformation from the EWRC. The EWRC's external experts shall issue an opinion on whether the transformation is likely to upset the balance between the interests of the energy company and customers and other objectives and principles in the Energy Act. The EWRC also may require statements from the CPC about the request for transformation in compliance with competition rules. The licensee may not complete the transaction before the EWRC has given its approval.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The CPC may investigate, order the cessation of and sanction anticompetitive practices in any economic sector, including the electricity sector. The EWRC, as a specialised body, must uphold competition on the energy market. If the EWRC finds that the licensee has infringed competition rules, it notifies the CPC. If the CPC establishes that the licensee has harmed competition, it can impose administrative penal ties as provided in the Energy Act. If the CPC establishes systematic violation of the competition rules, it may revoke the licence.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

The general provisions of the Competition Act are applicable for anticompetitive or manipulative practices in the energy sector. The act provides for detailed regulation of prohibited agreements, decisions and concerted practices.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

On the request of the EWRC, the regulator must petition the court to nullify any transactions performed between licensees without the EWRC's approval.

Additionally, the CPC is the competent authority to preclude or remedy anticompetitive or manipulative practices. The CPC could start the case on its own decision, or could be approached by any interested party. The EWRC has the right to expand the scope of the proceedings. The CPC's decision may be appealed before the Supreme Administrative Court.

Update and trends

The EU tendency to decrease the stimulation of development of new RES projects is also valid for Bulgarian energy market. The possibility of obtaining feed-in tariffs for new RES projects (terminated in 2015) is still likely.

Legislation in the energy sector remained relatively stable in 2016 with a likelihood of remaining so in 2017.

In 2016 the pressure of RES facilities, already in operation for legislation amendments, which to allow them to reach investment levels provided before the 2015 legislative change, is active.

In 2016, energy-efficiency projects are on the rise, especially in the public sector, and likely to increase in 2017.

As of 24 July 2015 a new structure was set up, the Security of Electricity System Fund (the Fund). The Fund will collect money for the purpose of covering expenditure incurred by the NEC arising from its obligation to buy electricity produced from renewable sources and from cogeneration, determined by decisions issued by the EWRC, including those from previous regulatory periods.

The Fund has two basic sources:

- contributions amounting to 5 per cent of the monthly sales of all producers of electricity in the country and of all traders in electricity imported and sold in the country; and
- revenue from auctions for the sale of quotas of carbon used for the development of renewable energy sources. With the amendments to the Energy Act, the NEC and end suppliers are obliged to buy electricity from thermal power plants only if they have received a monthly certificate of origin for high-efficiency energy. The quantity of electricity from this type of production is determined by the energy regulator. Beyond this amount the producers are able to sell electricity for a freely negotiated price or on the balancing market.

In an amendment to the Energy Act of 2016, 5 per cent monthly contributions are included also the grid operator (5 per cent of incomes from access and transportation of electricity), gas system operators and gas storage operators. In addition, the government has accepted several changes concerning measures for the protection of consumers of energy services. There are new requirements regarding the content of contracts concluded with customers of energy services. The contract has to include conditions for its termination by the customer and the possibility of such termination without additional payment or loss of other customer rights. The amendments to the Energy Act also establish more obligations on energy utilities when concluding contracts with customers to give more information about their services. Finally, a public council has been established for the protection of customers' interests, as a consultative body for solving problems that are under the special jurisdiction of the Minister of Energy.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

In general, Bulgarian legislation does not provide any special requirements or limitations on acquisitions of interest in the electricity sector by foreign companies and especially from companies originating from an EU member state. However, for some energy sector activities, such as licences in a competition procedure, pursuant to the Energy Act, if the winner is a company registered in a non-EU country, it must register as a company under the Bulgarian Commerce Act before obtaining a licence.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

The operator of transmission networks has the right to construct and operate interconnectors. The operator shall be a person, registered according to the Commercial Act, who shall have a licence and a certificate issued by EWRC as required by the Bulgarian legislation. The procedure for construction and operation interconnectors is related to the implementation of statutory conditions, which include supplying with authorisation issued by the Ministry of Regional Development and Public Works for elaboration of development plans. The development plans shall be coordinated with other government institutions, such as the Ministry of Environment and Water, Ministry of Culture, Road Infrastructure Agency, etc.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

As an EU member state Bulgaria has enacted the Energy Act to implement EU rules and applies all EU regulation regarding access to interconnectors and cross-border transactions.

The access to interconnectors is determined with Access Rules developed and adopted by the Bulgarian TSO and the Electricity System Operator of the other country (member state), which shall be coordinated with EWRC and the relevant regulatory energy authority.

Additionally, the Energy Act provides the possibility for producers, traders, wholesale and public suppliers of electricity and clients to enter into agreements for electricity with entities from other member states:

- when they obtain an acknowledged right for free trade with electricity for their customers;
- in case of reciprocity in legislation of other member state; and
- in cases where the clients can ensure the electricity meets certain quality indexes with transparent and fair prices.

All cross-border transaction are based on bilateral agreements.

KINKIN & PARTNERS law firm

Siyana Veleva **veleva@kinkin-law.com**
Gergana Shinikova **shinikova@kinkin-law.com**

8 Tsar Shishman Street
Sofia 1000
Bulgaria

Tel: +359 2 980 34 75, +359 889 236 879
www.kinkin-law.com

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The Energy Act provides a strict division between activities in the energy sector. The act provides that all energy facilities keep separate accounts for different activities in the energy sector, for activities subject to a licence procedure, for all their branches and for activities under regulated and freely negotiated prices. Cross-financing between related persons is forbidden in the energy sector. All electricity utilities are obliged to present annual financial reports to the EWRC, which includes information for non-allowance of cross-financing between affiliates in the proposal for approval of electricity prices for the next regulatory period.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

The EWRC may review the annual financial reports of utility companies. The licensee must also present, at the request of the CPC or European Commission, documentation and technical and economic information, including information on agreements entered into.

The CPC also has the right to review information regarding non-competitive procedures.

Canada

Richard J King
Osler, Hoskin & Harcourt LLP

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Unlike most other states, the electricity markets in Canada are regulated primarily at the provincial (as opposed to federal) level. Consequently, the legal and policy framework in each province is different. The electricity sectors in a number of provinces are dominated by government-owned vertically integrated utilities, including British Columbia, Saskatchewan, Manitoba, Quebec, New Brunswick, and Newfoundland. Alberta and Ontario both moved to competitive, open-access markets (at both the wholesale and retail level) in 2001. Ontario quickly reversed its move to a fully 'deregulated' market due to price volatility in the summer and autumn of 2001. As a result, Ontario has what is now referred to as a 'hybrid market' with a real-time spot price for power, but most new generation procured by way of long-term government-backed contracts.

The remainder of the responses will focus on the Ontario market.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Under the Ontario Energy Board Act 1998 (OEB Act), all electricity generators, transmitters, distributors and retailers must be licensed by the Ontario Energy Board (OEB). The licence binds the generator, transmitter, distributor and retailer to a variety of regulatory Codes promulgated by the OEB (eg, Distribution System Code, Transmission System Code, Retail Settlement Code, Affiliate Relationships Code, etc) that contain a number of detailed regulatory requirements not set out in statute or regulation.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

In Ontario, electricity generation facilities may require a number of approvals and permits from multiple levels of government. The key approvals are granted by the provincial Ministry of Environment and Climate Change (MOECC) and the OEB, and include the following:

- Ontario's Environmental Assessment Act may apply to the construction of new generation facilities. The most significant new generation projects require a full environmental assessment (eg, hydro-electric facility that is 200MW or greater in capacity, energy from waste facilities that burn greater than 100 tonnes per day of municipal waste), while others may require a less onerous environmental screening (eg, gas-fired generators 5MW or greater, cogeneration plants 25MW or greater, etc).
- An Environmental Compliance Approval from the MOECC is required for any new generating plant with air or noise emissions or discharges to water.
- The OEB regulates the utility infrastructure connecting generating facilities to the electric grid or natural gas distribution system. A leave-to-construct order from the OEB is required for most electricity transmission lines connecting a generating facility to the transmission grid, and for most gas distribution lines to supply gas to a generating facility.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Under Ontario's Electricity Act 1998 (Electricity Act) transmitters and distributors are obligated to connect new generation facilities. The generators are responsible for connection costs, in order to keep existing customers harmless. Generators connecting to the transmission system, and those greater than 10MW connecting to a distribution system, must complete the Connection Assessment and Approval process administered by the Independent Electricity System Operator (IESO). A System Impact Assessment (SIA) is a study conducted by the IESO to assess the impact of the connection proposal on the integrated power system. The SIA is conducted with input from the affected transmitter and in consultation with the connection applicant. At the time of connection, a standard-form Connection Agreement is entered into by the generator and the applicable transmitter. The standard form Connection Agreement was developed by the OEB and forms part of the Transmission System Code issued by the OEB.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The 2003 election of the Liberal Party government in Ontario marked the beginning of a policy to close the province's five coal-fired power plants, and bring on new renewable power generation. Initially, new renewable generation was brought online via requests for proposal (RFPs) and standard-offer programmes, with generators entering into 20-year guaranteed price contracts with the Ontario Power Authority (OPA). In April 2009, the Green Energy Act was passed, establishing a feed-in tariff (FIT) regime for new renewable generation. The GEA also sought to facilitate the approval of new large-scale wind and solar projects by consolidating a number of statutory approvals into a single Renewable Energy Approval (under the Environmental Protection Act). The government's policy goals have largely been met – the last of Ontario's coal-fired power plants was closed in 2014, and (by way of example) installed wind capacity in the province increased from 15MW in 2003 to over 4,300MW today. More recently, the large-scale FIT programme was concluded, and the government has reverted to procuring new renewable generation via RFP.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

In November 2015, Ontario released a Climate Change Strategy, which set greenhouse gas emission targets of 15 per cent (from 1990 emissions levels) by 2020, 37 per cent by 2030, and 80 per cent by 2050. Unlike other jurisdictions, which have opted for a carbon tax, the

Ontario government has opted to partner with the cap-and-trade system under the Western Climate Initiative, which is currently supported by California and Quebec.

In 2016, the Ontario Legislature released its five-year Climate Change Action Plan, together with its Climate Change Mitigation and Low-carbon Economy Act (Climate Change Act). The Climate Change Act comes into effect on 1 January 2017, and will require 'large final emitters' to meet their allocated annual emission caps through emissions reductions or the purchase of verified emission allowances (ie, reductions by others). Given that Ontario has largely decarbonised its electricity generation sector, the largest impact of the Climate Change Act will be felt in the industrial and transportation sectors. The Climate Change Act places the compliance obligation on upstream fuel suppliers (ie, natural gas distributors, propane and gasoline fuel providers, etc), increasing the costs of these fuels.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Under the OEB Act, the Minister has the ability to issue Directives to the IESO, and has done so in respect of energy storage – directing the IESO to procure 50MW of energy storage by way of competitive RFP.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Ontario has a long history with nuclear power, building three large nuclear generating stations in the 1970s and 1980s, which supplied 60 per cent of Ontario's electricity in 2015. The three facilities were constructed by the former Ontario Hydro (the provincially owned vertically-integrated utility which existed prior to deregulation in 2001). At the time of deregulation, all three plants were transferred to Ontario Power Generation Inc (OPG) one of the successor corporations to the former Ontario Hydro, vested with all of the former utility's generation assets. In 2001, one of the three nuclear plants (the Bruce Nuclear Generating Station) was leased by OPG to a private consortium comprised today of several entities including TransCanada Corporation. The issue of what to do about Ontario's now-ageing nuclear fleet has been extensively debated in recent years. At present, the Bruce Nuclear Plant and the Darlington Nuclear Plant are involved in extensive refurbishment plans. The Pickering Nuclear Facility is expected to continue operations through to 2024.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

In the OEB Act, 'transmission lines' are defined as powerlines operating above 50kV. The authorisations required to construct transmission networks depend on the voltage and length of the transmission lines.

The Environmental Assessment Act sets out the following requirements for when an environmental assessment is required for transmission assets:

- transmission lines less than 115kV, and transmission lines greater than or equal to 115kV and 2km or less in length require no environmental assessment;
- transmission lines at 115kV and greater than 2km in length; or transmission lines between 115kV and 500kV and between 2km and 50km in length are subject to an screening-type class environmental assessment; and,
- transmission lines between 115kV and 500kV and 50km or greater in length; or transmission lines 500kV or more and greater than 2km in length require a full, individual environmental assessment.

In addition to the provincial environmental assessment process, transmission lines greater than 2km in length require a leave-to-construct from the OEB. A transmission licence issued by the OEB is also required in order to own and operate a transmission system in Ontario. The licence binds the licensed transmitter to key Codes issued by the OEB (eg, the Transmission System Code, which sets out detailed rules regarding connection procedures and cost assessment). Connecting new transmission facilities to the existing transmission network also triggers the jurisdiction of the IESO, which will carry out a system impact assessment, aimed at understanding the reliability implications associated with connecting the new assets to the existing system.

Hydro One Networks Inc (the successor corporation of Ontario Hydro that was transferred Ontario Hydro's high-voltage transmission system) owns over 90 per cent of the province's transmission system.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Ontario's transmission system is open access. Under section 26 of the Electricity Act, a transmitter or distributor must provide generators, retailers, market participants and consumers with non-discriminatory access to its transmission or distribution systems in Ontario in accordance with its licence.

Connecting generators or new loads must contact the transmission system owner and the IESO, in order to determine the most appropriate connection point, and to have the IESO carry out a system impact assessment (SIA) in accordance with the IESO's Market Rules. The SIA will determine whether system upgrades to the existing system are required in order to accommodate the new connection. The new transmission customer must keep the transmission utility's ratepayers harmless, meaning that: (i) newly connecting generators must cover the full costs of connecting to the transmission system; and (ii) newly connecting load customers must cover any costs over and above revenues associated with the new customer's transmission charges over a specified time period (which varies depending upon type of customer). The costs noted in (ii) are recouped from connecting customers by way of an upfront capital contribution.

The rules regarding the rights and obligations of the transmitters and new transmission customers are set out in the OEB's TSC, which contain the two key standard-form agreements governing the relationship – a Connection Cost Recovery Agreement (during the development and construction of the connecting facilities), and a Connection Agreement (during operations).

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The IESO is responsible for long-term system planning, pursuant to the terms of the Electricity Act. The IESO's Long-Term Energy Plan addresses areas of needed transmission system enhancement. In addition, under section 96.1 of the Ontario Energy Board Act 1998, the provincial Cabinet can make an order declaring that a new, expanded or reinforced transmission line is needed as a 'priority' project. In this way, the provincial Cabinet itself can direct that certain transmission projects be expedited on a variety of policy grounds. For instance, the province recently identified the connection of remote First Nation communities in northwestern Ontario as a priority project. Even if a transmission line is declared by Cabinet to be a priority project, OEB approval to build the line is still required. However, in these cases the OEB must accept that the project is needed (part of the legal test for approval).

Although Hydro One Networks owns well over 90 per cent of the provincial transmission system, the province and the OEB has shown interest in having other entities participate in the transmission sector. In March 2011, the Minister of Energy requested the OEB to create a process for selecting the most qualified and cost-effective transmission company to develop a 400km transmission line project that reinforced the connection between northeast and northwest Ontario. The OEB's designation process ultimately selected a partnership between NextEra, Enbridge and Borealis.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

Ontario's five transmitters have their annual revenue requirement set by the OEB. These revenue requirements are then summed together, (along with the transmitters' load forecasts) in order to set a single set of uniform transmission rates that apply province-wide. In this way, the 'pancaking' of transmission charges is avoided, and the costs of transmission are socialised across provincial transmission customers (comprised of electricity distribution utilities and large industrial customers connected directly to the high-voltage transmission system).

The OEB must set rates that are 'just and reasonable', in accordance with their rate-setting jurisdiction under the Ontario Energy Board Act, 1998. To date, transmission rates have been set on a traditional cost-of-service methodology using a forward test year(s), although the OEB is encouraging transmitters to move to multi-year incentive rate-making methodologies, as mandated for the electricity distribution utilities.

There are four transmission charges in Ontario, the levying of which depends upon which assets a transmission customer uses. All customers pay the network transmission charge (to recover costs associated with the operation of the 'backbone' of the transmission system used by all customers). Customers utilising radial assets that benefit one or a small group of customers must also pay a line connection charge, and customers utilising the transmitters' transformer station (as opposed to self-owned transformers) must also pay a transformation charge. The transmitters' assets are categorised into these three asset pools, and the associated cost base of each asset pool underpins that charge. Exporters of power must pay an export transmission service charge.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Compliance with reliability standards are enforceable in Ontario by the IESO, through its Market Rules. In 2007, the North American Electric Reliability Corporation (NERC) was tasked with developing and enforcing reliability standards in the United States. NERC and the Northeast Power Coordinating Council (NPCC) are both recognised as the reliability standards authority by the Ontario government. The IESO implements compliance monitoring and enforcement processes in Ontario for NERC reliability standards and the NPCC criteria. The IESO's Market Assessment and Compliance Division is responsible for reliability standards enforcement.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

As noted above, a distribution system in Ontario's legislative framework is limited to electricity distribution assets that operate at 50kV or less. The regulatory authorisations required to construct distribution systems is less onerous than for transmission facilities – ie, no environmental assessment is required, and no leave-to-construct approval is required from the OEB.

A distribution licence issued by the OEB is required to own or operate a transmission system. The distribution licence binds the distributor to the myriad specific regulatory Codes issues by the OEB – the most important of which are the Distribution System Code, the Retail Settlement Code, the Standard Supply Service Code, and the Conservation and Demand Management Code.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

As noted above, section 26 of the Electricity Act provides for non-discriminatory access for anyone seeking to connect to the distribution system. Every distributor will have its connection procedures set out in its Conditions of Service, which are required to conform to the provisions of the OEB's Distribution System Code. These Conditions of Service are public documents, filed with the OEB. The process typically begins with the submission of a connection application, made to the local distribution company (LDC). As with connections to the transmission system described above, the principle of newly connecting customers keeping existing ratepayers harmless also applies to distribution system connections.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

No. Distribution system expansion is done on an economic basis (ie, a newly connecting load customers must pay a capital contribution in the event that the distribution revenues generated over a certain time horizon do not cover the distributors' connection costs).

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The OEB sets electricity distribution rates on a 'just and reasonable' standard, pursuant to the OEB's rate-setting jurisdiction under the Ontario Energy Board Act 1998. LDCs in Ontario file rate applications in accordance with Filing Requirements published by the OEB. There are essentially three rate-setting options available to LDCs: a five-year price cap incentive-ratemaking (IR) methodology; an annual IR index methodology; or a custom IR methodology. Most LDCs apply using the first of these three methodologies, which involves setting rates for the test year on a traditional cost-of-service basis, and then having resultant rates adjusted in years two through five via a formula that incorporates inflation, a productivity factor and a stretch factor.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Ontario differentiates between selling into the wholesale and retail markets. Every OEB-issued generator licence authorises a generator to sell electricity into the IESO-administered market (ie, the wholesale market) or directly to another person other than a consumer. Every OEB-issued distribution licence authorises a distributor to sell electricity to end-use customers, in order to fulfil its obligations as 'default supplier' of power (ie, customers choosing not to purchase electricity from an electricity retailer) under section 29 of the Electricity Act.

Competitive electricity retailers selling to both large-volume and low-volume consumers must obtain an electricity retailer licence from the OEB. Selling to low-volume consumers (those consuming less than 150,000kWh annually) attracts more onerous regulatory requirements than does selling solely to large-volume consumers.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Yes. Commencing in 2005, the OEB established a Regulated Price Plan (RPP) in order to remove the volatility of electricity pricing, and reflect the amount paid to generators. The RPP sets tiered pricing for customers using both time-of-use and non-time-of-use meters. The price threshold (the amount of electricity that is charged at the lower price) is changed every six months for residential consumers, as follows: 1 May to 31 October = 600kWh per month; and November 1 to April 30 = 1,000kWh per month. Prices are also adjusted every six months, based on updated forecasts and any accumulated differences between the amount that consumers paid for electricity and the amount paid to generators in the previous period.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

The wholesale price of power (ie, the Hourly Ontario Energy Price (HOEP) is determined by bids and offers submitted to the IESO. It is important to note that while an HOEP is produced, the 2001 price freeze to consumers and resultant movement away from a competitive market in Ontario has resulted in new generation being procured by the OPA (since merged with the IESO) under long-term contract. These generators still bid their power into the wholesale market, but are 'topped up' by the IESO pursuant to the terms of their contract. The cost of the contracted power (and other cost items, such as conservation initiatives) are captured and passed onto consumers in a global adjustment charge (GA). Thus, HOEP only accounts for a (relatively small) portion of the overall commodity cost to consumers – with the GA accounting for an increasingly large share.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The LDCs in Ontario play a major role in terms of conservation and demand management programme delivery. The overall provincial conservation policy and provincial targets are established by the Ministry of Energy (based on the advice of the OPA, now IESO). The Minister has used his directive powers under the Ontario Energy Board Act, 1998 to issue directives to: (i) the IESO, directing them to work with LDCs to establish province-wide conservation programmes for residential, commercial and industrial customers; and (ii) the OEB, directing them to put conditions in each distributor's licence mandating certain reductions. As a result, the IESO has the planning and reporting functions for province-wide conservation programmes, and provides LDCs with marketing, technical and training support for such programmes. The IESO also provides evaluation, measurement and verification of programme results. The LDCs are responsible for programme delivery, pursuant to the provincially established targets, and in accordance with conservation and demand management plans submitted to the OEB.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The Ontario Ministry of Energy sets provincial policy for the electricity sector. The Ontario Ministry of Environment and Climate Change sets policy for climate change in the province. The IESO and the OEB also have a role to play in policy. With respect to the IESO, its responsibility for long-term system planning means that at a practical level it may work closely with government to determine provincial policy. At a minimum, the planning work of the IESO will play an important role in informing Ministerial policy. For more granular issues within its area of expertise, the OEB establishes policy – sometimes at the prompting or direction of the Minister of Energy, other times on its own.

23 Scope of authority

What is the scope of each regulator's authority?

The scope of the OEB's authority is set out primarily in the OEB Act, and to a lesser extent in the Electricity Act. It has broad jurisdiction in Ontario's electricity sector, including authority to set electricity rates, approve the construction of major electricity transmission lines, license all participants in the sector, and ensure compliance with licence conditions, the OEB's Codes and the terms of any decision or order.

The scope of the IESO is set out in the Electricity Act, and is fourfold:

- managing and ensuring the reliability of the high-voltage grid;
- entering into long-term contracts for the supply of electricity;
- establishing the market price for power (ie, HOEP); and
- carrying out long-term planning for the electricity sector.

As noted above, the IESO also plays an important role in the planning and design of the province-wide conservation programmes.

Both the OEB and IESO have compliance and enforcement functions.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The precursor to the OEB (the Ontario Fuel Board) was established in 1954 for the purposes of regulating the natural gas sector in Ontario (ie, rates for sale and storage of gas, leave to construct gas pipelines, etc). The Ontario Energy Board Act 1960 created the OEB as a successor to the Ontario Fuel Board. In the mid-1970s, the legislation was amended, expanding the role of the OEB into the electricity – although at the time, its jurisdiction was limited to annual reviews of Ontario Hydro's rates. The mandate of the Board did not fully encompass the electricity sector until 1998, in anticipation of the move to a competitive wholesale and retail power market. At that time, the OEB's authority was expanded to include setting electricity distribution and transmission rates, licensing market participants, and approving large transmission projects. The OEB is an administrative tribunal, with its members appointed by provincial Cabinet. In recent years, the provincial government has sought to intervene more directly in the work of the OEB amending the OEB Act to give it directive-making powers as regards the OEB in a variety of substantive electricity policy areas (eg, conservation, licensing, etc).

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Pursuant to section 33 of the OEB Act, orders of the OEB may be appealed (as of right) to the Ontario Divisional Court. An appeal may only be made upon a question of law or jurisdiction.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The OEB has the statutory authority to review the sale or lease of (transmission or distribution) utility assets or a change in control of utility companies. All amalgamations by a transmitter or distributor are also reviewable by the OEB. An order granting leave to sell or lease utility assets, or to amalgamate, is required by the utility.

In addition, the OEB must be notified (and has discretion to review) any transactions between generators on the one hand and utilities on the other hand. Specifically, before a transmitter or distributor, or affiliate of a transmitter or distributor, acquires an interest in a generation facility in Ontario, constructs a generation facility in Ontario, or purchases shares of a corporation that owns a generation facility in Ontario, the OEB must be notified. Similarly, before a generator or affiliate of a generator acquires an interest in a transmission or distribution system in Ontario, constructs a transmission or distribution system in Ontario, or purchases shares of a corporation that owns a transmission or distribution system in Ontario, the OEB must be notified.

The above requirements are all set out in sections 80 through 86 of the OEB Act, and are referred to as the MAAD (mergers, acquisitions, amalgamations and divestitures) provisions.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The legal test on a MAAD application (see question 26) is a 'no harm' test. In other words, the applicants do not have to show that there is any benefit to the transaction, but must show that ratepayers will be no worse off after the transaction than they are at present. There is a large body of case law dealing with MAAD applications – since a provincial policy aimed at LDC consolidation has seen the number of LDCs drop from over 300 to approximately 75 today. Most transactions have attracted little scrutiny, but recent cases being brought forward have met with more interest, focusing largely on the longer term rate impacts associated with such transactions. Disposition of MAAD transactions typically takes a few months.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

There are two entities that play a key role in the prevention or prosecution of anticompetitive or manipulate practices in the electricity sector in Ontario: the IESO's Market Assessment and Compliance Division (MACD), which plays the main role in monitoring anomalous market behaviour/conduct; and the Market Surveillance Panel within the OEB, which relies heavily on the monitoring work of MACD. If the anomalous conduct amounts to a breach of the Market Rules, the IESO can initiate its own process against the market participant. The Electricity Act 1998 provides the MSP with the authority to carry out investigations of anomalous market conduct, and make the results of any investigation public. The OEB can then take compliance action against the market participant based on the MSP investigation.

Recently, the IESO Market Rules were amended to include a General Conduct Rule (GCR). Up to that point, the Market Rules contained fairly prescriptive provisions detailing the precise type of prohibited conduct. The GCR provides the IESO with much broader authority to pursue conduct that it considers anticompetitive. Under the GCR, market participants are prohibited from 'directly or indirectly' engaging or attempting to engage in conduct, 'alone or with another person, that they know, or ought reasonably to know:

- exploits the IESO-administered markets, including by, without limitation, exploiting any gap or defect in the Market Rules;
- circumvents any of the Market Rules;
- manipulates any of the IESO-administered markets, including by, without limitation, manipulating the determination of a settlement amount;
- undermines through any means the ability of the IESO to carry out its powers, duties or functions under the Electricity Act 1998 or the Market Rules; or
- interferes with the determination of a market price or dispatch outcome by competitive market forces.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

As noted above, prior to the establishment of the GCR, the IESO's Market Rules contained fairly prescriptive provisions setting out types of prohibited conduct in the power market. For instance, the market power provision in the Market Rules set out a series of objective criteria which, if met, resulted in a situation being deemed 'market power'. The enactment of the GCR introduced a discretionary standard to the determination of prohibited conduct.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

Both the IESO and the OEB have the authority.

The IESO plays an enforcement role for breaches of the Market Rules, which enables the IESO to impose financial penalties and other sanctions (eg, issuance of letters of non-compliance, trading suspension orders, termination orders, disconnection orders, etc). For alleged breaches of the GCR, market participants have the option to have the OEB determine whether a breach has occurred under the GCR.

In addition, a breach of the Market Rules is also a breach of an OEB licence condition, which can lead to the issuance of a compliance order, the levying of a financial penalty, or revocation of a licence.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

The federal Investment Canada Act (ICA) governs the acquisition of control of a Canadian business by a non-Canadian investor. Review is generally limited to direct acquisitions of control of large Canadian businesses by non-Canadians. Generally, if an acquisition is reviewable, a non-Canadian investor must obtain approval prior to closing the transaction. In a limited number of cases, an investment may be subject to a national security review if it is considered potentially injurious to national security, even where review thresholds are not met. The Minister of Industry has authority for the review and approval of investments. The initial review period is up to 45 calendar days. This period may be extended by the responsible Minister for an additional 30 days. A further extension may occur with the consent of the non-Canadian investor. For an acquisition to secure approval under the ICA it must be of 'net benefit to Canada'. To demonstrate net benefit, it is usually necessary for the non-Canadian investor to give undertakings to the Canadian government. These undertakings, in relation to the acquired business, may include maintaining certain levels of employment, Canadian management and a Canadian head office and making certain capital expenditures, for a period of at least three years.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

A proponent of an international power line can elect to proceed under provincial law (see questions dealing with the construction and operation of international power lines) or alternatively proceed under federal law. Specifically, a proponent can elect under section 58.23 of the National Energy Board Act (NEB Act) to have the provisions of the NEB Act, and not provincial laws, apply in respect of the international power line. Proceeding under federal law requires the issuance of a certificate under section 58.16 of the NEB Act to construct and operate the Canadian portion of the project.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

The export of electricity is a matter of federal jurisdiction. A person who seeks to export electricity to the United States must obtain either an export permit (or licence) from the National Energy Board (NEB). A permit application to the NEB must contain information about the exporter and US importer, the physical facilities over which the electricity will flow, any adverse effects resulting from the export, as well as estimates about the maximum quantity power to be exported (firm and interruptible). Scheduling the flow of power across the international power lines remains a provincial matter. In Ontario, interjurisdictional trading rules are part of the IESO's Market Rules.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The OEB's Affiliates Relationships Code (ARC) governs transactions between electric utilities and their affiliates. The main objectives of

the ARC provisions are twofold: protection of ratepayers (by requiring utilities to pay no more than fair market value for goods and services from an affiliate, and not to sell any goods or services to an affiliate for anything less than fair market value) and protection of competition (eg, prohibiting access to a utility's customer list by its affiliate, showing no preference in marketing materials for an affiliate, etc).

Electricity distribution and transmission utilities in Ontario are bound by the terms of the ARC via their OEB-issued licence.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

Any violation of the ARC is a breach of the utility's licence, and subject to the OEB's compliance and enforcement measures.

OSLER

Richard J King **rking@osler.com**

100 King Street West
1 First Canadian Place
Suite 6200, PO Box 50
Toronto ON M5X 1B8
Canada

Tel: +1 416 362 2111
Fax: +1 416 862 6666
www.osler.com

Chile

José Manuel Larraín, David Acuña and Ignacio Pera

Larraín Rencoret Urzúa Abogados

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

The government's energy policy encourages supply, security, efficiency and sustainability.

Through Decree-Law (DFL) No. 1 enacted in 1982 (General Law of Electricity Services(LGSE)), which privatised the electricity industry, Chile introduced competition into the generation sector, separating the generation of electricity, its transmission and its distribution.

A minimum global cost operation model was established, and generation companies were encouraged to enter freely into supply contracts with non-regulated customers and distribution companies (regulated customers).

For more than 34 years, the Chilean electricity industry has been steadily improving through additional regulations and rules. A key factor in the long-term stability of the sector has been the consistency in market rules and the enforcement of such rules throughout periods of rationing and changes to the macroeconomic and political environment. In recent years, as a result of its successful economic development, Chile has introduced several legal changes to the industry, which have brought new investment trends in the electricity generation field and major possibilities for the transmission sector, especially in the interconnection of the two major systems (see question 4).

The highlight of this transition was the effect generated by Law No. 20,805 which came into force in January 2015. The Law perfected the supply tender process for regulated clients mechanism: On the last bidding process (August 2016), a historical average price of US$47,59 per MWh was reached, a far cry from the indifference shown by power generator companies in 2013. Law No. 20,805 introduces flexibility, which has allowed the new players into the market, thus enriching competition.

As a first critical step, changes to the LGSE, made official in March 2004 through Law No. 19,940, modified several aspects of the market affecting all generators by introducing new elements, especially those applicable to non-conventional renewable energy (NCRE). It is noteworthy that small generators can now participate in the electricity market. Moreover, there is a partial or total exemption from transmission charges for small-scale NCRE. In accordance with the changes introduced in 2004, as of 2010, the nodal price consists of the price resulting from distribution company tenders, as established by Law No. 20,018 and its associated regulations.

Likewise, Law No. 20,257, better known as the Non-Conventional Renewable Energy Law, came into force on 1 April 2008, obliging all electricity companies selling energy to final customers to ensure that a given percentage of the energy they sell comes from NCRE. A power company unable to comply with this obligation must pay a penalty for each MWh short of this requirement. In this regard, Law No. 20,257 was amended by Law No. 20,698 enacted on 22 October 2013. With the enactment of this law, the objective of the Chilean state is that by 2025, 20 per cent of the energy produced will come from NCRE sources. The entire legal and regulatory boost has not been in vain because between 2010 (Law No. 20.257) and 2012, the built capacity of NCRE almost doubled, from 320MW to 650MW. This trend has continued in recent years, with the number of projects in operation growing from 881MW in 2012 to 1,117MW in 2013 and 2,097MW in 2014, according to information provided by the Ministry of Energy.

Additionally, on 14 October 2013, Law No. 20,701 was published in the Official Gazette, amending the LGSE, in order to simplify the procedure for obtaining an electricity concession. This new framework was a response to the need for speeding up the procedure and time frame necessary to obtain an electricity concession, providing more certainty to the system. In summary:

- the process to obtain a provisional electricity concession has been simplified and the time frame adjusted;
- there is more clarity as to the observations and challenges that those against the project can make;
- the notification process was amended; a simplified and faster judiciary procedure has been introduced;
- the request of an electricity concession can be divided;
- the process of valuing land or real estate has been amended; and
- potential conflicts between different concessions have been amended.

Through this new legal framework, the procedure to obtain an electricity concession will be more expeditious, which in turn will boost investment and competitiveness in the electricity market and will assist in diversifying the energy matrix favouring NCRE.

On 7 February 2014 Law No. 20,726 amended the LGSE, in order to study and promote the interconnection between the Central Interconnected System (SIC) and the Norte Grande Interconnected System (SING). In the past year, the government stated that this interconnection option between SING and SIC would allow the transfer of surpluses produced in the northern part of Chile to its central zones. Based on this new legislation, the government has approved the 2014–2015 Expansion Plan, which provides for the interconnection of the two main electricity grids of the country – SING and SIC; the SING stretches from Arica to Antofagasta and the SIC from Taltal (near Antofagasta) to Chiloé Island. The interconnection is expected to reduce electricity system costs by US$1.1 billion. The interconnection of the two systems is also expected to boost the development of renewable energies and to reduce uncertainty for operators while increasing competition.

In this context, with the application of Law No. 20,726 Chilean government determined that the project of the company Transmisora Eléctrica del Norte (TEN), which is owned by E-CL, was the best option for interconnecting the SIC and SING electricity grids. This project contemplates a new line of 2x00kV between substations Nueva Cardones (in the northern part of SIC) located in III Región de Atacama and Los Changos (south of Mejillones) located in II Región de Antofagasta. In July 2015 TEN started construction of its first tower, setting up the SIC–SING interconnection and was the first of 1,400 structures of a transmission line of 500kV with an approximate length of 600 kilometres.

As we stated last year, the SIC–SING interconnection into a single trunk transmission line is a complex task from technical, legal and social points of view. This is evedent from the fact that the power transmission line awarded by the Ministry of Energy to Interchile in 2012, which will link Polpaico with Cardones substation, caused conflict between the company and municipalities becasue of its design and environmental impact. Finally, in December 2015 and after 21 months of various formalities before the Servicio de Evaluación Ambiental (a governmental agency in charge of environmental approval of electricity projects), the Polpaico-Cardones project was approved. The

construction of 753 kilometres of power lines, contemplated in this project, began in the first trimester of 2016.

Another substantial legal change this year was Law No. 20,928, published on 22 June 2016. Such law sets out the equity mechanism on electricity price rates. The primary purpose of the Law are to reduce electricity price rates on Chilean *comunas* (a geographical and political division of territory similar to a township or a county) where power generator companies that produce more than 200MW of installed capacity are currently operating. A discount will be applied at the regulated price rates by a factor previously determined by law, allowing a final discount up to 50 per cent. The cost of such premium will be 'charged' to electricity price rates of residents of communes that are not considered by the Law as intensive generators. This subsidy will be among communes with different energy generation capacity and policymakers estimate that in the case of Metropolitan Region – the most populated in the country – will suffer an increase in its electricity price rates between 0.1 per cent and 7.3 per cent. Another purpose of the Law is to set up a mechanism of residential price rate equity, by regulating distribution companies. Such companies will be able to charge a maximum rate of 10 per cent higher than the average price rate of their residential customers. It is a cross-subsidy among regulated clients – if the electricity bill of a customer of company X rises the electricity bill of a customer of company Y will be reduced – according to the formula provided in the law. Chilean government estimates that this law will increase electricity price rates in the Metropolitan Region of 7 per cent, subsidising consumers located in other regions of the country. Specialised consultants have indicated that the incomes of distribution companies will not be affected on the offer side, maintaining correct signs of prices necessary for efficient management.

The last major legal highlight in a busy 2016 is Law No. 20,936, which establishes new power transmission systems and creates an Independent Coordinating Body for the National Power System (the Amendment). This Law, published on 20 July 2016 and coming into force on 1 January 2017, introduced relevant changes to the current LGSE. Experts have indicated that this Law brings in changes in energy planning, transmission expansion, definition and location of tracings and in transmission compensation system issues. It also creates the denominated 'development poles' (DP) and contains one vital change: it creates the Independent Coordinator of the National Electricity System (CISEN), which will replace the Economic Charge Dispatch Centres (CDEC) of SING and SIC. Under the Amendment, the Chilean government aims to contribute to the timely expansion of the electricity transmission network. This new law heightens the role of the government in the electricity sector, granting it greater capacity to execute electricity planning, expand the system and determine and manage the creation of land strips for the installation of new structures related to transmission lines.

Finally, as we noted last year, it is important to mention the project to reform an essential law and regulations that govern the hydropower industry in Chile, which is currently under discussion in Congress. The government is driving an amendment to the Water Code that could affect any new hydroelectric companies chosen to set up in the country. The motive of the pending bill would be to reduce water shortages, proposing a series of regulatory changes. Specifically, it proposes an increase in state control, which could affect the legal certainty necessary for the development of economic activities, and would seek to change the legal nature of existing water rights, undermining property rights. This reform aims to change the perpetuity of Water Use Rights (DAA). The reform provides that the use of the DAA will have a maximum duration of 30 years. This transforms the DAA in a simple administrative concession. In addition, the reform aims to create grounds for revocation causes, which could affect existing rights. On the other hand, the reform aims to increase the state's involvement. The Directorate General of Waters may exercise broad powers in implementing new features, which could have an effect on already acquired DAAs, and this may to some degree affect the property status. Consequently, the development of this discussion in Congress should be followed in detail.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

According to the National Energy Commission (CNE), Chile's power generation for June 2016 was 6,186GWh. It is the fifth-largest consumer of energy in South America. Power generation in the SIC during June 2016 reached a total of 4,538GWh, which were classified as 60 per cent thermoelectric, 27 per cent conventional hydroelectric and 13 per cent NCRE. In the SING, 1,648 GWh of electric power were generated, 95 per cent from thermoelectric plants and 5 per cent from NCRE. Together the systems reached a total of 6,186GWh, an increase of 2.9 per cent in comparison with June 2015. In summary, this was 10.7 per cent NCRE, 20.2 per cent hydroelectric and 69.2 per cent thermoelectric generation.

The Chilean electricity system can be described as comprising the following elements:

- an interconnected electricity system;
- generation or supply of electricity;
- transmission systems; and
- distribution systems.

An electricity system consists of a set of power plants, transmission lines, electrical substations and distribution lines, all interconnected, and enabling the generation, transmission and distribution of electricity. They are classified according to their size. Major systems are those with an installed generation capacity greater than or equal to 200MW, medium-sized systems are those with an installed capacity greater than 1.5MW and lower than 200MW, and small systems have an installed capacity equal to or less than 1.5MW.

According to the CNE's Monthly Energy Sector Report No 17, Chile's installed generation capacity as of June 2016 was 20,639MW. In this respect, Chile has four major electricity systems: 16,398 (79.5 per cent) corresponded to the SIC and 4,068MW (19.7 per cent) to the SING. The remaining 0.8 per cent was distributed to Easter Island, Los Lagos, Aysén and Magallanes electricity systems. According to the CNE, as of June 2016, 57.8 per cent of the country's total installed capacity is represented by thermoelectric generation followed by conventional hydroelectric power (29.1 per cent), while 13.1 per cent is NCRE.

The electricity market in Chile has been designed in such a way that investment and operation of the energy infrastructure are carried out by private operators, promoting economic efficiency through competitive markets in all the non-monopolistic segments. Thus, generation, transmission and distribution activities have been separated in the electricity market, each having a different regulatory environment.

The distribution and the transmission segments are both regulated and have service obligations and prices fixed in accordance with efficient cost standards. In the generation sector, a competitive system has been established based on marginal cost pricing (peak load pricing), whereby consumers pay one price for energy and one price for capacity (power) associated with peak demand hours.

The operation of the Chilean market for the interconnected electricity systems is characterised by a spot market, where the price of electricity represents the short-term marginal cost resulting from the instantaneous balance between supply and demand.

In Chile, there are only two electricity systems with an installed capacity greater than 200MW (SING and SIC), both operated by one of the two existing CDECs. As a result of the Amendment (see question 1), both CDECs (SING and SIC) will be replaced by a single coordinator: the above-mentioned CISEN. According to the first transitional article of the Amendment, the specific regulation of the CISEN regarding its duties and faculties will come into force on 1 July 2018. The new CISEN will have the same obligations and duties of currents CDECs: it will primarily be a technical and independent entity, with a board of five directors, each chosen by a special committee through a public procurement process. Its duties are the coordination of operations, determination of the marginal costs of electricity, assuring open access to the transmission systems, maintaining a global safety, and coordinating economic transactions between agents, determining the marginal cost of electricity and economic transfers among the organisations that it coordinates.

The wholesale electricity market comprises generation companies that trade energy and capacity between them, depending on the supply contracts they have entered into. Companies capable of generating more than the amount they have committed in contracts (surplus companies) sell to companies with a generation capacity below what they have contracted with their customers (deficit companies). The respective CDEC determines physical and economic transfers (sales and purchases) and – in the case of energy – valued on an hourly basis at the marginal cost resulting from the operation of the system during that hour. In the case of capacity, transfers are valued at their nodal price of capacity.

Contracts entered into between distribution companies on one side and non-regulated customers on the other do not form part of the spot market or the concept of the wholesale market described above.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

While no governmental authorisations need to be obtained in order to construct and operate generation facilities, power utilities usually obtain electricity concessions to acquire fundamental rights to protect their investment. A classic key right is the imposition of a right of way over land whose owners are reluctant to grant rights of way through voluntary agreements. These electric concessions, however, are only available for the construction and development of hydropower plants, substations and transmission lines. These rights of way are fundamental to allow the power company to secure transport of electricity to the national grid. Also, the Environmental Law, the Planning Law and the Municipality Law may demand that an authorisation is obtained when building a power station.

The Environmental Law (Law No. 19,300, as amended by Law No. 20,417, enforceable since 26 January 2010) establishes a regulatory framework applicable to projects with an environmental impact (article 10 of the Environmental Law and article 3 of its regulation create the projects that must follow the environmental impact assessment system, and among these projects the Environmental Law includes power plants with output capacity in excess of 3MW). These projects may force the developer to request and obtain an environmental approval resolution (RCA). In the event of infringement of the obligations established in the RCAs, the Environmental Superintendency may impose the following sanctions: verbal warning, fines of up to US$10 million, revocation of the approval or closure of the facilities. The new statute for the Environmental Impact Assessment System (SEIA) was published in the Official Gazette on 12 August 2013 (enforceable since 24 December 2013). This statute includes amendments to Law No. 20,417 and replaces Executive Decree 95-2001 by Executive Decree 40-2012 (amended by Executive Decree 63-2014), which contained the rules that applied to the SEIA. According to the information provided by SEIA, in June 2016, 18 energy projects were submitted to this institution, representing an investment of US$3,896 million. Of these, 11 projects are for electric power generation and seven projects are for electrical transmission. At the same month, 124 energy projects are awaiting the approval of their RCA. Of these, 75 per cent are projects related to electric power generation, and the remaining ones are mixed projects. Together they represent a total of US$26,866 million. Finally, in June 2016, an RCA of 10 energy projects were approved. Six projects are for electric power generation, with a total capacity of 462MW. These 10 projects represent a total investment of US$2,069 million.

The Planning Law regulates the administrative process required by law to build, including the relevant municipal permits and the technical requirements for construction. During the operation stage of a generation facility, the Municipality Law obliges, in general, the payment of a municipal tax (0.05 per cent), which is calculated against the capital of the company. Also, this Planning Law may oblige the developer to request and obtain a favourable report for construction from the regional office of the Agricultural and Livestock Service.

We do not refer to other permits that must be obtained in advance of developing a generation facility project, such as water rights or geothermal concessions to explore and exploit.

In the field of electricity generation projects under construction, it is notable that in July 2016 there were 26 power generation projects under construction in the SING. Together they represent a capacity of 2,227MW and according to the National Energy Commission, they are expected to begin operation between June 2016 and June 2018. Moreover, as of 5 July 2016, there were 33 power generation projects under construction in the SIC. These projects represent a capacity of 2,585MW and are to begin operation between June 2016 and October 2020.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Regulation varies depending on the transmission system involved. The Amendment defines the new electric power transmission system and will allow the strengthening of the power transmission systems from Arica (north) to Chiloe (south) thanks to the interconnection of the SING with the SIC. It also recognises cross-border interconnection systems with the creation of the concept of an international interconnection system which will fall under the CISEN's technical and economic management.

This new law provides four new types of transmission systems, by replacing:

- the main transmission system with a new national transmission system (NTS);
- the sub-transmission system with a new zonal transmission system (ZTS);
- the former additional transmission system with a new dedicated transmission system (DTS); and
- a new transmission system under the name of generation development poles (DP).

According to the Amendment, NTS and ZTS are subject to an open-access status but subject to a toll payment to the transmission company. There is no other restriction on the interconnection of generation to the transmission grid. In the case of DTS, the Amendment provides a significant change. DTS facilities' owners shall not refuse or deny the interconnection to any person interested when there is technical capacity available, and such person makes a prepayment or presents a guarantee, as agreed by the parties involved, before the CISEN. In this respect, the DTS original destination is not affected, but the unused capacity can always be used by a third party with prior authorisation from the CISEN. Finally, in the case of DP, this will be used for transmitting power production from determined geographical areas, established by article 85 of the LGSE as DP.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

According to the CNE, in July 2016, 10.7 per cent of Chile's power generation came from NCRE. In this respect, Chilean law contains incentives as well as obligations to foster the use of renewable energies. Law No. 19,940, Law No. 20,257 and the regulations contained in Supreme Decree No. 244 (which regulates the NCRE based in small distributed generation units or PMGDs) create the conditions necessary for the development of NCRE, encouraging power generation based on alternative energy sources. Law No. 20,257 from 2008 was amended by Law No. 20,698 enacted on 22 October 2013. With its enactment, the objective of the Chilean state is that by 2025, 20 per cent of the energy produced will come from NCRE sources.

Incentives

Non-conventional power facilities with less than 20MW may sell their output capacity to the spot market without having to pay tolls to transmission companies (with differentiated treatment for units of less than 9MW and those between 9MW and 20MW). As regards PMGDs, Chilean law incentivises the development of this kind of energy source, granting them the possibility to decide whether to sell energy at the spot market price or at a fixed price.

Obligations

The target increase in generation of NCRE has gone from 10 per cent by 2014 to 20 per cent by 2025. By doing so, 20 per cent of the withdrawals of the power companies in each calendar year should have been injected into the system from NCRE sources, owned by energy companies or purchased. This increase will be progressive: 5 per cent between 2010 and 2014 and then after 0.5 per cent each year and should reach 10 per cent by 2024. This progression will apply to contracts entered into between 1 September 2007 and 30 June 2013. For those contracts dated after 1 July 2013 the obligation will be of 5 per cent in 2013, and thereafter 1 per cent each year until 12 per cent is reached by 2020. Between 2021 and 2024 the increase shall be 1.5 per cent and in the last year, 2025, there should be an increase of 20 per cent to reach the objective of 20 per cent NCRE.

New and exclusive bidding process for NCRE to open

The Energy Ministry is obliged to carry out a public bidding process every year for energy coming from NCRE sources, which will help to reach the quotes of NCRE required. Through this process the government will create a competitive mechanism that should help to improve the financing conditions of NCRE, with the followings characteristics:

- the public bidding process can be implemented separately for each transmission system in up to two bidding periods per year. The amount of energy will depend on the projections of fulfilment of NCRE quotas for the next three years;
- each participant of the bidding process shall submit an offer including the amount of energy (GWh) and a price (US$/MWh); and
- the project will be awarded to the cheapest bid until the necessary amount of energy is reached, considering a maximum price equal to the average cost of the most efficient generation technology of the electric system that can be installed in the long term.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Two major undertakings have been launched for the purpose of introducing incentives on NCRE: improvement of the regulatory framework of the electricity market and the implementation of direct support mechanisms for investment initiatives in NCRE.

The proposed changes intend, among other things, to create the conditions to implement a portfolio of NCRE projects to accelerate the development of the market, eliminate the barriers that frequently impede innovation and generate confidence in the electricity market regarding this type of technology. This is partially achieved by the government enacting the law for the development of NCRE (Law No. 20,257 amended by Law No. 20,698).On the other hand, as declared by the current Environment Minister, since the ratifying of the United Nations Framework Convention on Climate Change (UNFCCC) in 1994 and signing the Kyoto Protocol in 2002, Chile has actively engaged in the establishment of national policies in response to climate change. In this regard, the recent green tax (enacted through Law No. 20,780 – see 'Update and trends') has many innovative aspects and will establish to Chile as a user in this kind of taxation from 2017. Also, Chile is an active player in the carbon bond market, established to comply with the UNFCCC.

Finally, it is important to mention that according to the Chile's Energy Agenda (Energy 2050, related to the Energy Agenda 2014), in Chile the energy sector has had the highest impact in terms of greenhouse gas emissions (GHG), mainly owing to its consumption of fossil fuels for electricity generation, land transportation and mining. Between 1990 and 2010, GHG emissions from this sector doubled, from 34 million tons of equivalent carbon dioxide, to 68 million tons. This means that in 2010 almost 75 per cent of total emissions in Chile came from this sector. In this regard, as a sign of Chile's commitment to climate change protocol, the government signed the Climate Agreement of Paris on 5 January 2016, to undertake the voluntary compromise to reduce its emissions of GHG by 30 per cent by 2030, from the 2007 level.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

One of the most remarkable achievements of the Amendment is defining and incorporating electricity storage systems along with generation and transmission systems into the national electricity regulations and organising the entire electricity system under the CISEN. The Chilean regulatory framework does not currently support electricity storage in a particular way, but grants the CISEN wide scope in allocating permanent funds for research, development and innovation in energy. In the coming months, Chilean authorities must publish the special regulations for the functioning of the CISEN and particularly on how it will use the available funds.

Given that in Chile the majority of current projects use solar panel technology, electricity storage systems should take up a significant place in the years to come, and indeed, although the topic is only a recent one, several private organisations are exploring the options to develop such technology in Chile.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Chile does not possess nuclear power plants. It only has two nuclear research reactors. In this respect, nuclear power plants are a relatively new topic in Chile and have been the subject of preliminary studies by the authorities and other private organisations. These studies have concluded that it is necessary to implement and develop significant changes to the institutional regulation of electricity to provide the safety standard required to build and operate nuclear power facilities.

Considering that Chile is in a zone of seismic activity, there are concerns about the safety of nuclear plants and government policy is, therefore, cautious regarding the promotion of this energy source. The 8.8 earthquake and tsunami in Chile on 27 February 2010, and the Fukushima nuclear incident in Japan in 2011 had an impact on Chilean policymakers and regulatory institutions. In this regard, it was recently announced that nuclear energy has not been included in Energy 2050 as a short-term option, because it requires research on the main issues, such as its long-term economic viability in the face of various legal and market conditions, and the legal and institutional amendments required, among other things. This research should be directed by the Chilean Commission on Nuclear Energy by drawing on competent national agencies. The next evaluation process of Chile's long-term Energy Policy will review the appropriateness of incorporating this technology into the electricity generation matrix.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

There are no authorisations required to construct and operate transmission networks. However, as already mentioned, to avoid lengthy negotiations with landowners and to create better conditions to ease and secure the right of way, land transmission companies usually obtain electricity concessions that in turn provide for legal rights of way over the portion of lands where they will build the transmission lines.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Every energy business has the right to obtain transmission services. The Amendment enacted this year established that the NTS and ZTS are subject to a regime of open access. The NTS, ZTS and the DP are considered a public service, which means that third parties may use them under non-discriminatory technical and economic rules, subject to payment for the use of the corresponding transmission system. In this regard, the open access regime applied before the enactment of the Amendment was expanded, now reaching the DTS.

The CISEN will now have to establish the payment process for concepts of connection, studies, engineering analysis or right of use of facilities and terms for the connection. Finally, the CISEN ensures open access to transmission systems, and therefore any restriction in this regard may be applied to all energy concerns by the CISEN in its role as operation coordinator of an electricity system based on public service needs.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

According to the Amendment, the government will have a new role in the development of the new electricity power transmission system, taking an active participation in a unique process named 'trace definition'.

In this regard, the law establishes a new procedure of planned transmission. Each year, the Minister of Energy will develop a trace definition study for electric transmission of public interest that will be subject to a strategic environmental evaluation, approval from the Council of Ministers for Sustainability and an indigenous consultation if required. Finally, the traces initially determined by the study may be subject to all easement covered by the LGSE.

This procedure reduces the costs and terms involved in the construction of transmission grids, especially if we consider that a contractor currently in a tender process for the construction of transmission grids must decide the trace, obtain the environmental qualification resolutions and file a definitive concession request.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

There is a special regulation related to systems of transportation or transmission of energy that are subject to an open access regime. Open access is assumed as the element by which third parties can use the electrical system's transmission facilities under non-discriminatory, technical and economic conditions. If technical transmission capacity is available, an owner of such transmission facility may not refuse the interconnection. In exchange, third parties must pay for the use of the corresponding transmission system. Therefore the law establishes a procedure to set the tariffs and the rules pertaining to the payment obligation of the companies using the transmission system.

As regards setting of tariffs, the costs of transmission have to be addressed. Consequently, the relevant costs of transmission will have to be paid. These transmission costs are the 'fee' of the company that owns the facilities, which are subject to open access and will be settled by the toll direction, currently by the CISEN.

As a substantial modification, the Amendment transfers the payment of transmission costs to final customers (unregulated and regulated) of the national (NTS), zonal (ZTS) and dedicated (in part used by clients submitted to price regulation) transmission systems. Before the Amendment's entry into force, the main transmission system was financed by power generation companies and clients together, according to a prorate defined by the LGSE. With the Amendment, a single access charge is established, called a unique charge. Finally, the Amendment establishes a transitory article No. 25 in order to define the National Transmission System's collection, payment and remuneration, with the objective of maintaining the price of transportation in current supply contracts. In this way, payments made by final consumers shall be compensated, if applicable, under those contracts.

Concerning tolls for the use of distribution facilities, the LGSE offers a core set of rules that are further developed by the regulations of said law. The law establishes a series of rules related to the impact on end users of the payments made by the companies using the transportation system. This implies that they may be included in the final tariff that distribution companies charge to regulated clients.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The entity responsible for assuring reliability of the transmission grid is the new CISEN. In accordance with the Amendment, is in charge of the operation of the energy facilities in any energy system, including the power facilities, NTS lines, ZTS lines and the electricity substations so that the system's energy consumption costs are kept as low as possible while maintaining the reliability of the system. The CISEN's primary responsibilities are to preserve the overall security of the electricity system, to ensure the most economical operation of all electricity system installations and to ensure open access to the transmission systems.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Distribution companies operate under a concession system for public distribution services. The Electricity Law regulates the tariff and services. In the case of urban areas, it is also necessary to obtain a construction authorisation from the corresponding municipality through a territorial planning regulation.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Any energy business concern is eligible to obtain access to the distribution grid and, subject to the applicable toll for the use of distribution facilities, there are no other requirements to be met to obtain access to the distribution grid. The distribution toll, according to the Amendment, shall be determined by the Ministry of Energy. Before the Amendment, such toll was determined by the calculation formulae set out in DS 79 of the Ministry of Economy, published in March 2009.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

There are no governmental measures to the expansion of the distribution network.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The LGSE determines the rates and terms for the provision of distribution services. First, it is important to mention that according to the Amendment (new article 131 of the LGSE), distribution companies must permanently secure the power supply necessary to fulfil the total consumption of their regulated customers in their relevant concession areas, and not including their free customers' consumption. For such purposes, distribution companies must enter into long-term power purchase agreements, strictly via regulated tender processes. Article 184 of the LGSE prescribes that distribution tariffs consider node prices at the interconnection point with distribution facilities, and the distribution aggregated value. This takes into account, among other things, the fixed costs per user (administration, invoicing and customer service), average losses of energy and capacity, standard costs of investment, maintenance and operation associated with distribution per unit of power supplied and the unique charge.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Chilean law does not provide for any authorisation for the sale of power to customers except for those that are considered regulated customers (see previous questions, in particular, questions 2 and 14).

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Chilean law distinguishes three different types of power sales: power sale in the spot market, which is determined by the marginal costs of energy and the capacity price (see question 2); direct negotiation contract; and regulated contracts. The spot market is limited to generators that can sell their energy output if they have not been able to secure a direct sale to non-regulated customers (see question 17) or to distribution companies only. Direct negotiation contracts are contracts between high-use consumers (see question 17) and distribution companies at freely agreed prices. Regulated contracts are those that explain the contract relationship between the non-regulated customer and the distribution company. The law determines the price of this power sale.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

See question 2.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Both the electricity transmission companies and the distribution companies are subject to public service obligations. In this respect, and in accordance with the open access principle, they are obliged to permit access to any third party on a non-discriminatory technical or economic basis.

It is important to mention that the Amendment introduced numerous articles into the LGSE to avoid risk and damages over the power systems capability, security of supply or economical operation in the case of a bankruptcy of either generation, transmission or distribution company. (Note that Law No. 20,720 (the Chilean Bankruptcy Law) replaced the former Chilean bankruptcy regime (created in 1982) for a law of reorganisation and liquidation of companies and individuals. This law entered into effect on 9 October 2014, establishing various rules that seek to avoid bankruptcy of individuals and companies in a more pro-entrepreneur approach. Indeed, the Chilean Bankruptcy Law puts the reorganisation of viable enterprises in the spotlight, establishing procedures for the restructuring of their debts, through an agreement subscribed to by its creditors within a maximum period of four months, while enabling the company to continue operating and employing staff. It also establishes the possibility of renegotiation of debts for individuals.) If the aspects mentioned above are compromised, the Superintendency of Electricity and Fuels (SEC) shall appoint a temporary administrator to continue the business purpose of the bankrupted company. Additionally, the Amendment introduced a couple of relevant transitory amendments to implement certain mitigation procedures if the supply to regulated customers were to be threatened.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

In accordance with the country's Constitution and current legislation, certain government agencies, including those related to the electricity sector, perform a regulatory and oversight role. Electricity sector regulatory policy is determined by the Ministry of Energy created by Law No. 20,402 published on 3 December 2009. Other notable actors are (i) the SEC; (ii) the National Energy Commission (CNE); (iii) the CISEN created by the Amendment; and (iv) the Panel of Experts.

23 Scope of authority

What is the scope of each regulator's authority?

The Ministry of Energy has authority over planning and coordinating energy policies for the development and functioning of the energy system, supervising compliance with the energy regulations and assisting the government in all matters regarding the energy sector.

The SEC supervises compliance with the laws and regulations on generation, production, storage, transport and distribution of fuel (liquids, gas and electricity), and controls the quality of services provided to end customers.

The CNE is the technical public entity in charge of reviewing the tariffs and technical rules to which all energy businesses concerned shall be subject (including generation, transport, and distribution of energy), with the purpose of ensuring that the services are sufficient, reliable and affordable.

The CISEN replaces current CDECs. The new CISEN will have the same obligations and duties of current CDECs. Such duties – defined in the LGSE – are: the coordination of operations; determination of the marginal costs of electricity; assuring open access to the transmission systems; maintaining a global safety in the electricity system; the coordination of economic transactions between agents; determining the marginal cost of electricity and economic transfers between members.

The Panel of Experts, created by Law No. 19,940 specifically for the electricity sector, has limited powers involving professional experts whose function is to resolve through binding rulings any disagreement or conflict arising from the application of electricity legislation and disputes between the CISEN and a company subject to its coordination. Finally, two or more companies in the electricity sector may agree to submit their disputes to the panel's decision.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Minister of Energy, head of the Ministry of Energy, is appointed by the President and stays in office as long as he or she holds the President's trust.

The CNE is managed by an executive secretary appointed by the President through a selection process in accordance with Law No. 19,882 (the High Ranking Civil Servants Election Process Law). By this law, the selection process aims at appointing the best professional for the office.

The Superintendent of Electricity and Fuels is appointed by the President and stays in office as long as he or she maintains the President's trust.

None of these government officials are allowed to engage in private activities related to the energy sector in which they or any of their relatives may have an interest.

The CISEN is primarily a technical and independent entity, with a board of five directors, each chosen by a special committee through a public procurement process. Additionally, it has its own patrimony, and it is not considered a part of the public administration.

The panel of experts is composed of seven professionals with a long and wide-ranging professional or academic background. Five of them must be engineers or possess a degree in economic sciences. They may be nationals or foreigners. Two must be lawyers. They are appointed for six years by the Antitrust Tribunal through a public tender process. The panel's composition is partially renewed every three years.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Decisions of the regulator (SEC) can be challenged or appealed as follows.

Administrative claim

Decisions may be challenged via a reconsideration appeal established in article 9 of Law No 18,575 within five working days from the following day to that of the legal notice. This recourse is intended to request the regulator to review the application of the respective fine or ruling on the grounds of irrationality or procedural impropriety, or both, in the circumstances explained by the affected party. The regulator has only 10 working days to respond.

Judicial review is by the court of appeal (exercising supervision over public authorities in accordance with the doctrine of ultra vires).

The affected parties may file an illegality plea within 10 working days from the legal notice before the respective court of appeal, alleging that the regulator's decision is illegal. This recourse aims to render the resolution null and void.

The filing of the reconsideration appeal mentioned above suspends the term for filing the illegality plea.

The authority's imposition of a fine will always be challengeable and will not be enforceable as long as the term for filing the recourse is still pending or the matter has not been resolved, or both. However, to challenge a fine, the affected party will have to deposit before the court the equivalent of 25 per cent of the proposed fine.

The court of appeal shall revert the matter to the regulator, and the latter will have 10 working days to respond with observations. The court will not be able to decree any measure suspending the effect of the disputed act when the suspension of the effect of the resolution may affect the quality of the service, its continuity or the safety of people.

After receiving the observations from the regulator or once the term to put forward observations has elapsed, the court will call the parties for hearings. The court (if deemed necessary) may also open an evidentiary term, which may not exceed seven days. If the claim is sustained, the amount of the deposit will be deducted from the fine. If it is not sustained, the amount deposited shall be returned to the General Treasury of the Republic duly adjusted.

The resolution of the court of appeal is also subject to judicial review before the Supreme Court of Chile, within the term of 10 working days, which will proceed in the way described above.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

No particular body or authority in the sector has the power to approve or block mergers or acquisitions. However, DL 211 (the Antitrust Law) as amended by DFL 1/2005, provides for the promotion and defence of competition in all markets within Chile. Offences and challenges to competition shall, therefore, be corrected, prohibited and banned under the procedures established in the Antitrust Law. The Antitrust Tribunal and the National Economic Prosecutor's Office (FNE) shall apply the law respectively to safeguard competition in the different markets.

Consequently, mergers or other changes in control over businesses in the sector or acquisition of utility assets may be blocked by antitrust regulations. However, it is not possible to know in advance if a particular merger or acquisition transaction will be subject to the scrutiny of the competition authorities. Hence the FNE issued a guidance (not mandatory) for this type of transaction; any interested party may follow it to ask the competition authorities to review a transaction and get their feedback before it goes ahead.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The criteria and procedures are contained in the Antitrust Law, the guidance issued by the relevant authorities and the jurisprudence of the Antitrust Tribunal. Accordingly, the competition authorities shall review whether or not in a particular transaction there could be a concentration that prejudices competition in a specific sector (market). The FNE will first review the markets affected by the proposed transaction to establish the relevant market. It will then identify those companies acting in the relevant market and their respective percentages in it. It will also determine the level of concentration in the relevant market and will finally consider, following the Herfindahl-Hirschman Index, if the proposed transaction surpasses the threshold established by the authority.

The authority will also review whether the relevant market has barriers to any new participant or costs associated with new participants or economic behaviour of current participants or whether the relevant market has the flexibility to grow.

The competition authorities will be interested in determining whether the consequence of concentration might have an adverse impact on the competition of a relevant market and therefore it will punish unjustifiable increases in market power to avoid monopoly, abuse of power or oligopoly that may influence prices and affect competitors.

Proceedings before the Antitrust Tribunal may take between one and three years, and its resolutions shall be subject to judicial review by the Supreme Court. Article 27 of the Antitrust Law sets out that resolutions imposing or dismissing any of the measures contemplated in article 26 of the Antitrust Law shall be subject to appeal before the Supreme Court. Said appeal may be filed within a period of 10 working days following the relevant notification. The filing of an appeal should not suspend the execution of the Tribunal's resolution unless it relates to fines.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The relevant authorities that prevent or prosecute anticompetitive or manipulative practices in the electricity sector are those stated in the Antitrust Law, namely, the Antitrust Tribunal and the FNE.

Additionally, the Amendment provides a monitoring facility to the CISEN for detecting antitrust behaviours in the electricity market. the CISEN must inform any indication of an anticompetitive action to the FNE for a proper investigation.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Article 3 of the Antitrust Law states:

> *Whoever executes or enters into any act, agreement or convention, either individually or collectively, which hinders, restricts or impedes free competition, or which tends to produce such effects, shall be penalised with the measures indicated in article 26 hereof* (see question 30), *notwithstanding any preventive, corrective or restrictive measures that could be ordered in each case, with regard to said acts, agreements or conventions.*
>
> *Among others, the following shall be considered as acts, agreements or conventions that hinder, restrict or impede free competition, or which tend to produce said effects:*
>
> - *express or tacit agreements between competitors, or concerted practices between them, which confer to them market power and which consist of fixing sale prices, purchase prices, or other commercial terms and conditions, restricting output, allocating territories or market quotas, excluding competitors, or affecting the results of tender processes (bid rigging);*
> - *abusive exploitation by an economic agent or a group of economic agents, of a dominant position in the market, fixing sale or purchase prices, tying a sale to the purchase of another product, allocating territories or market quotas or imposing other similar abuses; and*
> - *predatory practices, or unfair competition practices, carried out with the purpose of attaining, maintaining or increasing a dominant position.*

Update and trends

Net billing
A law enacted in 2012, Law No. 20,571, regulates net metering (net billing) and payment to residential or even small industrial generators. This law allows NCRE producers to inject their surplus to the grid under a net billing scheme. This Law requires an administrative regulation that regulates the particulars of this law, for the law to enter into force. Such an administrative regulation was issued and published (Supreme Decree No. 71 of June 2014, by the Ministry of Energy, published in September 2014).

Tax reform: green tax
It is important to mention that the latest tax reform (Law No. 20,780), established a new annual tax on emissions from CO2, SO2, NOx and particulate matter (PM) sources. It is aimed at facilities with boilers or turbines that, together, add up to a heat output of at least 50 megawatts thermal (MWt). This tax is called a green tax since it would be an incentive for the growth of NCRE's projects. Specifically, Chile's green tax targets large factories and the electricity sector, covering an important percentage of the nation's carbon emissions. In the case of PM, NOx and SO2 emissions into the air, the taxes will be the equivalent of US$0.1 per ton produced or the corresponding proportion of said pollutants, increasing the result by applying a formula that takes into account the social cost of pollution, such as costs associated with the health of the population. In the case of CO2 emissions, the tax is equivalent to US$5 for each ton emitted. In order to determine the tax burden, the Chilean Environmental Superintendency will certify in March of each year a number of emissions by each taxpayer or contributor from the previous calendar year. Each taxpayer or contributor who uses any source that results in emissions, for any reason, shall install and obtain certification for a continuous emissions monitoring system for PM, CO2, SO2 and NOx. This tax will be assessed and paid on an annual basis for the emissions of the prior year, beginning in 2018 for 2017 emissions.

Chilean government's Energy Agenda: step by step, looking toward 2050
As stated in previous years, in May 2014, the Ministry of Energy published a document called the Energy Agenda. This was a road map for the development of government actions in this area, established as one of its tasks 'the design and execution of a long-term energy policy with social, political and technical validation'. To that end, two horizons were identified: one short term, and one medium and long term. The first was to discuss the work areas regarding the standards, policies and regulations that will guarantee the technical feasibility and sustainability of the energy matrix. The second was to discuss strategic and technological aspects that will define the energy matrix that Chile will be promoting from now until 2050. In the context of the Energy Agenda, a discussion process was set up, which included key stakeholders from the public sector, industry, academia, civil society, the regions of the country and the general public. The goal was to develop the country's long-term energy policy. An advisory committee led by the Minister of Energy and composed of key participants from the sector was convened with regional and national representation. The members belong to various ministries and public institutions, trade associations, civil society and Chilean universities. In September 2015, the committee evaluated the proposed Road Map for 2050: Towards Sustainable and Inclusive Energy for Chile. The Road Map contains the key items to be considered by the Energy Policy in the long term. Finally, through Supreme Decree No. 148, on 30 December 2015, the Chilean government approved and formalised its long-term Energy Policy, named Energy 2050. This document is the final testimony of the Energy 2050 process and, as was declared by the current Ministry of Energy, Máximo Pacheco:

> *It took us over 18 months to develop this long-term Energy Policy with social and technical validation. We held more than 130 regional workshops, which were attended by over 4,000 people. We formed an advisory committee composed of 27 people from diverse backgrounds, who generously worked to prepare a Road Map that informed the development of this Energy Policy.*

Energy 2050 is sustained by four pillars: quality and security of supply, energy as a driver of development, environmentally friendly energy, and energy efficiency and energy education. The proposed measures and action plans shall be developed by these pillars between 2016 and 2050. Finally, for each pillar, the long-term strategy will deploy a concrete set of guidelines, actions, stakeholders and goals for 2035 and 2050.

Planning and system's programming: obligations declares by the Amendment
Regarding power planning, the Ministry of Energy will be in charge of the development of long-term (at least 30 years) energy plan processes. For that purpose, power supply and demand projection scenarios shall be considered, among other aspects. This Ministry will run the power planning every five years. In the field of planning, the CNE will run an annual transmission planning process that will consider a 20-year perspective, covering the necessary expansion works of the national transmission system, the zonal transmission system and the dedicated transmission systems used by concessionaires of distribution services for the supply of regulated consumers or necessary for the delivery of supply.

Knowing a new figure: development poles
According to the Amendment (article No. 85 of the LGSE), a development pole means 'geographically identifiable zones of the country, located in regions in which the National Electricity System is situated where power generation resources from renewable energy are found, whose utilisation under a single transmission system is of public interest owing to its cost-effective power supply, which complies with environmental legislation and territorial regulations'. In this respect, since the enactment of the Amendment, the Ministry of Energy is entitled to identify, within the context of its long-term planning, areas of high potential for power generation where development hubs can be established. After the relevant strategic environmental assessment, such areas can be formalised, resulting in a significant contribution to the power supply. As such, the Transmission Law requires that 20 per cent of the yearly total power withdrawals from the development hubs must come from NCRE.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

Article 26 of the Antitrust Law states:

> *The Tribunal may adopt the following measures:*
> - *modify or terminate acts, contracts, agreements, or systems that are contrary to the provisions of this law;*
> - *order the amendment or dissolution of companies, corporations and other private entities that were involved in the acts, contracts, agreements, or systems referred to above; and*
> - *impose fines up to an amount equivalent to 20,000 annual tax units (UTA) and, in the case of sanctioning the conduct mentioned in subsection a) of article 3 [...] express or tacit agreements between competitors, or concerted practices between them, which [...], up to an amount equivalent to 30,000 UTA. The fines may be imposed on the relevant legal entity, its directors, administrators, and on any person who was involved in the execution of the relevant conduct. Fines applied to private individuals may not be paid by the legal entity wherein he or she carried out his or her duties, nor by the shareholders or partners thereof. Also, they may not be paid by any other entity that belongs to the same company group in the terms indicated in article 96 of the Securities Market Law, nor by their shareholders or partners. In the case of fines applied to legal entities, the directors, administrators and those persons who benefited from the relevant conduct shall be jointly and severally liable for the payment, provided they have participated in such conduct.*

The following circumstances, among others, shall be considered in determining the fines: the economic benefit obtained from the violation; the seriousness of the behaviour; and whether the transgessor was a recidivist. To decrease the fine, the collaboration provided to the FNE before or during the investigation shall be considered.

Execution of the resolutions shall be carried out directly by the Antitrust Tribunal, which shall, for these purposes, have the authority of a court of justice.

Article 32 of the Antitrust Law provides that acts or contracts executed or entered into in accordance with the decisions or recommendations of the tribunal, shall not bear liability, except if they were later deemed as contrary to free competition by the same court.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies. However, if the foreign company is to obtain an electricity concession, then it must do so via a subsidiary incorporated in Chile, since article 13 of the LGSE states that electricity concessions can only be granted to nationals or companies incorporated in Chile. However, if the foreign company is to establish its business disregarding the concession mentioned above, then this provision shall not apply. However, as explained above, the electricity concession is preferable as it legally grants the right of way and facilitates the work of establishing and developing the power project; and if the foreign company is to carry out a transmission business in Chile it must comply with article 7 of the LGSE, namely, it must be incorporated in Chile as a corporation and it will be subject to the restrictions established therein (see question 34). If the foreign company is to acquire an equity interest in a Chilean electricity company, no specific requirement will be needed. It will have to comply with the general regulation (see, for example, the reference above to the Antitrust Law) as with any other company in Chile, whether local or foreign. In this regard, please note that the Amendment establishes that companies incorporated in Chile must provide complementary services, generation and storage services.

Finally, it is important that foreign investors take into consideration that the direct foreign investment and repatriation of capital and profits are fundamentally regulated by the Foreign Exchange Regulations of the Central Bank of Chile (Chapter XIV) and Law No. 20,848, which sets forth a new legal framework and the relevant institutional structure (the Foreign Investment Promotion Agency) for direct foreign investment, to replace DL 600, previously administered by the then Foreign Investment Committee.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Law No. 20,726 enacted in 2014, aims to interconnect and optimise the joint operation of different electric systems via the interconnection of independent grids, seeking economic advantages and increased competition in the market. Additionally, this law encourages the construction of backup transmission lines, which will enhance the safety of supply and optimise the dispatch of power plants. According to this law, during wet seasons, this interconnection of systems will allow increased hydroelectric production to provide cheaper generation; and, conversely, in periods of drought, it will enable a more efficient thermoelectric generation, displacing diesel generation and contributing to lower energy costs. This law also seeks to diversify the sources of generation.

In this regard, this year the Amendment introduces a procedure to construct and operate interconnections lines as part of the electrical facilities (article 72-17).

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Power exchanges and interconnection between the current Chilean independent electrical systems, are regulated under the LGSE (according to Law No. 20,726).

However, in the field of cross-border power exchanges or interconnection, Chile has given fascinating signals. As was declared by the government (in Energy 2050):

> *in the context of this interdependence, the role of energy integration becomes crucial in terms of ensuring greater flexibility and security for the energy systems. In this sense, the countries of South America have started to move away from their traditional vision on these matters, which classified countries as either 'exporters' or 'importers' of energy. The vision that is taking hold in South America is one of complementarity and regional energy integration.*

This analysis has understood, from an economical point of view that electricity interconnections have resulted in greater competition in the power generation market and more competitive prices to the final users. In this respect, the government indicated as '2035's Goal' Chile's interconnection with the other Andean Region Electric Interconnection System member countries and other South American nations, especially the members of MERCOSUR.

In this regard, the Amendment regulates international power exchanges, directly in the form of international interconnection systems, as a part of the transmission system (the new articles 73 and 78 of the LGSE), which will be under the CISEN's technical and economic management. In this respect, one of the key players in the Chilean energy market asked the Ministry of Energy for an authorisation to export energy through the Andes–Salta 345kV transmission line (owned by this key player) up to the Argentinean Salta substation. The Ministry granted such authorisation through Decree No. 7, published in the Official Gazette on 19 June 2015. According to the information provided by the CNE, on 12 February 2016, the export of energy began with a supply of 110MW from the GasAtacama power plant.

LARRAIN RENCORET URZUA ABOGADOS

José Manuel Larraín **jmlarrain@lyrabogados.cl**
David Acuña **dacuna@lyrabogados.cl**
Ignacio Pera **ipera@lyrabogados.cl**

Av Apoquindo 3001, 9th Floor
Las Condes
Santiago
Chile

Tel: +56 2 411 9200
Fax: +56 2 411 9300
www.lyrabogados.cl

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

There are no restrictions on transactions between electricity utilities and their affiliates. However, according to article 7 of the LGSE, companies that operate or own the NTS cannot carry out activities related in any way to generation or distribution of electricity by themselves or by related companies.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

There are no sanctions on dealings between electricity utilities and their affiliates. However, one must consider article 7 mentioned above on the limitation of participations in other electricity-related companies. According to that article:

- transmission companies may not have any interest in any generation or distribution company;
- generation and distribution companies may not hold more than 8 per cent of the total investment of the NTS; and
- joint interest of the generation and distribution companies and the whole of the non-regulated users in the NTS may not exceed 40 per cent of the value of the total investment of the NTS. These equity limitations are extended to economic groups or companies that are part of transmission companies or that have joint action agreements with transmission, generation and distribution companies.

Costa Rica

Ruben Zamora-Castro
Aguilar Castillo Love

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

In Costa Rica the whole electric market is regulated.

Supply electricity is regulated in all their four phases: generation, transmission, distribution and commercialisation.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The distribution and commercialisation is in the hands of eight companies; two of them are government-owned (ICE and CNFL), two are municipal-owned (JASEC snd ESPH) and the other four companies are cooperative electric companies founded 50 years ago with the help of the United States Agency for International Development under the same scheme of electricity cooperative companies in the United States.

ICE (government company) has a monopoly of the transmission networks of Costa Rica.

In the generation phase, private companies have a cap in the generation market; only 15 per cent of the whole Costa Rican generation system can be in the hands of private companies under build-own-operate contracts to sell energy to ICE, and there is a cap of another 15 per cent for private companies wishing to develop build-own-transfer projects with ICE.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The eight distribution companies may develop their own generation projects. Those projects can be developed by one distribution company or between some of them, and also private companies can be part of the project.

Private investors wishing to develop a project to sell energy to ICE must obtain the following permits:

- Any private company that wishes to develop an energy generation project to sell energy to ICE must first obtain a permit from ICE called an *elegibilidad,* which is basically a preliminary review to check that the project is possible from the legal, finance and technical point of view, like a pre-feasibility.
- From an environmental point of view, a generation project needs an environmental viability permit from the Environmental Secretary (SETENA). For this process there is an audience in the place where the project will be built and it is usually hydroelectric projects that encounter some social opposition.
- If a company has an environmental viability permit from SETENA, and the project is a hydroelectric plant, the project then needs a 'water' concession from the Water Office of the Environmental and Energy Ministry (MINAE), which allows the company to use the hydraulic force of the water. This permits a set amount of litres of water per second with a specific metre drop that also determines a specific energy potential.
- The last permit is the public service concession given by the Public Services Regulatory Authority (ARESEP), if the project already had obtained the previous permits and also after a public hearing to present the project.

These are the permits needed to sign a contract to sell energy to ICE, but the selection of a project depends on the willingness of ICE to start the process of incorporating a new generation plant.

The ICE process of selecting a project depends of the price of the electricity that the private company could offer, for example: ICE request one eolic generation project of 20MW and companies that have an eolic *elegibilidad* could offer a price per kWh lying within a 'tariff band' that the ARESEP has previously approved. The project with the best price wins the contract.

Four years ago, four eolic projects offered the minimum price of the 'tariff band' that the ARESEP previously had approved, and each of them won a 20MW contract to sell energy to ICE.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

ICE has a monopoly on transmission networks in Costa Rica.

Any generation project bigger than 5MW needs to connect to the transmission network and this means it will need authorisation from ICE.

A generation project smaller than 5MW could connect to a distribution company network if the distribution company so permits.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Costa Rica has had a renewable energy policy for several decades.

Currently Costa Rica produces more than 95 per cent of its electricity from renewable energy sources. For several weeks in the rainy season Costa Rica produces 100 per cent of the electricity from renewable sources.

Costa Rica only uses fuel power plants when it needs to back up the system but not as an ordinary source of electricity.

Most renewable energy comes from hydroelectric plants.

Eolic projects have grown rapidly in the past five years (more than 200MW).

Solar projects should grow in the future, as right now there is only 1MW installed in one of the eight distribution companies.

Any renewable generation equipment has tax exceptions.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Costa Rica has had a renewable energy policy for several decades.

The goal is to improve the 95 per cent renewable electricity production and at the same time begin to supply the transportation with electric solutions instead of fuel options.

If Costa Rica is able to reduce carbon emissions in transportation, within the next decade the country could be carbon-neutral.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The National Energy Plan of Costa Rica (2015–2030), which MINAE approved last year, has a specific objective to analyse electricity storage possibilities to use renewable energy in times of higher consumption.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Nuclear energy is not renewable energy and it is not considered under the National Energy Plan of Costa Rica (2015–2030).

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

ICE has a monopoly on transmission networks of Costa Rica.

Only ICE may construct and operate transmission networks.

Costa Rica does not have an open transmission market.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Only ICE may construct and operate transmission networks.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

ICE collects a regulated tariff, per every kWh that need to be transmitted in the transmission network, and with that income ICE has to develop the network.

Only the distribution companies could use the transmission network. It means that private companies cannot have access to the transmission network to generate energy in one place and consume that energy in other.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The cost of the transmission network is reviewed by the ARESEP.

The quality standard is set also by the regulatory authority.

The tariff of the transmission service is calculated by the sum of all the costs that ICE has incurred to provide that service.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Because only ICE may provide the service, ICE has to maintain that the network is always available to other distribution companies.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

The entire Costa Rica territory is distributed by the current eight distribution companies. These companies have a formal concession (permits) from MINAE.

There is no part of the country that does not have a distribution concession.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

There is no part of the country that does not have a distribution concession, so it is currently not possible to request a distribution permit.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

In 1974, the Costa Rican electricity system covered 50 per cent of the population of the country, but 40 years later, in 2014, the system covered 99.4 per cent of the population of the country. In other words, the distribution network covers almost the entire population, so the expansion of the distribution network is now focused on improving that excellent percentage.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Every one of the eight distribution companies collect a regulated tariff.

The cost of the distribution network is reviewed by the ARESEP.

The quality standard is also set by the regulatory authority.

The tariff of the distribution service is calculated by the sum of all the cost that a specific distribution company have. Because of that, the prices of the government companies (ICE and CNFL) are currently 10 to 30 per cent higher than other distribution companies such as JASEC, ESPH, Coopelesca or Coopeguancaste.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Only the eight distribution companies that have concessions over Costa Rica territory may sell electricity to domestic, commercial and industrial customers.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Power sales have a tariff regulated by the ARESEP.

The tariff for power sale is the same as the tariff for the distribution service.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Wholesale power has a special tariff in Costa Rica for those industrial companies (cement, microchips, aluminium, glass) that require high electricity consumption and able to obtain electricity directly from the transmission networks.

These kinds of sales of power are not considered distribution sales, but are considered directly generation sales. The sole provider of this wholesale tariff is ICE.

The tariff for the wholesale of energy is also regulated by the ARESEP but not according to the cost of the energy because it must

subsidise the price, for example, when the other generation tariffs go up the wholesale tariff do not rise.

The wholesale price is currently between US$0.05 and $0.06 during the day and $0.4 during the night.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Electricity utilities are considered public services that are regulated from the economic and quality point of view.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

MINAE, ARESEP and ICE are the authorities determining regulatory policy in the electricity sector.

23 Scope of authority

What is the scope of each regulator's authority?

MINAE is the authority in charge of the public policy on energy in Costa Rica.

MINAE is also in charge of the concessions (permits) of generation and distribution of energy.

MINAE is also in charge, via its Water Office, of the hydroelectric use of the waters.

MINAE is also in charge, via SETENA, of environmental construction viabilities of any kind of generation project.

TheARESEP is in charge of the quality of the electricity that costumers receive and of the economic regulation (tariffs) of all the electricity prices (generation, transmission, distribution and commercialisation).

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The ARESEP is considered very independent. The General Regulator is the head of the ARESEP and is chosen by the President of Costa Rica, but needs to be approved by the parliament as well. ARESEP also has a board of directors that is chosen by the President and needs to be approved by the parliament.

The head of MINAE is the Ministry, and for the energy sector there is also a Vice Minister of Energy, both chosen at the discretion of the President.

Update and trends

The possibility of a more open market has been an important topic of discussion in the country.

The solar potential of Costa Rica's location and the lack of solar projects in Costa Rica is both an important opportunity and a challenge for the public energy policies.

The projects and transactions available to non-government distribution companies have been an important new opportunity in the past three years.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

ARESEP and MINAE decisions can be appealed, but their decisions are rarely revoked.

These decisions can be also challenged in a judicial court, under a formal trial to present the arguments to revoke a decision.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

In Costa Rica the acquisition of electricity utilities happens at generation levels, for example, when a distribution company buys a generation plant that was owned by a different private company.

In these cases, during the acquisition process the companies send an information letter to the Competition Government Office which is part of the Ministry of the Economy.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Transfers of stocks of the private generation companies are not under competition restrictions, because:

- Costa Rica does not have an open electricity market; and
- ICE and its subsidiary (CNFL) have more than 70 per cent of the consumption market, which means that the dominant company is also a government company.

Prices are regulated and do not depend on the market share.

aguilarcastillo LOVE

Ruben Zamora-Castro **rzc@aguilarcastillolove.com**

Centro Corporativo Plaza Roble
El Pórtico Building, III Level
Escazú
San José
Costa Rica

Tel: +506 2222 5959
Fax: +506 2222 9653
www.aguilarcastillolove.com

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

Costa Rica does not have an open competitive electric market. The price of electricity does not depend on market share.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Costa Rica does not have an open competitive electric market. The price of electricity does not depend on market share.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

Costa Rica does not have an open competitive electric market. The price of electricity does not depend on market share.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Private companies that sell electricity to ICE, according to Law 7,200, must always leave a 35 per cent share of the company in the hands of Costa Rican citizens. It means that a foreign company may only hold 65 per cent of the shares in a private generation company.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

ICE has a monopoly on transmission networks in Costa Rica. Only ICE may construct and operate transmission networks. Costa Rica does not have an open transmission market.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

ICE has a monopoly on transmission networks in Costa Rica. Only ICE may construct and operate transmission networks. Costa Rica does not have an open transmission market.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

There are no restrictions on transactions between electricity utilities and their affiliates.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

There are no restrictions on transactions between electricity utilities and their affiliates.

Croatia

Ivana Manovelo and Miran Macesic

Macesic & Partners LLC

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

The power industry is of special (national) importance in Croatia. The general guidelines of Croatia's government policy regarding the electricity sector are set out in the Strategy of Energy Development (Official Gazette No. 130/09) (the Strategy). At the time the Strategy was adopted, Croatia's main aim was to adjust and prepare the energy sector in general, which includes the electricity sector, for accession into the EU and participation in the single EU market, but at the same time to preserve Croatia's national interest. The strategy is to achieve a balance between the liberalisation of the electricity market and necessary government intervention, to enhance energy efficiency and to use more alternative energy sources and technologies that protect the environment. Croatia's further aim is to achieve security of supply (especially in import of electricity), competitiveness in the international market and sustainable energy development.

In the meantime, the global crisis affected the energy sector, which resulted in a volatile market and prices and lack of planned investments. Consequently, although the main principles remain, the Strategy is not entirely in line with the current market and some of its goals will be hard to attain. As a result, the government adopted several national action plans modifying aims set by the Strategy, implementing specific measures for realisation of EU and national energy targets.

Furthermore, on 1 July 2013 Croatia became a member of the European Union and joined the EU energy market. One of Croatia's obligations as part of its accession process was the incorporation of the EU Third Energy Package. Thus, in 2012 and 2013, new legislation was adopted governing the electricity sector, later amended in line with EU legislation: the Energy Act (Official Gazette No. 120/12, 14/14, 95/15, 102/15), the Energy Activities Regulations Act (Official Gazette No. 120/12) and the Electricity Market Act (Official Gazette No. 22/13, 102/15). These acts incorporate respective EU directives, in particular Directive 2009/72/EC, 2009/28/EC and 2005/89/EC and a number of EU regulations. Since 2006, Croatia has been a party to the Energy Community Treaty (Official Gazette International Treaty No. 6/06). According to the Croatian Constitution, international agreements take priority over domestic laws and form an integral part of Croatian legislation.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Croatian law regulates six electricity activities: generation, transmission, distribution, supply, retail and electricity market organisation. Traditionally, all activities were performed exclusively by the Croatian national electricity utility, HEP Grupa (HEP Group). However, through the process of liberalisation and opening of the electricity sector to market competition, certain electricity activities became market activities, while others remained as HEP's exclusive activity. Thus, generation, retail and supply of electricity (except when performed as a public service) are performed as market activities (the price and quantity of delivered power is freely negotiated). On the other hand, the transmission and distribution of electricity, electricity market organisation and supply (when performed as a public service) are regulated activities and are performed as public service obligations.

HEP Group consists of Hrvatska elektroprivreda dd (HEP dd) as parent company and several subsidiaries, each of which performs regulated and market activities.

HEP dd has undergone an unbundling process to meet the requirements of the Electricity Market Act. It opted for the independent transmission operator model, meaning that the transmission system operator (renamed HOPS d.o.o.) remained part of the vertically integrated undertaking HEP Group; however, it had to secure physical, technical and financial independence from HEP dd.

HEP-Operator distribucijskog sustava d.o.o. (HEP-DSO) is the Croatian distribution system operator. It is also part of the HEP Group but independent from other HEP Group undertakings and activities.

In September 2016 there are 38 registered electricity generation undertakings, 21 suppliers and 23 retail undertakings. Although the number of registered electricity undertakings has been growing continuously since Croatia joined EU, HEP Group still holds dominant position on the Croatian electricity market. HEP's position on the market has changed rapidly in the past couple of years because new competitors have been entering the market, especially the supply market, where these new competitors, such as German RWE and Slovenian GEN-I, offer lower prices. Since HEP started losing its customers, it has been forced to lower its prices.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

There are two types of authorisations necessary to construct and operate generation facilities: licences for the performance of electricity generation activities and energy authorisation for construction of new generation capacities.

The licence for electricity generation is issued by the Croatian Energy Regulatory Agency (HERA) in accordance with the Rules on Energy Licences and Maintenance of Registry of Issued and Revoked Energy Licences (Official Gazette No. 88/15, 114/15).

The energy authorisation for the construction of generation capacity is granted by the Ministry of Economy (the Ministry) pursuant to the Electricity Market Act. Other construction, location and environmental licences are issued by authorised administrations or ministries in accordance with the respective legislation.

If and when it finds it is necessary, the government may decide on the construction of additional electricity generation facilities through a public tender procurement process in the interest of safety of supply.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Under the Electricity Market Act, HOPS must provide non-discriminatory access to the transmission grid according to the regulated third-party access regime. Any new generator should file a request for connection to the transmission grid, which HOPS must accept if all the prerequisites set out in the General Conditions for Grid

Usage and Electricity Supply (Official Gazette No. 85/15) and the Grid Code are met. HOPS may not deny access to the new generator based on possible future network limitations or additional costs related to an increase in network capacity.

Upon issuing consent for connection to the grid, an agreement is concluded between HOPS and the new grid user. A new generator whose access to the grid was denied may appeal against HOPS' decision to HERA. HERA's decision is final, but the unsatisfied party may file a claim with the Croatian Administrative Court.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The use of alternative energy sources (water, wind, sun, geothermal sources, combined heat and power (CHP), etc) is one of Croatia's strategic plans as outlined in the Strategy. According to the Strategy, Croatia has great natural and technical potential. Following EU requirements, Croatia adopted in late 2013 a National Action Plan for Renewable Energy Sources until 2020 (hereinafter: Action Plan), as the implementing instrument for the realisation of EU targets (20-20-20) and national energy strategy. In order to meet the targets, the government has shifted its focus from encouraging wind farm construction (the incentives have been quite high in recent years) to energy production from biomass, biogas, cogeneration plants and small hydropower plants.

The Energy Act also expressly states that use of alternative energy sources and CHP is in Croatia's interest (article 13). According to the Electricity Market Act, any generator that uses renewable energy sources may be awarded 'eligible producer status', under conditions set by the law.

Effective from 1 January 2016, the new Act on Renewable Energy Sources and High Efficient Cogeneration (Official Gazette No. 100/15) (hereinafter: RES Act) harmonises for the first time national and EU legislation (in particular Directives 2009/28/EC and 2012/27/EU) in the field of renewable energy and aims to stimulate and enhance production of 'green' energy. RES Act introduces market premium as the new incentive model, which replaces the present feed-in tariff model. Feed -in tariffs have been kept as incentive model for smaller plants only, up to 30kW.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Environmental protection has a great impact on Croatia's policy in the electricity sector, as outlined in the Strategy. In this regard, Croatia encourages the use of natural gas and renewable energy sources, while in the future it plans to accept nuclear and hydrogen technology only if the aforementioned technologies prove to be safe and acceptable to the environment. Renewables are not only encouraged because they are less harmful energy sources and better for the environment, but also because national fossil energy sources are insufficient for the steady increase in electricity demand. Furthermore, Croatia has natural potential for the production of 'green energy'.

Generally speaking, because Croatia is an importer of energy, the use of renewable energy sources causes an increase in generation costs and, consequently, electricity prices.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Electricity storage is not specifically regulated or supported by Croatian law. RES Act prescribes that renewable energy demonstration projects shall not be supported through market premium or feed-in tariff incentive models but through general R&D and innovation support programmes.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Croatia does not have nuclear power plants on its territory; however, HEP is a co-owner of Krsko nuclear plant in Slovenia. Although Croatia recognises the need for nuclear energy and has adopted a nuclear energy programme outlined in the Strategy, this never came to life.

The greatest concern in construction of a new nuclear plant is its influence on the environment. To this date, the government has not approved any nuclear energy construction projects nor any of such projects are expected in the near future.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

The national transmission networks are owned and operated by the national transmission system operator, HOPS (see question 2). Since electricity transmission is a regulated, non-market activity, HOPS, has the sole power to construct and operate transmission networks.

In accordance with the Electricity Market Act, HOPS with prior approval from HERA, has to pass each year a 10-year transmission system development plan. The current plan is prepared from 2016 until 2025. The plan implements measures to guarantee enough capacity and security of supply.

HOPS was granted a licence for electricity transmission activities, issued by HERA.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Pursuant to the Electricity Market Act, HOPS must provide non-discriminatory access to the transmission grid to all grid users, based on the regulated third-party access regime, in accordance with the General Conditions for Grid Usage and Electricity Supply and the Grid Code. To obtain access to the transmission grid, new generators and customers are obliged to obtain consent from HOPS to connect to the grid. HOPS may deny access only in the case of limited technical or operating capabilities of the grid, undergoing maintenance works or in case of danger to the human lives or assets. Any new generator or customer whose access to the grid is denied may appeal against the HOPS's decision to HERA. HERA's decision is final, but the unsatisfied party may file a claim with the competent administrative court. The administrative court proceedings should be conducted as expedited proceedings.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

According to the HOPS 10-year transmission system development plan (2016–2025), Croatia has a transmission grid that is 7.487,50km long. There are no government incentives to encourage expansion of the transmission grid. However, HERA as a regulatory body must review, approve and monitor the application of the 10-year transmission system development plan including any investment projects regarding expansion of the transmission grid.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

In accordance with the 2015 amendments to the Energy Act, transmission services rates are set by HERA, instead of the Croatian government (which was previously the case). HERA rendered the Methodology for Calculation of Tariffs for Electricity Transmission (Official Gazette No. 104/15) and on the ground of the Methodology HERA renders tariff rates until 15 December of each year for the following regulatory year.

The rates for 2016 are set by the Decision on Tariff Rates for Electricity Transmission (Official Gazette No. 134/15). The new Methodology adopts a recognised costs method meaning that tariffs are calculated based on total recognised costs for the previous year, estimated costs for the current year and planned costs for the following regulatory year. The main legal standards HERA applies are justified, transparent and objective costs.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

HOPS is responsible for the reliability of the transmission grid, as the sole TSO in Croatia with the licence to carry out electricity transmission as a public service (see question 2). HOPS's main responsibility is to transmit electricity and to maintain and develop the transmission network for the purpose of the reliable supply of electricity for customers at the lowest cost and the protection of the environment. An extensive list of HOPS powers and responsibilities is outlined in articles 29 and 30 of the Electricity Market Act.

The maintenance of the transmission network includes maintenance of overhead lines and underground cables, primary and secondary equipment, auxiliary plants, telecommunications equipment and building structures in substations and switchyards.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Croatian distribution networks are owned, constructed and operated by HEP-DSO. Since distribution is also a regulated energy activity, all principles that apply to the transmission network also apply to the distribution network (see question 9). The current 10-year distribution development plan was prepared by HEP-DSO for the period 2016–2025.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

The regulated third-party access regime that applies to the transmission grid also applies to access to the distribution grid. Therefore, the same rules applicable to access to the transmission grid also apply to the access to distribution grid (see question 10).

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

According to the HEP-DSO 10-year distribution development plan (2016-2025), Croatia has a 135.749km-long distribution grid. Although there are no government incentives to expand the distribution network, HERA as a regulatory body must review, approve and monitor the application of the 10-year distribution system development plan including any investment projects regarding expansion of the distribution grid. The government's intention is primarily to modernise the existing network and to enhance its efficiency.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

In accordance with the 2015 amendments to the Energy Act, distribution services rates are set by HERA, instead of the Croatian government (which was previously the case). HERA rendered the Methodology for Calculation of Tariffs for Electricity Distribution (Official Gazette No. 104/15) and on the ground of the Methodology HERA renders tariff rates until 15 December of each year for the following regulatory year. The rates for 2016 are set by the Decision on Tariff Rates for Electricity Distribution (Official Gazette No. 134/15). The new Methodology adopts a recognised costs method, meaning that tariffs are calculated based on total recognised costs for the previous year, estimated costs for the current year and planned costs for the following regulatory year. The main legal standards HERA applies are justified, transparent and objective costs.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Sale of power to final customers (supply) may be regulated (public service) or market activity. Supply of power under regulated terms is performed as universal service (to households) or as a last resort service (to entrepreneurs).

Both types of suppliers (regulated and market) have to obtain their energy licences for supply of power to customers from HERA. In addition, a supplier under regulated terms is awarded a public service obligation by the government's decision.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Croatia's power sales market has been fully open since 1 July 2008, meaning that all customers have acquired 'eligible customer status'. This means that all customers have the legal right to choose their electricity supplier and freely contract the quantity and price of the supplied electricity.

Tariffs are regulated only with respect to supply of electricity as a last resort service (see question 18). Power sales tariffs are set by the following regulations rendered by HERA: Methodology for Calculation of Tariffs for Electricity Supply as Last Resort Service (Official Gazette No. 158/13) and Decision on Tariffs for Last Resort Electricity Supply (Official Gazette No. 55/16).

Even though the market is opened and competitors offer lower prices, a large number of customers have still not chosen their supplier and are still supplied by HEP-ODS (last resort supplier). In order to encourage customers to choose their market supplier, based on the aforementioned methodologies and tariffs, entrepreneurs supplied by HEP-ODS have been paying 20 to 50 per cent higher prices since 1 July 2014.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Croatia does not regulate rates for sales of wholesale power; it is a market activity and all prices are freely negotiated. HEP dd is negotiating power wholesale rates with other electricity companies in the region through tenders.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Public service obligations exist with regard to household customers who opted for or automatically use universal service and as a last resort supply to entrepreneurs, (ie, in the event of failure of the electricity supplier).

HEP-ODS d.o.o is nominated as the universal service and last resort supplier.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The regulatory policy with respect to the electricity sector is determined by the Ministry and to a certain extent by HERA. HERA is both a regulatory and supervisory body.

23 Scope of authority

What is the scope of each regulator's authority?

The Ministry prepares strategy and legislation with respect to the electricity sector and implements electricity laws enacted by the Croatian parliament. The Ministry also enacts different electricity by-laws and regulations. Furthermore, it supervises and reviews economic measures affecting the status of electricity undertakings, carries out activities relating to the construction of electricity facilities, proposes measures for the efficient organisation of electricity activities, etc.

HERA is a partially regulatory and partially supervisory body (see question 22). As a regulatory body, HERA grants different licences for the performance of energy activities, participates in electricity policy design, approves investment plans and various general acts rendered by electricity undertakings, renders methodologies, tariff rates, etc. As supervisory body, it supervises the performance of different energy activities (generation, transmission, distribution, supply of electricity and the organisation of the electricity market), the quality of services provided by energy undertakings, unbundling process, the application of all tariff systems, the degree of transparency of market competition, etc.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Ministry, as a government body, is independent of the electricity business and industry. However, in the process of preparation of electricity legislation, the Ministry follows and accepts proposals from electricity specialists.

HERA is an independent, non-profit institution established to regulate energy activities, and was founded in accordance with the Energy Activities Regulations Act. HERA is also independent from the electricity industry since members of the HERA Management Board (and members of their family) cannot be owners of any company in the energy business or perform any other activity in that sector that may lead to a conflict of interest. They are also independent of government officials since they cannot be members of parliament, members of local representative bodies or of the political parties' main bodies.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

HERA's decisions are either final or appealable to the Ministry, depending on the matter in question. If HERA's decision is final, it can only be challenged before competent administrative court. The Ministry's Appellate Decision can also be challenged before competent administrative court.

The Ministry's decisions are usually final. If the decision is final, it can only be challenged before a competent administrative court. Exceptionally, if it is provided by the law, the Ministry's decisions may be appealed back to the same Ministry, but also to the Appeal Senate as the second instance authority.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The European Commission, Croatian Competition Agency (CCA) and the Croatian Financial Services Supervisory Agency (HANFA) are responsible for acquisition and merger control in general, including the electricity sector (see question 27). HERA controls the eligibility of parties participating in acquisitions and applies a system of measures for protection of market competition (see question 28).

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Procedures, criteria and time limits for review of transfers of control are set out in the Competition Act (Official Gazette Nos. 79/2009 and 80/13) and the Act on the Takeover of Joint-stock Companies (Official Gazette Nos. 109/07, 36/2009, 108/12, 90/13, 99/13 and 148/13).

Pursuant to the Competition Act, the review procedure is performed by the CCA and European Commission. The procedure is initiated ex officio or upon the initiative of any natural or legal person, association the government or governmental and administrative bodies. Upon carrying out the procedure provided for by the Competition Act, the CCA issues a decision by which it either approves or refuses a transaction.

The CCA will block a transaction in the case of a prohibited concentration, referring to those undertakings that can significantly influence the prevention, restriction or distortion of competition. The CCA should issue a decree within three to eight months of the day the proceeding was initiated, depending on the type and complexity of the case in hand.

HANFA supervises the takeover of joint-stock companies and the application of the Act on the Takeover of Joint-stock Companies. If takeover irregularities are identified, HANFA may impose measures provided for by law such as declaring the takeover bid invalid or to instructing revision, supplementation or withdrawal of the takeover bid.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

HERA supervises, inter alia, the degree of transparency and market competition between electricity undertakings. In case of possible anticompetitive or manipulative practices, HERA has the obligation to notify, cooperate with and assist the CCA. The CCA is authorised to impose measures prescribed by the Competition Act for removal of the adverse effects of such practices. For severe infringement of the provisions of the Competition Act, the CCA may fine the undertaking up to 10 per cent of the past year's total income.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

There are no specific criteria that apply to the energy sector that define 'anti-competitive' or 'manipulative' conduct. Regulated energy activities are regulated on the principles of transparency, objectivity and non-discrimination, while market energy activities are regulated according to the principles of market competition. Therefore, the Competition Act applies to market energy activities. The Competition Act prohibits entering into agreements that directly or indirectly fix purchase or selling prices or any other trading conditions, limit or control the market, share markets or sources of supply, etc. Furthermore, abuse of a dominant market position is also prohibited, as well as concentration of undertakings.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

HERA has the power to withdraw licences for the performance of energy activities, for instance, if the supplier under public obligation does not apply the prices set by the tariff system. Furthermore, HERA has the power to request the HOPS or HEP-DSO to change its conditions and rules if it is necessary to ensure their non-discriminatory application. HERA also issues other legally binding decisions in accordance with the law.

Update and trends

On 1 January 2016 new Renewable Energy and High Efficient Cogeneration Act (Official Gazette No. 100/15) (Act), came into force as an umbrella instrument for the renewable energy. The Act replaced confusing and complicated legal framework that was discouraging for the investors. For the first time, production and use of electricity from renewable energy sources (including renewables support schemes) has been regulated in a single act. In this regard, the Act is considered a huge step forward for renewable energy projects in Croatia.

The act regulates production and use of electricity from renewable energy sources, project development, stimulates renewable energy production, introduces a project register, regulates power plant construction and high-efficiency cogeneration in Croatia, and encourages international cooperation in the field of renewable energy. Also, this is the first special act for the production of cogeneration electricity.

One of the main novelties in the Act is introduction of the market premium as the incentive model instead of the present feed-in tariffs model. Feed-in tariffs have been kept as an incentive model for smaller plants only, up to 30kW. Quotas for incentivising production of electricity from renewable sources shall be set by the government and incentives shall be awarded through public tenders.

Since a market premium model imposes higher risks for investors than the present feed-in tariff model because eligible producers will have to find their own customers for electricity produced, it remains to be seen what will be the final result of the new Act on the development of renewable energy projects in Croatia.

The Electricity Market Act prescribes fines for any misconduct, including anticompetitive or manipulative practices (for instance, if the HOPS or HEP-DSO unlawfully denies access to the transmission grid). The fines are imposed by the Ministry. In the case of recidivism, energy undertakings may be suspended from carrying out licensed activities for up to a year. The Electricity Market Act prescribes that a TSO or DSO may be fined up to 10 per cent of its total past year's income in the case of international discrimination of grid users.

According to competition law, the CCA issues legally binding decisions by which it prohibits anticompetitive conduct. Finally, the CCA is authorised to instigate misdemeanour court proceedings in the case of violation of the Competition Act.

HANFA is also authorised to instigate misdemeanour court proceedings in case of takeover irregularities.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no special requirements or limitations in the electricity sector regarding acquisitions by foreign companies.

The only limitation concerns the privatisation of HEP: the government may sell HEP's shares only in accordance with Croatian privatisation acts that regulate the privatisation procedure, control mechanisms, the proportion of shares that may be sold on the capital market, etc.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

There is no specific energy licence prescribed for operating of interconnectors. HOPS, as TSO and owner of the transmission network, has the right and obligation to maintain and develop transmission network, including constructing and operating interconnectors. Construction of possible interconnectors should be envisaged in the 10-year transmission development plan, approved by HERA (see question 9). Interconnectors should be developed and operated in line with international agreements and respective EU framework, including ENTSO–e (European Network of Transmission System Operators for Electricity) plans and codes.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Pursuant to the Electricity Market Act, interconnector access and cross-border electricity supply is governed by international agreements binding upon the Republic of Croatia. The HOPS must carry out the transit of electricity through the transmission network according to the terms and conditions stipulated in those agreements, and the technical capacity of interconnections.

Croatia has been a party to the treaty establishing the Energy Community since 1 July 2006. The treaty abolishes customs duties and quantity restrictions and creates a legal and institutional framework for a free transport and trade in electricity and gas. It also allows a single mechanism to be created for cross-border transmission or transport of interconnected energy for the whole of Europe. This treaty enabled Croatia to become part of the European energy market.

Based on the Energy Community treaty, the HOPS has adopted the Rules on Allocation and Use of Cross-border Transfer Capacities.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Under the Electricity Market Act, all commercial and financial transactions between the parent company (HEP dd) and HOPS (including

MACESIC PARTNERS LLC

Ivana Manovelo **manovelo@macesic.hr**
Miran Macesic **mmacesic@macesic.hr**

Pod Kaštelom 4
51 000 Rijeka
Croatia
Tel: +385 51 215 010
Fax: +385 51 215 030

Mihanovićeva 16
10 000 Zagreb
Croatia
Tel: +385 1 45 76 794
Fax: +385 1 45 76 795

loans), have to be made in accordance with market conditions. HERA is authorised to approve or deny each transaction.

With respect to HEP-DSO, HEP dd as the parent company approves annual financial plans and sets the limits of their possible debt, but cannot give instructions relating to their everyday operation. Cross-subsidisation of companies engaged in regulated activities and those engaged in market activities, and cross-subsidisation of activities within the same company are prohibited by the Electricity Market Act.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

For serious breaches of unbundling rules, misdemeanour proceedings may be initiated and a fine imposed. HERA supervises all activities mentioned in question 34 and may demand their implementation.

Czech Republic

Vít Stehlík and David Wilhelm
White & Case (Europe) LLP

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

The goals of the Czech Republic in the energy sector, including the preferred fuel mix, are outlined in State Energy Policy (SEP) which provides both a long-term as well as a short-term outlook on energy. The government may update the SEP from time to time.

In 2015, the Czech government approved formation of a long–awaited update of the SEP. The SEP introduces a strategy for the development of Czech energy for next 25 years. The amendment to SEP also identifies the mechanisms that ensure the national security in energy supply and especially proposes a wide diversification of resources and interest in maintaining the existing full independence in the field of heat and electricity supply exports of energy produced.

The primary legislative source is Act No. 458/2000, the Energy Act, which sets forth the rights and obligations of the entities active in the energy sector (electricity, gas and heating businesses).

Apart from the Energy Act, the renewable sources of energy and subsidy programmes are regulated in Act No. 165/2012, the Supported Renewable Sources Act. Further, numerous other acts regulate particular issues, mainly implementing EU legislation (such as energy efficiency requirements), or implementing regulations issued by the Energy Regulatory Office (ERO) (such as the pricing decisions, implementing and licensing ordinances) or the Ministry of Industry and Trade (MIT) (such as dispatching rules or rules on compensation in instances of unauthorised consumption).

The primary regulatory authority in charge of energy markets is the ERO. Its powers are described in question 23.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The Czech electricity market is composed of a single transmission system operator (TSO), distribution system operators (DSO) (including local DSOs not directly connected to the transmission system), electricity generators, the market operator, electricity traders and customers.

Conducting business (transmission, distribution, generation, market operation and trading) requires that an appropriate license be obtained from the ERO. Only one electricity transmission licence and one market operator licence is issued for the entire Czech Republic; for the rest, the number of licences that may be issued by the ERO is not limited.

Apart from the licence requirements, the TSO and the DSOs with over 90,000 connected customers must also comply with the unbundling rules. Specifically, the TSO ČEPS a.s. (CEPS) must hold a certificate of independence, issued by the ERO.

The Power Exchange Central Europe which trades certain products (such as futures, spot trades, day-ahead, intra-day) is regulated mainly by Act No. 229/1992, the Commodities Exchanges Act.

The company OTE, a.s. (OTE) serves as the market operator and, among other things, is responsible for organisation of short-term market with electricity, settlement of account imbalances, prepares and publishes a monthly and annual report on electricity market and facilitates payments of green bonuses and compensation payments to the mandatory buyers under subsidy scheme for renewable sources, as described in question 5.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The construction of a generation facility typically requires obtaining (i) environmental consents (and impact assessment pursuant to Act No. 100/2001, on Environmental Impact Assessment, if necessary) (ii) zoning and construction permits pursuant to Act No. 183/2006, Building Act and (iii) state authorisation for new generation facilities exceeding 1MW of output, issued by the pursuant to the Energy Act issued by MIT.

Specific types of electricity generation facilities may require additional consents or opinions from various authorities in the abovementioned process. The construction of a 50MW large generation facility would also typically require an integrated permit issued pursuant to Act No. 76/2002, on Integrated Pollution Prevention.

The construction of new nuclear power plant is subject to a specific permitting procedure coordinated by the National Office for Nuclear Safety.

An electricity generation licence is required for operation of the generation facility. Compliance with the licence conditions stipulated in the Energy Act and Ordinance No. 8/2016, on the Details of Awarding Licences for Business within Energy Industries, is examined by the ERO and a licence for a maximum of 25 years is issued if all conditions are met.

Effective as of 1 January 2016, the production of electricity in power generation facilities with an installed capacity of no more than 10kW is exempted from the generation licence requirement, provided the output of such facility is designated for the user's own consumption and no other power generation facility of a licence holder is connected to the point of consumption.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The grid connection policies are primarily regulated by the Energy Act, by Ordinance No. 16/2016, on Connection Conditions, and by the grid code issued by the TSO, as approved by the ERO. The TSO must provide grid connection services to anyone connected to the transmission network provided the pertinent conditions are fulfilled, unless capacity is demonstrably insufficient or unless the safe and reliable operation of the distribution or transmission grid is demonstrably jeopardised.

The mandatory contents of the application for grid connection are specified in the ordinance. The TSO may further require that a feasibility study for the grid connection be elaborated and submitted by the applicant.

Unless the grid connection cannot be approved on statutory grounds, the TSO will issue a grid connection contract or (if technical adjustments to the transmission network are required) a future grid connection contract. The applicant shall pay compensation for the costs of grid connection in the maximum amount of 50 million koruna within 15 days from the conclusion of the grid connection contract or

future grid connection contract. Failure to pay the compensation even within the additional deadline results in the termination of the grid connection contract or future grid connection contract and loss of capacity reservation.

Solar power plants are to be connected to the transmission network within 180 days from the contract conclusion or within one year if the plant output exceeds 30kW, provided that no technical adjustment of the grid is necessary.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The regulation of renewable energy sources in the Czech Republic is based on EU policy and the climate change goals of the Kyoto Protocol. These goals are further specified in the SEP, pursuant to which at least 13 per cent of the gross consumption of electricity shall be produced by renewable energy sources until 2020.

Massive investments into renewable energy sources were promoted mainly by Act No. 180/2005 (the Old Supported Sources Act) which introduced a system of subsidies. This act was superseded by Act No. 165/2012, Supported Renewable Sources Act, which changed the subsidy system.

There are two main types of subsidies, namely (i) one-off investment subsidy for heating plants using renewable sources and (ii) operating subsidy. The operating subsidies are in turn of two kinds: green bonuses and the feed-in tariff. Separately, private individuals may receive a one-off investment subsidy for the installation of photovoltaic panels on a family house, which may also include an electricity storage component.

A generator who opts for green bonuses earns the amount agreed in the contract with the electricity trader for the electricity delivered and an additional green bonus from the market operator. In the case of the feed-in tariff, the generator receives the feed-in tariff from the mandatory buyer, tendered or selected by the MIT.

Green bonuses and feed-in tariffs are determined by the ERO annually in its pricing decision, respecting the conditions stipulated in the Energy Act. Specifically, the green bonus or the feed-in tariff cannot exceed 4,500 korunas/MWh for the year in which the plant was put first into operation and an annual increase by at least 2 per cent is guaranteed, except for biomass or biogas plants. Further, the subsidy must ensure that a return on investment is achieved within 15 years. Finally, the feed-in tariff for the upcoming year cannot be below 95 per cent or over 115 per cent of the promulgated feed-in tariff; this rule does not apply if the return of investment would be demonstrably shorter than 12 years.

Due to the development of a large number of solar power plants and the falling costs of technology, the Supported Renewable Sources Act introduced a special charge on solar power plants constructed between 1 January 2010 and 31 December 2010. This charge is payable from 1 January 2014 for the entire duration of subsidy. The rate amounts to 10 per cent in the case of the feed-in tariff and 11 per cent in the case of green bonuses and is calculated based on the subsidy received. The charge was introduced by the Old Supported Sources Act, and applied to solar power plants constructed between 1 January 2009 and 31 December 2010, for electricity produced between 1 January 2011 and 31 December 2013. The rates amounted to 26 per cent in the case of the feed-in tariff and 28 per cent in the case of green bonuses from the subsidy received.

Finally, the operating subsidy scheme applies only to renewable sources put into operation by 31 December 2013, unless the renewable sources had a valid construction permit or authorisation of MIT as of 2 October 2013 in which case the subsidy was granted if such source was put into operation by 31 December 2015.

Producers which are incorporated in the form of a joint-stock company may receive the subsidy only if their shares are dematerialised (ie, registered in the Central Securities Depository). If the producer is a foreign entity, an affidavit certifying the ownership structure of all shareholders owning at least 10 per cent of the share capital must be produced, including information on the source.

Owing to the amendment to the Supported Renewable Sources Act, the calculation of the fee for the promotion of renewables will be as of 2017 based on the capacity of the circuit breaker. The change may be beneficial to energy-intensive industries. As of the date of this publication, no pricing decision of the ERO is available. In any case, the maximum fee is capped at 495 korunas/MWh for final consumers.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

The strategic goals of the Czech Republic in the energy sector and also climate change are in line with the climate and energy goals of the EU. The national climate change policy is defined by the National Programme To Abate the Impact of Climate Change in the Czech Republic (the Programme) from 2004, which sets the main national targets and measures to ensure the effective curbing of greenhouse gas emissions and to ensure sustainable development. The government is currently preparing an update to the Programme reflecting the latest developments in the energy sector; however, this update is still in progress and no data from the updated Programme are available as of the date of this publication.

Regarding the expected impact of government policy (including the field of climate change) on the types of resources that are used to meet electricity demand, the SEP generally anticipates that within the energy mix:

- the share of renewables and secondary sources will grow – primarily by energy from biomass and utilisation of waste energy;
- until 2025, the share of high-grade brown coal (major domestic energy source today) will drop substantially;
- brown coal, will to some extent be replaced by natural gas;
- the production of black coal will markedly decrease;
- the share of nuclear energy will grow (nuclear generation facilities today provide over 33 per cent of total electricity production), and may in the long term exceed 50 per cent of all electricity production, thus replacing a substantial part of coal-powered generation facilities;
- the share of natural gas will grow (in spite of a 20 per cent decline in natural gas consumption over the past 10 years); and
- the consumption of crude oil (other than for transportation purposes) will not increase.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Currently, there is no legislation explicitly promoting electricity storage directly in the Czech Republic.

Nevertheless, as electricity storage solutions cannot be effectively put into place on a mass scale without investments into smart grid projects (such as smart metering), promotion of investments into such projects by subsidies or otherwise exists and can be expected that certain support to promote electricity storage is likely to be put forward.

Recently, a rising trend in discussing the topic can be observed in the form of expert conferences and articles along with the research activities of various companies (including start-ups) and corresponding M&A activity. As noted above, private individuals may receive a one-off investment subsidy for the installation of photovoltaic panels on a family house, which may also include an electricity storage component.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Currently, no specific instrument encouraging the development of new nuclear power plants (NPP) is in place. However, the SEP describes nuclear sources as an important part of the generation mix, as outlined in question 6.

The company ČEZ, a.s. conducted a public procurement process, tendering the contractor for the engineering, design, and construction of two new blocks in the Temelin NPP. Owing to lack of price guarantees from the government, the public procurement process was terminated in April 2014.

Discussions regarding the extension of the existing NPPs (Temelin, Dukovany) are ongoing.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Generally, the procedure described in question 3 applies in respect of the construction permitting.

Recently, a proposal to amend the Building Act was introduced by Ministry of Regional Development. The proposal introduces a coordinated proceeding that aims to merge procedures to obtain building permit, zoning decision and the decision on the environmental impact assessment into one coordinated procedure. This should effectively accelerate the overall duration of permitting procedure. The amendment should become effective during 2017.

Subject to meeting the conditions of the Energy Act, the TSO may use third-party property for the construction and maintenance of the transmission grid. If a TSO fails to reach an agreement with the owner of the property, the necessary rights for constructing or maintaining part of the transmission grid could be expropriated for compensation pursuant to the procedure under Act No. 184/2006, Act on Expropriation.

Operating a transmission network requires an electricity transmission licence issued by the ERO. Currently, only one such licence for a period of 25 years may be issued for the territory of the Czech Republic (exclusive licence). Further, the TSO must comply with the unbundling rules, which require the TSO to hold a certificate of independence issued by the ERO.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Access to the transmission grid is briefly described in question above. Generally, two different transmission services are provided, domestic and cross-border.

Transmission services are provided on the basis of an electricity transmission contract concluded between the TSO and electricity generators, distribution system operators or any customer.

Charges for capacity reservation and grid use are determined by the ERO in its annual pricing decision. The cross-border transmission capacities are based on the allocation available for trading in yearly, monthly and daily auctions. Specific rules apply for intraday allocations.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

At the time of this publication, there is no specific tax benefit incentive for the expansion of the transmission grid. In general, according to the Energy Act, the TSO shall provide reliable operation and development of the transmission system.

The pricing mechanism described in question 12 should enable transmission grid investment in accordance with the 10 Year Network Development Plan.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The rates and terms for transmission services for the regulatory period commencing on 1 January 2017 shall be determined by the ERO in accordance with the rules set out in the Energy Act and Ordinance No. 194/2015, on the Price Regulation and Price Control Procedures within Energy and District Heat Industries (Pricing Ordinance).

The price for transmission services is composed of fees for capacity reservation and transmission network use.

Principally, the same regulatory formula set out in the Pricing Ordinance remains in effect during the regulatory period (fixed for five consecutive years). Each year, the ERO announces certain parameters of the formula and thus changes the fees. The ERO shall announce the parameters at the latest six months before the regulatory year commences. In exceptional cases (eg, correction of mistakes in input data), the ERO may modify the parameters in the regulatory period or regulatory year.

By 10 October, the ERO shall further announce to the TSO the calculated prices for transmission capacity reservation, transmission network use and system services.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

CEPS, as the TSO, is solely responsible for the safe, reliable and efficient operation, repairs and development of the transmission network. At the same time, the DSOs may not by their operation impair the safe operation of the transmission network (eg, when considering the applications for access to the distribution networks).

To assure the operation of the transmission system, CEPS acquires ancillary services as a means to provide the system services. CEPS acquires the ancillary services predominantly on the basis of contracts concluded on the basis of auctions. Currently, there are approximately 20 providers of ancillary services to CEPS.

Pursuant to the Energy Act and Pricing Ordinance, ERO calculates and announces the price of system services in its pricing decision. This price is then collected from the market participants and paid via regional DSOs (DSOs connected directly to the transmission network) and generators to CEPS.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Generally, the same permits are needed for the construction of the distribution network, as described in Section 3 above. Unlike the TSO, the DSOs are subject to legal unbundling unless the respective DSO serves fewer than 90,000 customers. In the case of the construction of rather small parts, simplified construction permitting procedures may be used, thus accelerating the development process.

Subject to meeting the conditions of the Energy Act, the DSOs may use third-party property for the construction and maintenance of the distribution grid. If a DSO fails to reach an agreement with the owner of the property, the necessary rights for constructing or maintaining part of the distribution grid could be expropriated for compensation pursuant to the procedure under the Act on Expropriation.

The DSOs are obliged to elaborate and comply with the national network development plan ensuring the stability and safe operation of the grid.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

The DSOs are required to grant access on a non-discriminatory basis to anyone requesting such access, provided that the conditions of the Energy Act are complied with. If, however, the distribution capacity is demonstrably insufficient or the safe and reliable operation of the distribution or transmission grid is at risk, the DSOs may refuse to grant such access.

Apart from the Energy Act, the access rules are regulated by Ordinance No. 16/2016, on Conditions on connection to power grid and by the grid code issued by the DSO, as approved by the ERO.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

As of the time of writing, there is no specific tax benefit incentive for the expansion of the distribution grid. In general, according to the Energy Act, the DSO shall provide reliable operation and development of the distribution system.

The pricing mechanism described in question 17 should enable distribution network investment in accordance with the 10 Year Network Development Plan. The investments are taken into account in the regulatory formula.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The rates and terms for distribution services for the regulatory period commencing on 1 January 2017 shall be determined by the ERO, in accordance with the rules set out in the Energy Act and Pricing Ordinance.

Generally, the price for very high voltage and high-voltage distribution services is composed of capacity reservation and distribution network use fees. Further, the price for low-voltage distribution services is composed of capacity reservation fees based on the main circuit breaker before the electricity meter and distribution network use.

Principally, the same regulatory formula set out in the Pricing Ordinance remains in effect during the regulatory period (fixed for five consecutive years). Each year, the ERO announces certain parameters of the formula and thus changes the fees. With the exception of certain parameters, the ERO shall announce the parameters at the latest five months before the regulatory year commences.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

An electricity trading licence issued by ERO is required for the sale of power to customers. Apart from the Energy Act, Ordinance No. 8/2016, on Licensing Conditions stipulates the precise requirements. An electricity trading licence is issued for a period of five years and the Energy Act does not set a maximum number of electricity trading licences that may be issued.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

The price for electricity for consumers is composed of two parts, regulated and unregulated part (wholesale price of electricity).

The regulated part is set by the ERO pursuant to the Energy Act and Pricing Ordinance and includes charges for transmission, distribution, system services, contribution for renewable energy sources, etc.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

The wholesale trading of power occurs mainly on the Power Exchange Central Europe and as such, no predetermined rates exist.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The Energy Act defines the supplier of last resort as electricity traders who belonged to the same group of companies with the respective DSO holding the licence in the relevant territory before the unbundling procedure in the Czech Republic was completed.

Upon notification from the market operator, the supplier of last resort suppliers shall supply electricity to the customers if the former supplier terminated its activities. Such obligation persists for no longer than six months and the consumer shall pay such supply of electricity.

Further, in the state of emergency, entities active in the energy sector have various obligations, such as the generators offering unutilised generating capacities.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The Czech Republic, as a member of the EU, has the obligation to abide by the Common Energy Policy of the EU. Within this policy, the regulatory framework is established by laws which are passed by the Parliament of the Czech Republic, in the vast majority of cases based on government bills. The government bills are mainly prepared by the MIT in cooperation with the Ministry of the Environment, but all government departments may influence the bill. The bill is then negotiated, commented on and fine-tuned in parliament, and subsequently voted on. If the bill passes, it becomes a law binding on authorities, individuals and corporations.

The government also issues the SEP which is binding only on the authorities; however, it may also impact the private sector through the regional development policy, which in turn affects zone planning.

The ERO is also responsible for setting the policy (by issuance of ordinances) within the framework of legislation adopted by way of the above-described process.

23 Scope of authority

What is the scope of each regulator's authority?

The parliament and the government are responsible for the determination of the policy on a general level (ie, passing laws and issuing the SEP).

Only the MIT has the power to authorise the construction of power plants with a total installed capacity of 100kW or more. During the authorisation process, the MIT assesses, among other things, the contemplated power plant's compliance with the SEP, the national plan for the use of renewable energy, the prospects of infrastructure development and the power plant's influence on the balance of supply and demand for electricity. The MIT also has the right to comment on the regional development policy and its principles, provide a binding opinion on the 10-year investment plans of the operator of the electricity transmission infrastructure and a binding opinion on the construction of the electricity transmission infrastructure and power plants with a total installed capacity of 100kW or more.

The ERO's authority spans price regulation, the development of competition in the energy industry, energy market oversight, the promotion of renewable and secondary energy resources, the support of decentralised energy generation and the protection of the rightful (legitimate) interests of regulated licensees. For example, it determines regulated components of the electricity prices, approves or sets the rules of operation of electricity transmission infrastructure and distribution networks, and the terms and conditions of the market operator, and approves the development plan of the electricity transmission network in cooperation with the MIT.

The State Energy Inspection is responsible for enforcing energy management obligations of the participants in the energy market pursuant to Act No. 406/2000, on energy economy.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The MIT is a part of the government. The head of the MIT, the minister, is nominated by the Prime Minister and appointed by the President.

The ERO is an independent, apolitical central state authority established by law. By law, it is independent of any and all political bodies (the President, the parliament, the government), executive bodies, individuals and corporations.

An amendment to the Energy Act will become effective as of 1 August 2017. According to the amended Energy Act, the ERO will be presided over by the board of the ERO. The board of the ERO consist of five members, one of which is appointed as the chairman of the board. Members and the chairman of the board are nominated by the government on the basis of proposal from the Minister of Industry and Trade. Members will be in the office for a five-year term, and the chairman of the board shall be appointed for a maximum three-year term.

The ERO is funded collectively by the energy market participants, which makes it less dependent on the state budget and political pressure.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Decisions binding on individual entities issued by the above authorities may be challenged by an appeal to the very authority that issued them; the process is governed by Act No. 500/2004, the Administrative Code. If the appeal is not successful, the appellant may file an administrative action with an administrative court. A full-court review principle allows courts to fully review a decision handed down by the relevant authority. Further, the court's decision may be appealed to the Supreme Administrative Court on points of law; however an appeal on points of law does not suspend the legal effects of the previous decisions.

The ERO also decides on commercial disputes between two or more businesses participating in the energy market and disputes between businesses in the energy industry and consumers. There are also ordinary remedies available against ERO decisions in these matters. Moreover, the matter, even if finally decided by the ERO, may be submitted to a civil court. The matter is then reviewed by the courts which have civil jurisdiction (ordinary appeal and an extraordinary appeal on points of law are available).

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The Office for the Protection of Competition (OPC) is exclusively competent to decide on all competition matters in the Czech Republic, including acquisitions. The OPC cooperates with other regulators which may provide insight into the industries they regulate. In this case, the OPC closely cooperates with the ERO in order to assess the impacts of transactions between competitors on the energy markets. In addition, since the Czech Republic is a member state of the EU, the European Commission, rather than the OPC, is competent to decide on mergers if the relevant thresholds are exceeded.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Under Czech law, a concentration is subject to OPC approval if the combined aggregate net turnover generated by all participating undertakings in the Czech Republic is more than 1.5 billion korunas, and the aggregate net turnover generated in the Czech Republic by each of at least two of the undertakings is more than 250 million korunas. A concentration that does not exceed these thresholds is nevertheless subject to approval if both the aggregate net turnover of the target generated in the Czech Republic is more than 1.5 billion korunas and the worldwide aggregate net turnover of another participating undertaking is more than 1.5 billion korunas.

The Czech Competition Act does not provide for any deadlines within which a notification shall be made; however, without the OPC's approval, the concentration in question may not be implemented, that is, no rights or powers arising from a non-notified concentration may be exercised until approval is granted.

The application, which is subject to a 100,000 koruna fee, must be submitted in Czech and must contain, among others, the reasoning behind the concentration and, in particular, relevant arguments justifying the conclusion that the intended concentration would not significantly impede competition in the Czech Republic; and modifications or commitments aimed at preserving effective competition in the relevant market in the Czech Republic, if proposed by any of the undertakings concerned.

If the OPC concludes that the notified concentration does not require its approval, it shall issue that finding by means of a decision within 30 days of the commencement of the proceedings. Similarly, if the OPC finds that the notified concentration, although requiring its approval, is not capable of significantly impeding competition in the Czech Republic, it shall approve the concentration within the same period.

If, within 30 days of the commencement of the proceedings, the OPC does not render its decision or inform the applicant that a more thorough review of the transaction is required, the notified concentration is deemed to have been approved upon the expiration of the last day of such period. The OPC may require that the applicant submit further evidence related to the concentration, in which case the 30 days period is suspended until the applicant has complied with such request.

Similar to the proceedings before the Commission described above, the Czech Competition Act also provides for a simplified procedure in cases that do not give rise to serious competition concerns. This typically applies to conglomerate mergers (ie, concentrations of undertakings that are active in different markets and whose activities only slightly overlap). In the simplified procedure, the notifying party submits a simplified application, which requires much less information in comparison to the regular questionnaire. Moreover, the period of 30 days described above is reduced to 20 days.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

It is one of the ERO's obligations to analyse competition on the energy market. However, the ERO itself is only authorised to prosecute anticompetitive or manipulative practices directed against consumers, and cases of violation of price regulation. All other cases of anti-competitive behaviour (ie, anticompetitive practices damaging other competitors) are prosecuted by the OPC. The European Commission prosecutes cases damaging or distorting the EU internal market.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Behaviour considered to be anticompetitive conduct damaging consumers is defined in Directive 2005/29/EC concerning unfair business-to-consumer commercial practices and in Czech Act No. 634/1992, Protection of Consumers Act, and may consist of aggressive or misleading commercial practices towards consumers. The ERO is responsible for prosecuting and preventing such practices.

Pursuant to articles 101 and 102 of the Treaty on the Functioning of the EU, other cases of anticompetitive behaviour include behaviour whose purpose or effect is the distortion, prevention or restriction of competition. Such behaviour may take the form of agreements between competitors, decisions adopted by an association of competitors, simple concerted business conduct or abuse of dominant position. Czech laws define anticompetitive behaviour in a similar, yet more detailed manner.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The relevant authorities may in all cases impose fines on the perpetrators of anticompetitive behaviour. Agreements or concerted business conduct which are in violation of the principles or goals of competition are invalid by law.

In terms of mergers (concentration of competitors) under Czech law, a concentration may not be implemented prior to the effectiveness of OPC approval. Until such approval has been granted, the relevant concentration is virtually ineffective in the sense that the acquiring undertaking may not effectively exercise control (voting rights, etc) over the acquired undertaking. However, the failure to refrain from carrying out an unapproved concentration does not render the transfer of the controlling shareholding invalid (void).

Update and trends

During recent years, regulated entities have had to accommodate new requirements of EU regulations and directives (such as the Third Energy Package, REMIT, Energy Efficiency). Combined with the declining price of electricity, this led to significant changes in the industry and further motivated the traditional energy companies to re-evaluate their business models. Decentralised power generation units (incl. those using new energy sources, such as landfill gas or biomass) and new sources of revenues (such as services helping consumers to achieve energy efficiency, development of smart applications and metering, as well as providing financing, insurance and consulting services to consumers) are just a few examples of this trend. Upcoming changes in management of ERO may foreshadow a different approach of ERO towards market regulation. The current set-up where the chairman of ERO is nominated by the Czech president may not fully meet EU requirements on independence, impartiality and transparency of the national regulatory authority as strong and extensive powers are concentrated solely with chairman of ERO. This situation is also unique, since most EU member states already have the requirement on pluralistic decision of the national regulatory authority transposed into their respective laws. This will change in 2017 when the newly established board of the ERO will be nominated as a collective body by the Czech government.

Lastly, a topic of new tariff mechanism determining, among others, consumer's contribution to renewable sources support is currently being discussed. Statutory framework for the change was adopted by amendment to Supported Renewable Sources Act. Contribution will be based on the nominal current of the main circuit breaker before the electrometer, as opposed to actual consumption based on which the contribution is determined now. Nevertheless, it is envisaged that the end consumers would not in any case pay a higher contribution in comparison with the current regime.

In addition, if the OPC finds that the undertakings have implemented the concentration without due notification, it may impose on them the duty to (i) sell the shares or interests in the acquired undertaking; (ii) transfer the acquired enterprise or a part thereof; or (iii) rescind the underlying agreement. The OPC may further impose on the infringing undertakings monetary sanctions up to the amount of 10 million koruna or up to 10 per cent of the infringing undertaking's turnover for the previous year. The latter sanctions may be imposed repeatedly.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

As a result of unbundling rules, acquiring an interest in certain entities active in the energy sector may also be subject to additional approvals and independence certification procedures for entities active in the energy sector. These limitations would apply to domestic and international buyers.

Further, the Czech Republic wishes to retain full ownership of certain entities, such as OTE and CEPS, and majority ownership of ČEZ, a.s., thus limiting the possibility of acquiring shares or control in these entities.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

No special rules on constructing and operating interconnectors have been adopted in the Czech Republic so far. General provisions on the construction of electricity network are applicable in this area. Note that the EU set the target of achieving interconnection of at least 10 per cent of installed electricity production capacity for all member states. The Czech Republic achieved a 17 per cent interconnection level in 2014 (Source: ENTSO-E, Scenario Outlook and Adequacy Forecast 2014).

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

The interconnection issues are primarily regulated by the Energy Act, by Ordinance No. 16/2016, On Connection Conditions, and by the grid code issued by the TSO, as approved by ERO. The TSO must provide interconnection services to anyone connected to the transmission network provided the pertinent conditions are fulfilled, unless capacity is demonstrably insufficient or unless the safe and reliable operation of the distribution or transmission grid is demonstrably jeopardised.

Cross-border transmission services (yearly, monthly and days ahead allocations) are provided on the basis of auctions organised by the Central Allocation Office GmbH under its rules.

Since 2012, the CZ-SK-HU Market Coupling (market coupling of Czech, Slovak and Hungarian day-ahead electricity markets) has been in operation.

Further, EC Regulation 714/2009 sets forth the conditions for access to the network for cross-border exchanges in electricity. Obligations under the regulation are further specified in network codes (NC) developed by the European Network of Transmission System Operators for Electricity issued in the form of EU regulations. An important NC with respect to interconnectors is EU Regulation 2015/1222, establishing a guideline on capacity allocation and congestion management.

EU Regulation 347/2013 on guidelines for trans-European energy infrastructure (PCI Regulation) introduced projects of common interest (PCI). Subject to determination by the EU Commission, certain

WHITE & CASE

Vít Stehlík **vstehlik@whitecase.com**
David Wilhelm **dwilhelm@whitecase.com**

Na Příkopě 14
110 00 Prague 1
Czech Republic

Tel: +420 255 771 111
Fax: +420 255 771 122
www.whitecase.com

infrastructure projects relevant to overall infrastructure capacity and security of supply may be awarded the PCI status. PCI Regulation aims to facilitate the timely implementation of PCI projects by streamlining, coordinating and accelerating permit granting processes and by enhancing public participation. In the Czech Republic, this is currently achieved by means of coordinated scheme envisaged by the PCI Regulation, where individual permitting proceedings and relevant deadlines are supervised by the MIT. Currently, six construction projects of 400kV lines within the Czech Republic are considered as PCIs. Once the proposed amendment to the Building Act and relevant laws are effective, the coordinated proceedings under PCI Regulation will be reflected in Czech legislation and the permitting procedure of PCIs will be subject to coordinated proceeding (with an environmental impact assessment, if required) under the Building Act.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Pursuant to Act No. 90/2012, Business Corporations Act, transactions between related entities are generally no longer strictly regulated from the corporate point of view.

The only exception applies to joint stock companies acquiring property whose value exceeds 10 per cent of its registered capital from their founder or shareholder within two years from their establishment. Such transactions must be approved by the general meeting of shareholders and the consideration may not exceed the property value, as determined by the appraiser; these conditions do not apply if the transaction is conducted within the ordinary course of business, under the supervision of a regulatory authority or on the regulated market.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

If the aforementioned formal restrictions are not fulfilled, the company's shareholders are entitled to claim the invalidity of the respective transaction in civil courts. Moreover, the failure to comply with certain formal restrictions represents a breach of the obligation to act with due managerial care by the members of the statutory body of the company, resulting in potential claims of damage incurred by the company. Such damage can be claimed by the company itself or, in cases determined by law, the company's creditors.

The sanctions for non-compliance are of a private law character and may include the invalidity of the transaction and reimbursement of damage.

Equatorial Guinea

Maite C Colón and Juanita Avomo Mikó Nkene*

Centurion LLP

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

In essence the policy and legislative framework that has been implemented in Equatorial Guinea has been in favour of a state-run electricity industry. Although the electricity sector of the country has been regulated throughout the years by various official documents, specific rules on electricity have never been developed. Arguably, existing legislation does not have the capacity to effectively order or protect the obligations and interests of the various participants in the sector such as producers, consumers and the state.

Law No. 3/2002 of 21 May establishes the electricity tariffs in Equatorial Guinea and is considered at present the most important piece of legislation on the subject, establishing the preferential regulation framework of the electricity sector and identifying costs of production. It must be noted, however, that this regulation and the included tariffs have not been modified since 2002 when they were implemented.

Currently, the Ministry of Mines, Industry and Energy (MMIE) is the governmental entity in charge of the drafting and implementation of public policy in relation to the national electricity sector. Private companies that obtain licences from the ministry can enter into business relationships such as partnerships with state-owned companies engaged in the electricity market. Further, the MMIE is currently preparing a draft bill which seeks to materialise as the legal instrument to regulate the activity in the energy sector.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

In general, the government is the only entity that participates in the organisational structure for the generation, transmission, distribution, and sale of power through its majority state-owned agency, SEGESA.

All generating facilities are owned by the state and operated by SEGESA Holdings, or by third parties pursuant to a licence granted by the MMIE. Generation activities can be pursued by, per the MMIE's policy, SEGESA Holding, SEGESA Generation or by any duly licensed third party (although there are none).

Additionally, electricity transmission is assigned to SEGESA Transmission, which, as the name mandates, was specifically created for this purpose. SEGESA Transmission has exclusive control of the electricity transmission networks in place in Equatorial Guinea, which underwent recent modernisation finalised in 2011.

Similarly to the generation of power, distribution is tasked to SEGESA Holdings, and all the distribution facilities existing in the country are state-owned and operated by SEGESA Holding or by a duly licensed third party.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

This particular question in terms of construction is not applicable under the Equatorial Guinea system owing to the fact that state-owned agencies are responsible for such tasks. However, private companies are able to own and operate generating facilities subject to authorisation by the MMIE. Currently, SEGESA Holdings, in conjunction with its affiliates, coordinates the integrated operation of the main system.

4 Interconnection policies

What are the policies with respect to interconnection of generation to the transmission grid?

To establish interconnection of generation to the transmission grid, parties must enter into a connection agreement for access and use of the intrastate transmission system. Both parties, following the format of a Model Connection Agreement, must agree to this document. The aforementioned agreement must contemplate provisions relating to compliance with the Equatorial Guinea Grid Code Connection Conditions; inter-connection points; details of connections; details of the equipment to be used at connection points by both parties; technical requirements for connected equipment and commercial arrangements; details of any capital expenditure arising from necessary reinforcement or extension of the transmission system data communication and demarcation of the same between the transmission licensee and SEGESA Generation or SEGESA Transmission; a site responsibility schedule; general philosophy and guidelines on protection; protection systems; system recording instruments; and communication facilities.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Yes. Each company in the SEGESA group must, within the scope of its activities, include optimisation of resource portfolios. This includes objectives regarding the use of renewable resources and demand-side resources.

According to Clean Energy Info Portal's Energy Profile, Equatorial Guinea's daily horizontal irradiation is 2.0–2.5kWh/m2/day, primarily owing to the dense biomass coverage in Equatorial Guinea. This solar potential is generally unsuitable for large-scale power generation, but could be exploited for thermal water heating.

Moreover, Equatorial Guinea is estimated to have 2,600MW of hydropower potential, half of which may be economically exploitable, indicating a good potential for further hydropower uptake. However, in 2008, hydroelectricity had an installed capacity base of 1MW, which constituted the total installed capacity for renewable energy in the country.

Sites have been identified in the south of the mainland as having average wind speeds of ~6.0m/s at 80m, indicating good potential for wind power generation. However, as yet, there are no major wind power projects operational in the country.

Further, the government has conducted studies in the Annobon and Corisco islands for prospective solar and wind energy projects after both islands proved to be inadequate for the production of hydropower.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

At present, government policy is not directly contemplating climate change issues. However, there are strong efforts by the government to tap into cleaner sources of energy that the country currently produces, such as, natural gas, which is cheaper and key to addressing the ever-growing electricity demands in the country.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

See gettingthedealthrough.com.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Current government policy does not contemplate or incline toward the development of new nuclear power plants.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Owing to high government ownership of the industry, the construction of a network facility must be approved by the MMIE. The construction must take into account the environment, avoiding any kind of negative impact on natural resources.

Because electricity power generation, transmission and distribution installations are declared matters of public interest, mandatory expropriation of the goods and rights necessary for their establishment is possible.

The principal ongoing requirements for the operation of a transmission network are: financial capability; managerial and technical capability; records of experience in relevant activities; sufficient technical capability; and demonstrated ethical and prudent business practice experience and appropriate safety standards.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Transmission must be consistent with the rules and regulations governing the availability of service and serve all customers located within Equatorial Guinea on a non-discriminatory basis.

11 Government incentives

Are there any government incentives to encourage expansion of the transmission grid?

No specific incentives to encourage expansion of the transmission grid have been established. However, the country's Investment Regulations provide incentives and benefits to foreign investors in order to attract more investment to the country on any sector of economy.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

Transmission services must be operated in accordance with tariffs approved by the MMIE.

Transmission charges and other related charges are payable to:

- SEGESA Transmission Company; and
- the State Load Dispatch Centre.

13 Entities responsible for grid reliability

Which entities are responsible for grid reliability of the transmission grid and what are their powers and responsibilities?

The MMIE is responsible for overseeing everything that encompasses the energy sector. Trading between generators and suppliers is performed by SEGESA Generation and SEGESA Transmission.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

For the authorisation to construct and operate distribution networks, there must be a proposed plan for the construction, operation and maintenance of the system. The plan must be submitted to the MMIE for approval and once approved the facilities cannot be modified (constructed, reconstructed, installed, replaced, expanded or upgraded) without the prior consent of the MMIE.

Every two years, an operator can propose to the MMIE a system planning document (system plan) based on sufficient and relevant input from its affiliate companies which supplements or complements the national electrification plan and sets out a specific plan for new construction and expansion of the system for up to five years.

The construction of the transmission grid must take into account the environment, avoiding any kind of negative impact on natural resources. However, because electricity, power generation, transmission and distribution installations are declared matters of public interest, mandatory expropriation of the goods and rights necessary for their establishment is possible.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution nework and what requirements must be met to obtain access?

The authorisation of and main ongoing requirements to operate electricity distribution systems have as of yet not been fully developed or established in Equatorial Guinea. At present, the state-owned electricity company is the only entity that generates, distributes and sells electricity within the country. Currently, plans to open the electricity market to private investors are being considered.

However, the general conditions in order to grant any contractor the authorisation to perform activities in any sector in the country shall apply, such as: financial capacity, expertise and experience in the correspondent sector of activity, as well as the requirement to meet international standards within the sector.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

See gettingthedealthrough.com.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The MMIE must approve rates and tariffs in accordance with the law. The price of the service is based on consumption and demand measured in metres at the interface between the service provider and end-user. The MMIE must approve the rates and tariffs for the services.

SEGESA Transmission owns all the transmission and distribution wire services and is authorised to conduct dispatch operation consistent with internal protocol duly approved by the MMIE. Other companies can be licensed by the MMIE to perform distribution operations if they meet the requirements established by law.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

As SEGESA National Company is the one providing this service at the moment, there are no specific regulations in Equatorial Guinea regarding this question. However, as explained before, the MMIE is the designated authority to regulate the conditions of this market.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

As previously stated, transmission services must be operated in accordance with tariffs approved by the MMIE.

The Law No. 03/2002 of 21 May sets out the current electricity tariffs. It is the most important piece of legislation developed to date and can be considered the preferential regulation of the electricity sector. The framework established by this law is arguably incomplete and outdated as it has not been updated since 2002. However, as mentioned before, the MMIE is currently working on preparing a draft bill, also referred to as the New Electricity Act of Equatorial Guinea, which intends to revitalise public policy in terms of electricity and address these issues.

Nonetheless, please note that at present time, the provisions of Law No. 03/2002 dated 21 May 2002 are still applicable. The rates stated therein are generally applicable to the whole country, and its calculation is made by taking into account the level of consumption, the kind of activity and the voltage used.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

The rates and conditions of sale regulated at the consumer and wholesale levels are determined by the MMIE.

Specifically, at the consumer level, the accounts must accord with monthly meter readings. Accounts must also be recorded according to the electricity supply contract signed between the company, the distribution companies and the customer. The MMIE is guided by the following considerations:

- requested revenue requirements are fair and reasonable in the light of the objective of continuity of supply and affordability;
- the proposed tariff regimes balance the interests of all stakeholders, including current and potential consumers, government and licensors; and
- as far as wholesale, a commercial company can purchase energy at the bulk supply rate and sell to customers according to an approved rate schedule. The rates reflect the cost of power purchase, distribution costs and retail supply.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Owing to the fact that up to now only the national company SEGESA has provided electricity services, the obligation to serve the public interest is inherent to its activities. The government's plan to privatise the company and to open the sector to private investors also takes into account the principle of public service, understood as the requirements for SEGESA, to supply the local market and also the growth of the project. This means that the government will seek the development of the sector to the extent that the companies involved in the sector are able to supply other countries within the region.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

As explained above, the regulating authority for electricity in Equatorial Guinea is the MMIE. SEGESA is the national electricity company, controlled by the MMIE. However, private companies are allowed to contract with the government to provide electricity by obtaining licences. Nonetheless, although private parties may be involved in the power sector, the MMIE is still the governing body of all electrical operations with oversight authority of all the country's power.

The MMIE has the absolute authority over the country's power sector in both Bioko Island via Malabo and the mainland or Rio Muni area through Bata. Currently, the government is proposing to delegate regulatory authority of electricity to a new governmental entity called the Electric Energy Regulatory Agency.

23 Scope of authority

What is the scope of each regulator's authority?

As stated earlier, MMIE is the principal regulator of electricity. It regulates all matters relating to minerals, petroleum, industry and energy.

The regulation authority of the MMIE includes or extends to all operations related to the production, transportation, distribution and commercialisation of electricity in Equatorial Guinea.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

As previously mentioned, the MMIE is the only regulator. The government of Equatorial Guinea endows its powers, including electricity regulation, to it and as such the MMIE has the plenary power to regulate this sector.

Independent of power regulation, the MMIE is charged with the management of other sectors of the government such as the exploration and exploitation of oil, natural gas, hydrocarbons, and all other natural resources on land and within the marine borders.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

There is no remedial mechanism in place to circumvent the decisions or determinations of the MMIE. All acts and decrees of this legislative body are final and are not subject to appeal by a private party. However, there are instances to where presidential approval may serve as a check on the decisions of the MMIE or any other ministry. This, however, would depend on the nature of the transaction.

At a general level and applicable to any act of any government officer, Law No. 05/1991 allows individuals and corporations to present claims or appeals against the acts or decisions of any authority. Those claims can be filed before the President of the Republic, the Chamber of Representatives, the Ministerial Council, Delegate Commissions of the government, ministers, courts, Human Rights Commission, governors and others.

The claim can be filed initially before the authority that issued the act or decision, and that authority will have a legal obligation to resolve the matter. If this authority does not solve the claim or petition, the petitioner may appeal to the hierarchically superior organ of said authority.

In this case, provided that a minister issued the decision or act, the superior organs would be, in ascending order, the Delegate Commissions of the government, the Ministerial Council, the President of the Republic and the Chamber of Representatives.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The relevant statute, Law No. 03/2002 of 21 May, does not expressly give the MMIE the power to regulate mergers, acquisitions and antitrust matters in relation to the electricity sector. However, because of its broad regulating authority, it may generally be taken that the MMIE has the power to do so at its own discretion.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

See question 26.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

See question 26.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

See question 26.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

See question 26.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no restrictions concerning foreign ownership of electricity companies in Equatorial Guinea. However, typically, the law in Equatorial Guinea requires a local equity ownership of 35 per cent. This means that at least 35 per cent of the company must be owned by local residents of Equatorial Guinea. There are resources a foreign entity may use in order to find local ownership for a new business formation. However, if a company wanted to acquire the interest of another party in a company formed in the country, it would need to be mindful of the 35 per cent reservation to locals when measuring the potential stake in the company after the transaction.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

See gettingthedealthrough.com.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

This question is not applicable in the jurisdiction because Equatorial Guinea only uses its own electricity and does not import or export power. Therefore, there has not been a reason to enact any law concerning this.

However, one of the objectives of the Equatorial Guinea government within the Horizon 2020 plan is to be able to connect to countries in the region such as Cameroon, Gabon and Nigeria.

Indeed, Equatorial Guinea is a member of the Central African Energy Pool, which is a cross-border energy exchange programme aiming to provide a better electric coverage to rural populations of bordering regions.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Transactions between affiliates must comply with the agreements signed between the parties and the rules set out by MMIE. However, the law is silent as to the specifications of transactions between utility provides and their affiliates.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

See question 34.

* *The content of this chapter is accurate as at October 2015.*

Centurion LLP

Maite C Colón **maite.colon@centurionlawfirm.com**
Juanita Avomo Mikó Nkene **juanita.avomo@centurionlawfirm.com**

K-3, Carretera de Aeropuerto
Malabo
Bioko Norte
Equatorial Guinea

Tel: +240 222 781 613
www.centurionlawfirm.com

Finland

Katri Joenpolvi, Ville Hailikari and Mikko Pirttilä

Krogerus

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Securing energy supply, competitive energy prices and meeting the European Union's common energy and climate goals are core elements of policy in the Finnish electricity sector. Finland's policy in the electricity sector has focused on gradually liberalising the market, increasing the efficiency of operations and integrating Finland's electricity market into the Nordic and wider European markets. Security of supply and competitive electricity prices have traditionally been viewed as important goals.

Finland's Nordic climate, geographically isolated location, comparatively high consumption of electricity and the goal of promoting renewable energy have all played important roles in the electricity sector.

Legislation relating to the electricity sector is included mainly in the Electricity Market Act (588/2013, as amended (the EMA)) and the Decrees and Orders in force issued based on it and the previous Electricity Market Act. The EMA, which entered into force on 1 September 2013, replaced the old Electricity Market Act and implemented EU's third Energy Package, most importantly Directive 2009/72/EC concerning common rules for the internal market in electricity. In addition, the new EMA contains numerous national amendments especially relating to distribution network operations.

Other important national statutes in the electricity sector are the Electricity and Natural Gas Market Supervision Act (590/2013, as amended), the Act on Aid to Production of Electricity from Renewable Sources (1396/2010, as amended, the Feed-in Tariff Act) and the Competition Act (948/2011, as amended (the Competition Act)), among others.

As Finland is an EU member state, EU legislation such as the Regulation on Wholesale Energy Market Integrity and Transparency (EU Regulation No. 1227/2011 (REMIT)), Regulation on conditions for access to the network for cross-border exchanges in electricity (714/2009) and Commission Regulation on submission and publication of data in electricity markets (543/2013) are directly applicable.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The main sources of electricity are nuclear power (amounting to approximately 27 per cent of total electricity generated in 2015), hydropower (approximately 20 per cent) and biofuels (approximately 13 per cent). Electricity is also generated using coal, natural gas, waste fuels, peat and wind power. Over 70 per cent is generated using carbon-free energy sources. A national special characteristic is that many generating companies are jointly owned by several undertakings and the purpose of such jointly owned generating companies is to produce energy for the owners at cost instead of making a profit (the Mankala operating model, where tax advantages are the driving force).

Electricity consumption in 2015 amounted to 82.5 terawatt hours (TWh), while the total amount of electricity generation was 66.2 TWh, meaning that nearly 20 per cent of the electricity consumed was imported.

The market for sale of electric power has been fully liberalised. There are over 70 retail suppliers and all retail customers, including consumers, have been free to purchase electricity from any provider of their choice since 1998. A major part of the wholesale trade in electricity takes place in the Nord Pool Spot power exchange, whose Elspot (day-ahead) and Elbas (intraday) markets set the market price for electricity in the Nordic countries. There are numerous parties active in the wholesale markets. In addition, electricity is traded on the over-the-counter market and directly between buyers and sellers.

Transmission networks are operated by the national transmission system operator Fingrid Oyj (Fingrid). Since 2011, the Finnish state has held a controlling stake in Fingrid.

There are over 80 regional and local distribution system operators in Finland. Distribution networks are owned by regional and local energy companies, public parties, such as municipalities, and to an increasing extent, by private domestic and foreign investors who specialise in infrastructure investments.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Depending on the type of facility, various notifications as well as environmental and construction permits and authorisations are needed to construct and operate electricity generation facilities. The Energy Authority must be notified of plans to construct, and the commissioning of, all electricity generation facilities exceeding 1MVA.

Legislation regarding the authorisations and permits required to construct and operate generation facilities are included in various different acts including, among others, the Land Use and Building Act (132/1999, as amended), the Environmental Protection Act (527/2014, as amended), the Act on Environmental Impact Assessment Procedure (468/1994, as amended) and the Water Act (587/2011, as amended). Legislation regarding authorisations for nuclear facilities are included in the Nuclear Energy Act (990/1987, as amended).

The most important authorities in environmental and construction permit matters are, depending of the permit in question, the municipal building supervision authorities, regional Centres for Economic Development, Transport and Environment, Regional State Administrative Agencies, the Energy Authority and Ministry of Employment and the Economy (MEE).

Mergers and the setting-up of joint ventures may be subject to merger control clearance from the relevant competition authority (see question 27).

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Connection to the transmission grid is based on the principle of open and non-discriminatory network access (third-party access principle). Pursuant to the EMA, Fingrid is under an obligation to connect all generation facilities to the grid that fulfil the technical requirements and pay the relevant fees. In practice, temporary capacity restraints in a certain area, along with Fingrid's right to determine the appropriate

connecting spot, may sometimes cause uncertainties that are best avoided by engaging in discussions with Fingrid as soon as possible during the process.

Grid connection issues are supervised by the Energy Authority, and parties wishing to connect to the transmission grid may ask the authority to investigate whether the EMA's network access provisions have been complied with. The Energy Authority is obliged to issue decisions on such matters within two months, which may be extended by a maximum of two months if the Energy Authority requires more information to investigate the matter, or further upon consent of the party who submitted the request.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Sustainability and predictability are characteristic of energy policy objectives. In recent decades, Finland has been among the leading industrialised countries to use renewable energy, bioenergy in particular.

Construction of generation facilities and production of electricity by wind power, forest biomass, wood and landfill gas has been promoted by the feed-in-tariff subsidy policy. Certain other renewables, such as solar power, have so far been left out of the currently subsidy scheme laid out in the Feed-in Tariff Act. The Energy Authority administers and grants the feed-in-tariffs. Wind power projects in Finland are entitled to have the subsidy until the combined capacity of the generators admitted to the feed-in tariff system exceeds 2,500MVA. This threshold has currently been reached, subject to handling of the still pending applications.

Currently, a new subsidy scheme for renewable energy sources is being prepared, as a part of the preparation of a new national energy and climate strategy, and is due to take effect, at the earliest, early 2018. The detailed content of the new subsidy scheme still remains unknown as of today (see 'Update and trends' section).

Finnish tax legislation provides possibilities for enterprises using alternative energy sources in the form of, for example, simplified excise taxation (for small-volume producers of biofuel oil) and possibilities to apply for a refund (for energy-intensive enterprises).

Finland has traditionally aimed to produce as much electricity as possible through combined heat and power plants (CHP production). Finland ranks among the top nations internationally in CHP production. The key principle of energy taxation legislation is that the fuels consumed in the production of electricity are exempt from tax and the fuels consumed in the production of heat are subject to tax. According to the Act on Excise Duty on Electricity and Certain Fuels (1260/1996), in cases where light fuel oil, biofuel oil, heavy fuel oil, coal or natural gas is used in a combined production plant of electricity and heat, the amount of carbon dioxide tax will be 50 per cent of the amount prescribed by the tax rate table.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

The target of the current government is to increase renewable energy sources in its energy mix so that it will account for over 50 per cent during the 2020s, simultaneously increasing self-sufficiency to over 55 per cent. The government sees that liquid biofuels and biogas production have the greatest potential. Also the previous national target of 38 per cent renewable energy for final energy consumption by 2020 has led to Finland enacting strong support schemes for renewable energy sources, especially wind power. Currently, a new national energy and climate strategy is under preparation and is due to be presented to the parliament by the end of 2016. The strategy will outline how climate and energy goals, such as the goals of the European Union and the national goal of ending coal use in energy production and cut the use of imported oil by half during the 2020s, will be attained. Within the framework of the new strategy, a new subsidy scheme for renewable energy sources is also under preparation.

Estimates on the impact of climate change on power prices vary significantly. Changes in the availability of Nordic hydroelectric power, emissions trading and changes in the global fuel markets are probably going to have more significance in the short term. Increasing energy efficiency and a long-term strategy to improve the energy efficiency of buildings are estimated to reduce total consumption.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The current electricity market development has led to an increased demand for storage solutions. So far the Ministry of Employment and the Economy has funded two pilot projects aiming to develop the use of electricity storages.

Currently there are open questions related to both how the regulatory framework can accommodate the special characteristics of electricity storages, as well as the possibilities of funding research and development in accordance with EU state aid rules. The main identified legal issues relate to for example unbundling of electricity network and generation businesses, tax and network pricing regulation rules. For overcoming regulatory barriers for developing electricity storage, also the proposed developments at the EU level are central.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

According to Finland's climate and energy strategy, nuclear power is an option, but the initiatives must come from the industry. As stipulated in the Nuclear Energy Act, an environmental impact assessment process must be completed before an application for a decision-in-principle can be submitted to the government. Permits to construct new nuclear power plants ultimately require ratification by the parliament.

More than a quarter of the electricity consumed in Finland is currently produced by nuclear power. Nuclear power is seen as an important means to achieve security of supply and self-sufficiency in electricity production in the future. All nuclear power projects must fulfil the underlying principle of Finnish nuclear power policy and law; in other words, the use of nuclear energy must be in the overall interest of society. Currently, the majority policy does not encourage or discourage the development of new nuclear power plants.

Finland has four nuclear reactors in operation, one under construction (Olkiluoto 3 owned by operator Teollisuuden Voima Ltd) and another is being planned (Hanhikivi 1 owned by operator Fennovoima).

Fennovoima Ltd has submitted its construction permit application to the The Ministry of Employment and the Economy, which started to review the application for the construction of the Hanhikivi 1 nuclear power plant in 2015. The review of the application started after sufficient certainty was received that the domestic ownership requirement was met. The Ministry estimates that the actual decision of the government regarding the construction licence will be made in 2018 at the earliest.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Transmission network operations require a transmission network licence and certification of independency. The transmission network licence has been granted by the Energy Authority to Fingrid, which is according to the preparatory works intended to be the only transmission system operator in the Finnish mainland. Fingrid has been certified by the Energy Authority in accordance with the EMA and applicable EU provisions.

The EMA requires Fingrid to nominate all physical transmission assets belonging to its transmission grid under a special nomination process. This led to changes in ownership of some grid assets as well as disputes with third parties. The Market Court ruled on the matter in June 2016 (MAO 363/16), after which it currently remains unclear how

certain other grid assets owned by third parties that could amount to transmission grid shall be treated.

Construction of new high-voltage transmission network lines (110kV and higher) requires permits from the Energy Authority and the environmental authorities.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Access to the network must be granted to all third parties on a transparent and non-discriminatory basis (third-party access principle). The transmission system operator and users of the network conclude separate contracts on the connection and use of the network. Parties wishing to connect to the transmission system must fulfil the specified technical requirements set by Fingrid and pay the relevant fees. These requirements have been verified and accepted by the Energy Authority, which supervises that network access is granted non-discriminatorily and that the connecting fees are reasonable.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Fingrid operates and develops the transmission grid as part of its duties as the transmission system operator. The goal is to develop the transmission grid in a way that ensures the whole of Finland remains a single bidding area. No direct special financial incentives are provided for this purpose, but investments to the transmission system are incentivised through the rate of return regulatory model applied by the Energy Authority. Reasonable return may be accrued to all investments into the grid that participate in electricity transmission and are in actual use. The Supreme Administrative Court has held that regulatory model's different incentives are sufficient to foster market integration as required by article 37(8) of Directive 2009/72/EC and the need for separate financial incentives was not established (KHO 2015:105).

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The Energy Authority supervises that the rates and terms for the transmission services fulfil the requirements of the EMA. The terms must be equitable and non-discriminatory. The transmission system operator has the right to set its own tariffs within these limits as long as the tariffs comply with the requirements of, for example, non-discrimination and equitability.

The service rates must be reasonable assessed as a whole, which the Energy Authority assesses through a complex rate of return regulation model. The reasonability of pricing is assessed in regulatory periods lasting four years, and the assessment methodology shall be valid from the beginning of 2016 for two consecutive periods of four years (ie, eight years in total).

The Energy Authority's decisions regarding reasonability of pricing may be appealed to the Market Court and ultimately to the Supreme Administrative Court by the transmission system operator.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The transmission system operator Fingrid is responsible for assuring the reliability, security of supply and efficiency of the transmission grid. Fingrid must publish a 10-year grid development plan every two years. The plan must include an investment plan required to ensure the obligation to develop the system is fulfilled, a plan on investments regarding cross-border connections, as well as other information. The plan is non-binding in nature and does not constitute any legal effects. In addition, the development plan is the Finnish basis for the compilation of the EU-wide grid development plan stipulated in EU Regulation 714/2009.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Distribution network operations require a distribution system licence granted by the Energy Authority. The applicant must fulfil specified technical, financial and organisational requirements. Grids located in, for example, closed industrial areas may be subject to lighter regulation as licensed closed distribution system operations. Smaller grids located in the real property owned or controlled by the same party may still be exempted from licences and regulation.

The distribution system operators have the sole right to construct distribution grid in their operating area (with certain exemptions). This does not apply to high-voltage grid (110kV or higher), but the construction of new high-voltage lines requires permits from the Energy Authority and the environmental authorities.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Access to the distribution grids must be granted to third parties on a non-discriminatory and transparent basis (third-party access principle). Parties wishing to connect to the distribution system must fulfil the specified technical requirements and pay the relevant fees. These requirements have been verified and accepted by the Energy Authority, which supervises network access is granted non-discriminatorily and that the connecting fees are reasonable. Parties suspecting that the distribution operator has not complied with these requirements may ask the Energy Authority to investigate the matter. The Energy Authority issues decisions in connecting disputes based on case-by-case considerations.

The distribution system operator and users of the network usually conclude separate contracts on connection and use of the network.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Pursuant to the EMA, electricity distribution network operators have a statutory duty to operate and develop the distribution network. In addition, investments in network operations are incentivised through the rate of return regulatory model applied by the Energy Authority. Reasonable return may be accrued to all investments into the grid that participate in electricity distribution and are in actual use. The EMA contains nationally prepared security of supply obligations to the distribution system operators, which oblige to develop the grid in way that power outages deriving from storms and heavy snow loads may not cause interruptions exceeding certain hourly limits. These requirements enter into force gradually.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The Energy Authority supervises that the rates and terms for the distribution services fulfil the requirements of the EMA. The terms must be equitable and non-discriminatory. The distribution system operators may set their rates and terms within the limits set in the EMA. A customer may ask the Energy Authority to investigate whether the requirements of the EMA have been complied with.

The service rates for distribution services must be reasonable assessed as a whole, which the Energy Authority assesses through a complex rate of return regulation model. The reasonability of pricing is assessed every four years, and the assessment methodology shall be valid from the beginning of 2016 for two consecutive periods of four years. Each distribution system operator has the right to set its own tariffs within these limits.

The Energy Authority's decisions regarding reasonability of pricing may be appealed to the Market Court and ultimately to the Supreme Administrative Court by the distribution system operator.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Electricity wholesale or retail activities do not currently require specific governmental licences. Market participants active in electricity wholesale markets are obliged to register and report reportable wholesale transactions under the REMIT regime. Retailers are obliged to deliver the terms of retail sale and prices that the retailer applies when selling electricity to consumers and certain small users to the Energy Authority.

Wholesale activities in the Nord Pool Spot must comply with the rules and regulations of the electricity exchange, which is established and operates pursuant to Norwegian law.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

There are no governmental tariffs or similar regulation for power sales in addition to taxation.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

There are no governmental rates for wholesale of power. The wholesale prices are determined by market forces in the Nord Pool Spot power exchange or agreed bilaterally between the parties.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Electricity retailers have an obligation to sell electricity to consumers and certain small users at a reasonable price in the areas where they have significant market power. If no seller is in such a position in a certain area, the retailer with the highest market share is under this obligation. The seller with this obligation must publish the relevant terms, conditions and prices.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

Regulatory policy and legislation in the electricity sector is in the competence of the Ministry of Employment and the Economy. The Energy Authority is the main regulatory body of the energy sector. The Finnish Competition and Consumer Authority (FCCA) is the national authority competent in applying EU and Finnish competition and consumer protection laws.

23 Scope of authority

What is the scope of each regulator's authority?

The Energy Authority supervises both electricity markets and networks. The Energy Market Authority has separate units focusing on markets and networks. The markets unit supervises wholesale and retail electricity markets by monitoring compliance with the EMA, REMIT and other electricity market regulation and promoting competitive electricity markets. The networks unit supervises the reasonableness of network services pricing and compliance with the unbundling requirements. In addition, the Energy Authority is competent to supervise that network connection and network access terms and fees comply with the requirements of the EMA. The Energy Authority also supervises that retail electricity contract terms for consumers are in compliance with the EMA. The Energy Authority administers the feed-in-tariff system and grants the aids.

The Finnish Competition and Consumer Authority is competent to apply rules on competition (in particular, articles 101 and 102 of the Treaty on the Functioning of the European Union and their national equivalents included in the Competition Act). The FCCA has a separate unit focusing on regulated markets and network industries that also handles cases related to energy and electricity markets. The FCCA also reviews mergers in Finland (see question 26).

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

Both the Energy Authority and the Finnish Competition and Consumer Authority are completely independent of the regulated business and governmental officials. Within the agencies, the units maintain a certain degree of autonomy.

Both authorities are established by separate Acts setting their duties and competences in addition to the EMA and the Competition Act. The independency of the Energy Authority is also required by the EU Directive 2009/72/EC and the Acts on Energy Authority (870/2013, as amended) and Supervision of Electricity and Natural Gas Markets (590/2013, as amended). Both the Energy Authority and the FCCA belong to the branch of administration of the MEE, but they are fully independent of the ministry and of each other. The authorities, however, cooperate in supervising the electricity sector and have concluded a memorandum, outlining the goals and means of the cooperation. According to the memorandum, the authorities regularly discuss and exchange information on the state and functioning of electricity and natural gas markets. In some cases, cooperation on case handling is done, inter alia, in order to prevent contradictory decisions being made.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Depending on the type of the decision, the decisions of the Energy Authority may be appealed with the Market Court or the regional Administrative Courts as the court of first instance. A further appeal to the Supreme Administrative Court is available.

Acting on a complaint or its own initiative, the Energy Authority may oblige undertakings to comply with the EMA or propose that the Market Court imposes fines. If the Energy Authority prepares a proposal to the Market Court to impose fines upon an undertaking, the Market Court's decision may be appealed to the Supreme Administrative Court.

The courts review the legality of the Energy Authority's decision.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The FCCA is competent to review mergers in Finland that exceed the jurisdictional thresholds, unless the transaction falls within the jurisdiction of the European Commission pursuant to EU Merger Regulation 139/2004. The FCCA may approve a concentration with or without remedies.

The Market Court may prohibit a concentration on the proposal of the FCCA or accept the concentration with or without remedies. The Market Court's decisions in merger control matters may be appealed to the Supreme Administrative Court.

In addition, the Ministry of Employment and the Economy may review acquisitions in the energy sector by companies domiciled outside the EFTA (see question 31).

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

A concentration must be notified where the aggregate worldwide turnover of the parties exceeds €350 million and the turnover of each of at least two of the parties accrued from Finland exceeds €20 million for

both. The relevant turnovers are based on the last confirmed financial statements.

The notification must be made before the transaction is implemented, and it may be made as soon as the parties can sufficiently demonstrate their intent to close the transaction (ie, by signing a letter of intent or a similar instrument).

The applicable merger control test is whether mergers or acquisitions in the electricity sector significantly impede effective competition in the Finnish markets or a substantial part thereof. When assessing mergers in the electricity sector, it is customary for the FCCA to obtain a statement from and consult the Energy Authority, if necessary. Additionally, the FCCA may also prohibit or impose conditions on a concentration in the electricity sector, if as a result of such concentration the combined share of the distribution operations of the relevant parties exceeds 25 per cent of the amount of electricity transmitted at 400V in the distribution grids at national level. There have been proposals that this special provision should be removed as outdated.

The review by the FCCA is divided into two phases, the latter of which is initiated only if the FCCA considers it necessary to investigate the concentration further. By law, phase I investigations may last for a maximum of one month from the receipt of the notification. The notification must contain all essential information for the FCCA to assess the concentration otherwise the FCCA is entitled to decide the notification is essentially incomplete. This has also occurred recently and means that the procedural timelines begin to run only after all essential information has been provided.

The FCCA aims to clear cases where there are clearly no anticompetitive effects within 10 working days of the notification. However, it is not obliged to do so. If the FCCA decides to open Phase II investigations, it has three more months to investigate the concentration. The FCCA may ask the Market Court to extend the Phase II investigation period by up to two months, which it has done in some complex cases. Usually the FCCA asks consent from the parties in such cases. If the parties have not given their consent, the Market Court should not approve the application unless there are weighty reasons supporting the grant of the extension.

The FCCA has also the power to freeze its own procedural deadlines ('stopping the clock') if the parties fail to provide information required by the FCCA or the information provided is inadequate or erroneous.

By the end of Phase II, the FCCA must either accept the concentration with or without conditions, or submit a proposal to the Market Court that the concentration should be prohibited. If not, the concentration is deemed accepted.

The most notable merger control case in the electricity sector is the FCCA's conditional acceptance of the merger between Fortum and E.ON Finland. In 2010 the Supreme Administrative Court ruled that the relevant electricity wholesale markets covered at least Finland and Sweden despite congestion in the cross-border connections and the resulting price variations, which led to repealing the divestment commitments of certain generation capacity the FCCA had required.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The FCCA is competent to investigate anticompetitive practices and has the power to apply the Competition Act and EU competition law, namely articles 101 and 102 of the Treaty on the Functioning of the European Union. According to the Electricity and Natural Gas Market Supervision Act (590/2013, as amended), when the Energy Authority investigates practices that it suspects constitute prohibited competition restrictions, it may transfer the case to the FCCA. The Energy Authority may continue its own investigations in such cases on the basis of the EMA.

Manipulative practices are prohibited by REMIT (EU Regulation 1227/2011). National REMIT enforcement rules entered into force on 1 September 2014. Registration and reporting obligations entered into force in October 2015 and April 2016 in accordance with the European Commission's Implementation Regulation (1348/2014). The Energy Authority is competent to investigate suspected insider trading and market manipulation cases, as well as failures to publish insider information, failures to register with the authority or failures to notify transactions in electricity wholesale markets as required by REMIT. In addition, the Finnish Financial Supervisory Authority is competent to investigate insider trading and market manipulation under EU Market Abuse Regulation (596/2014), other EU financial regulatory instruments and national rules.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Anticompetitive matters are investigated by the FCCA that applies both Finnish and EU competition provisions, the substantive content of which is similar and which are interpreted similarly. Since the FCCA is required to prepare a proposal to the Market Court that fines should be imposed and is, in practice, thus required to prove its case before the Court to the requisite standard, the amount and quality of evidence to support that an infringement has occurred play an important role in addition to the FCCA's substantive analysis.

Pursuant to the Administrative Judicial Procedure Act (586/1996, as amended), the Market Court is in such cases responsible for clarifying the matter. Where necessary, it shall inform the party, or the FCCA, of any additional evidence to be presented. The Market Court shall, on its own initiative, obtain evidence in so far as the impartiality and fairness of the procedure and the nature of the case require. In its decision the Market Court shall decide whether the competition provisions have been breached and whether fines should be imposed. The Market Court bases its review on a free evaluation of evidence, meaning that it shall review all evidence available and determine on which grounds the resolution can be based.

Interesting practical issues arose as to the standard of proof in the asphalt cartel case (Supreme Administrative Court's decision 2009:83). The Supreme Administrative Court ruled for example that in hard-core cartel cases where evidence is difficult to obtain due to the secret nature of the cartel, the evidence was not subject to the same requirements as in criminal cases. Therefore also inferences can be used for determining an infringement. According to the Supreme Administrative Court, the evidence presented is to be evaluated comprehensively.

REMIT's prohibition of market manipulation is directly applicable in Finland and possible future EU case law and assessment principles are likely to have significant impact on assessment of manipulation. REMIT breaches are currently sanctioned only by administrative sanctions and administrative law standards apply. So far there have been no national cases where market manipulation under REMIT has been assessed. Market manipulation under the financial regulatory instruments that constitute crimes are investigated under the applicable criminal laws.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The FCCA has wide investigatory powers, including the power to conduct surprise inspections at business premises, and conditional of the prior approval of the Market Court, in private premises. After its investigations, the FCCA may order infringements to be brought to an end, oblige an undertaking to supply goods or order commitments proposed by the undertaking under investigation to be legally binding. The FCCA may impose minor conditional fines if its decisions have not been complied with.

The FCCA may ultimately propose to the Market Court that fines amounting up to 10 per cent of an undertaking's past year revenue should be imposed.

Market manipulation and insider trading in electricity wholesale markets are sanctioned under the national REMIT enforcement provisions by administrative sanctions only. The Energy Authority has the power to inspect business premises and has power to issue public warnings or impose petty fines. The Market Court has the power to impose administrative fines in more serious breaches on the proposal of the Energy Authority. The warnings and fines could be imposed on undertakings as well as private persons.

The approach of choosing administrative sanctions only causes problematic relations with the supervision of financial and derivatives

Update and trends

Proposed cap on electricity transmission and distribution price increases

The Finnish Ministry of Employment and the Economy circulated in summer 2016 a draft Government Bill amending the Electricity Market Act. The draft Bill aims to the prevent unreasonable one-time increases of electricity transmission and distribution pricing. The draft Bill proposes that the increase of transmission and distribution prices would be capped to 15 per cent of the total taxable price during the preceding 12 months. The calculation of the price increase cap would be based on the total average price for each network user group and the rules would apply in relation to both consumers and corporate customers. The proposed amendments would not, however, prevent the TSO or DSO to increase prices in excess of 15 per cent in case the increase is based on utilising the deficits (lower than allowed prices) of the previous four-year regulatory period. The proposed amendments are intended to enter into force on 1 January 2017.

Changes in the renewables subsidies scheme

A new subsidy scheme for renewable energy is currently under preparation. A working group appointed by the Ministry of Employment and the Economy submitted its final report in May 2016. The report of the working group did not include a clear recommendation for the support system, but mainly analysed the different alternatives for the political decision-making process. The working group evaluated whether a model based on investment aid, operating aid or certificates best fulfils the goals set for the new support scheme for renewable energy. It seems that, according to the working group, the most suitable support model for renewable energy going forward would be the operating aid scheme based on a bidding process. The operating aid scheme, which is based on a technology-neutral competitive bidding process, would be a cost-effective way to guarantee an increase to the production capacity for electricity that uses renewable energy in Finland. It would also facilitate compliance with EU rules on state subsidies and requirement for technology-neutrality.

The more detailed preparatory work on the new support scheme now continues on the basis of the working group's report. The work carried out by the working group is a part of the preparation of the national energy and climate strategy that will be submitted to the Finnish parliament for decision-making at the end of 2016.

REMIT and overlapping regulatory regimes

REMIT's entry into force and ensuring compliance with several partially overlapping regulatory regimes (REMIT, financial regulation, competition law) may increase the administrative burden and compliance costs of numerous undertakings active in the sector.

Currently, it is hard to anticipate the exact effects of the REMIT regime in Finland and on the Nordic electricity markets. Much will depend on the actual activity of the Energy Authority and cooperation with other domestic, foreign and supranational authorities.

Security of supply and sufficiency of generation capacity

According to estimates made by the Energy Authority, the operational Finnish electricity production capacity will not be able to meet the demand during peak load situations. The resulting capacity deficit must be covered by importing electricity. The Energy Authority has stressed the importance of ensuring that access to domestic electricity and electricity transmission connections are as reliable as possible and fully available in the winter months in order to ensure sufficient security of supply. Simultaneously as there is not enough domestic production capacity during peak load situations, electricity prices have fallen and market actors have expressed that there are no prerequisites for making market term investments to new generation capacity. During recent years some existing capacity has also been mothballed. There have been concerns that this will in the long run lead to situations where the supply of electricity is normally sufficient, or even in excess, but during peak load situations the security of supply might be at risk.

The strategic reserve capacity for situations when market-based electricity production cannot cover consumption is based on the Capacity Reserve Act (117/2011). According to the Act, the Energy Authority evaluates and decides the required size of peak-load reserve capacity. The Energy Authority is also in charge of arranging the tendering process for choosing the power plants and consumption units for the capacity reserve arrangement.

markets. During the legislative process, the Parliament's Economy Committee submitted a statement to Parliament requiring that the sanctions for breaches of REMIT's substantive rules are aligned with those of market manipulation and insider trading in the financial and derivatives markets in the future. This may involve enacting criminal law sanctioning mechanisms.

Breach of financial regulatory instruments may involve criminal sanctions, such as fines and imprisonment.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

The Act on the Monitoring of Foreign Corporate Acquisitions (172/2012, as amended) may limit acquisitions by foreign owners (ie, parties who are not domiciled in any EU or European Free Trade Association (EFTA) member state, or such an organisation or foundation domiciled within the EU or EFTA where a foreigner who is not domiciled in any EU or EFTA member state controls 10 per cent of the aggregate number of votes or otherwise has a corresponding actual influence).

The Act requires that information of a corporate acquisition regarding a monitored entity, defined as an 'organisation and business undertaking considered critical in terms of securing functions fundamental to society on the basis of its field, business or commitments', must be provided to the MEE upon request. Energy production, electricity transmission and distribution are identified as such critical industries. Whether a certain undertaking active in these industries is categorised as a monitored entity will be decided on a case-by-case basis by the MEE and/or the government.

In addition, acquisitions where foreigners acquire companies active in the defence industry or companies that produce dual-use goods are subject to a mandatory pre-notification obligation.

Foreign owners may either notify the MEE in advance voluntarily (in order to ensure deal security, for example), or provide information only upon the MEE's specific request regarding a relevant corporate transaction falling within the scope of the Act.

The MEE must confirm the relevant corporate acquisition, unless it potentially conflicts with a key national interest, in which case the MEE must refer the matter within three months for consideration at a government plenary session. The government may refuse to confirm a corporate acquisition only if this is necessary owing to vital national interest.

In practice, the MEE has applied positive attitude towards foreign ownership and acquisitions and so far has not refused any acquisitions. However, the Act allows Finnish public authorities to exercise control over the ownership of companies considered essential in terms of national emergency supply and national security. If necessary, foreign ownership in such companies may also be restricted.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Operation of interconnectors to another transmission system located outside Finland require a transmission system licence, unless the Energy Authority has granted a temporary exemption from this requirement based on an exemption provided in article 17 of EU Regulation 714/2009.

Because interconnectors are seen significant for the transmission of electricity and security of supply, authorisation needs to be applied for at the MEE for the construction of interconnections with a capacity of at least 110kV. Pursuant to the EMA, the prerequisites for the authorisation are that the construction of the interconnector is necessary to secure transmission of electricity and that construction is also otherwise appropriate in terms of the development and reciprocity of electricity markets.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

The transmission system operator Fingrid is entrusted with the development, construction and operation of regulated interconnectors. Finland is currently connected to Estonian, Swedish, Norwegian and Russian electricity networks. Connecting tariffs, congestion management and information exchanges between TSOs of EU countries must be in compliance with the requirements laid out in the EU legislation such as Regulation on conditions for access to the network for cross-border exchanges in electricity (Regulation 714/2009), the EU Network Codes and the EMA.

Fingrid charges separate cross-border transmission tariffs for trade between Finland and Russia. Electricity was first exported commercially to Russia for the first time on 7 June 2015 after agreements between Fingrid and the Russian national grid parties enabling bidirectional trade in electricity between Finland and Russia at the end of 2014.

Under the EMA, connecting lines and standby supply lines of electricity production plants may also connect facilities located outside Finnish borders to the Finnish electricity system. This allows, for example, construction of wind power parks further offshore outside Finnish territorial waters.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Transactions between electricity utilities and their affiliates are not restricted directly. Pursuant to EU directives on the internal market in electricity, vertically integrated undertakings active in electricity operations must ensure accounting separation and unbundling of electricity production and sales activities from electricity distribution operations and other business operations. The Energy Authority must be provided with profit and loss statements and balance sheets of unbundled operations annually.

Legal unbundling of electricity distribution operations (ie, establishment of separate entities) is required if certain limits based on amount of annually distributed electricity to consumers are exceeded for three consecutive years. Further, legally unbundled distribution system operators with over 50,000 customers must also fulfil the requirements of functional unbundling from the electricity production and sales activities by preparing a programme that ensures the operator fulfils its obligations non-discriminatorily. This includes, inter alia, the requirement that the directors of the distribution system operator are independent and do not hold similar positions in the electricity production activities of the group.

The EMA has adopted the model of ownership unbundling of the transmission system operator Fingrid under article 9 of Directive 2009/72/EC. Thus, Fingrid's private owners must manage its shares in a manner that the same persons are not entitled to make decisions both in Fingrid and in the operation of undertakings performing the generation or supply of electricity. In addition, Fingrid board members cannot be legal representatives in an undertaking performing any of the functions of generation or supply of electricity.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

The Energy Authority supervises that the requirements of unbundling under the EMA are carried out and are being followed in practice. The Energy Authority may oblige undertakings to comply with the EMA, impose petty fines and ultimately submit proposals that the Market Court should impose fines for breaches of the unbundling requirements.

Krogerus

Katri Joenpolvi **katri.joenpolvi@krogerus.com**
Ville Hailikari **ville.hailikari@krogerus.com**
Mikko Pirttilä **mikko.pirttila@krogerus.com**

Unioninkatu 22
00130 Helsinki
Finland

Tel: +358 29 000 6200
Fax: +358 29 000 6201
www.krogerus.com

Germany

Sabine Schulte-Beckhausen, Guido Hermeier and Kristin Spiekermann

White & Case LLP

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Since 2005 Germany's electricity industry has been regulated in accordance with European standards, based on the EU Commission's Energy packages. The purpose of the German energy regulation is to ensure a safe, reasonably priced, consumer-friendly, efficient and environmentally friendly energy supply. With regard to the networks the legislator aims to ensure permanent, high-capacity and reliable operation of the grids.

In 2000 the German legislator created a regulatory instrument to increase the share of renewable energies in the German energy mix, but also to promote further development of technologies to generate electricity from renewable energy sources (Act on the Development of Renewable Energy Sources (EEG)). The EEG was recently revised in 2016. It sets out the goal that the share of renewable energy production shall amount to 80 per cent in 2050.

After the nuclear disaster of Fukushima in March 2011, the German government fundamentally revised its energy policy. The development of the renewable energy sector became more significant and the government's policy now focuses on the improvement of the integration of renewable energy sources into the energy system and market.

According to the Federal Ministry of Economy, the German energy transition is a decision to produce energy on a sustainable basis and make Germany one of the most energy-efficient and environmentally compatible economies in the world. The expansion of renewable energy shall be one of the main pillars in Germany's energy transition. In addition, the German legislator set out rules on the roll-out of smart-meter devices to create a legal framework which allows a flexible generation on the one hand, and a more flexible demand on the other hand.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

In the German electricity market, four incumbent power generators (RWE, E.ON, EnBW and Vattenfall) in recent decades have shared the market with hundreds of municipal utilities. Some of these have several thousand employees, others are small or medium-sized companies. As to the ownership structure, some municipal utilities are 100 per cent public companies, but a strong number have private shareholders. As well, independent producers and self-suppliers contribute to the energy mix by operating wind power stations and photovoltaic systems. Recently, there has been a trend towards decentralised power generation by private households, specifically based on photovoltaics.

With regard to electricity transmission system operators, the European Directive Concerning Common Rules for the Internal Market in Electricity 1996 (96/92/EC) demanded legal unbundling of the network business, namely the establishment of separate legal entities in relation to market-related activities such as production and marketing of energy. Following this demand, Amprion, Tennet TSO, 50Hertz and TransnetBW became legally independent from their former parent companies (ie, RWE, E.ON, Vattenfall Europe and EnBW). With the third energy package in 2009 ownership unbundling was introduced. As a consequence, the German transmission operators were certified as fully independent transmission operators, or as independent transmission operators in the sense of the European directive.

Distribution networks are operated by more than 800 local and regional distribution network operators. Ownership unbundling on distribution level is not required.

As to the sale of power and gas, market players are free to sell energy to end consumers, or on the wholesale market either over te counter or via the European Energy Exchange (EEX). According to the revised Renewable Energy Act electricity from renewable generation needs to be directly sold on the market. The former system of feed-in tariffs continues for existing installations, and in the future only for small installations.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

According to the first EU Energy Package, power generation is not subject to specific regulatory approvals. There is no energy law based authorisation required to operate a generation facility. The German Energy Act only refers to technical safety regulation set by industry associations.

But, the construction of a generation facility must adhere to the general construction standards provided by the Federal Building Code and the Federal Emmission Control Act.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Connection to the system and use of the system are customers' rights. Generators are grid customers. In principle, there is no specific grid use fee for connection to the grid.

Operators of renewable energy installations are granted a priority right of connection to the grid. According to the Renewable Energy Act, the grid operator is even obliged to expand the grid if the capacity is not sufficient for grid connection of the planned installation.

In 2007, a special regulation was issued (the Connection of Power Plants Ordinance, KraftNAV) which set out rules for the procedure of network connection for new power plants and for the allocation of connection costs (to be paid by the power plant operator) and of expansion of the system upstream of the connection point (to be paid by the system operator). These specific rules applied to power plants with a capacity of 100MW or more that were connected to high voltage grids (110kV and higher). In order to encourage the construction of new generation facilities, such new power plants were given a priority right of network access in the event of congestion in the German transmission system. A priority access was only granted when the application for connection was filed before 31 December 2007 and the plant was connected to the grid before 31 December 2012.

The grid operator is entitled to refuse grid connection if this is technically unfeasible, or economically unreasonable.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

In order to create incentives for the production of renewable energy, the German legislator established in 2000 under the Act on the Development of Renewable Energy Sources a complex system of fixed feed-in tariffs for electricity generated from renewable sources. The promotion system has been amended several times, in particular in 2009, 2012 and 2014. However, the legal framework was in general amended only with effect to new plants and was kept stable for existing plants. Therefore, the promotional system in general as well as the conditions under the respective framework depends on time of commissioning. Renewable energies promoted under the EEG are hydropower (including wave, tidal, salinity gradient and marine current energy), onshore and offshore wind energy, solar radiation energy, geothermal energy, energy from biomass including biogas, biomethane, landfill gas and sewage treatment gas and from the biologically degradable part of waste from households and industry. Further mine gas is treated as renewable energy.

The promotional system includes rules on priority grid connection and grid access as well as financial promotion. The financial promotion method includes feed-in tariffs as well as payment of a market premium in case of direct marketing. For plants commissioned under the EEG 2014 regular feed-in tariffs are only applicable to small installations. So far the applicable amount of promotion depends on the respective energy source used, the date of commissioning of the installation and the capacity of the installation. However, the legislator already decided to switch the method to determinate the applicable amount to promotion into a tendering process. The respective amendment of the EEG recently passed through the German parliament and will enter into force on 1 January 2017.

The EEG provides a cost balancing and cost shifting mechanism in order to burden the costs of subsidising the renewable energies to the end customers, who have to pay a surcharge for each kilowatt hour of used power.

Compared to EEG, a similar regulation exists concerning the obligation of the network operator to connect power producers to the network who generate electricity in combined heat and power generation plants. The fundamental regulation is laid down in the Combined Heat and Power Generation Act (KWK-G), which was revised in 2015 and entered into force on 1 January 2016. Pursuant to this legislation, grid operators have to connect combined heat and power plants to their grids and purchase the produced electricity. The feed-in tariffs consist of an agreed price and an additional statutory premium, or just the additional statutory premium in case of direct marketing (which is mandatory to new CHP plants). However, the application of the revised KWK-G, in particular the authorisation for granting the promotion to the CHP plant to be issued by the Federal Office of Economics and Export Control, is on hold owing to the ongoing EU-state aid procedure. Due to informal information it is to be expected that the KWK-G will have to be revised again to bring it in line with the EU Commission's guidelines on state aid for environmental protection and energy.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

After the Fukushima accident the German legislator provided a roadmap for the structured phasing out of the utilisation of nuclear power for the commercial generation of electricity. In 2011 eight nuclear power plants forfeited their operating licences. The operating licences for the three newest nuclear power plants will expire by 2022. However, the German government pursues the aim to reduce greenhouse emissions by 40 per cent by 2020 in relation to 1990.

According the analysis by the German government there is sufficient power plant capacity even taking into account the nuclear energy phase-out. The increase in renewable energies, increase in energy efficiency and the replacement of older fossil power plants by state of the art fossil power plants shall compensate for the displaced nuclear power.

In a long-term perspective 80 per cent of electricity demand shall be covered by renewable energies, an average rate of 30 per cent has been reached so far. Due to the volatile generation in particular of wind and photovoltaic in respective hours of a day the entire power demand can already be covered by renewable energies. To ensure security of supply during the transition period the German government wants to increase flexibility of electricity generation and electricity consumption.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Energy storage systems are an integral part of Germany's Energy Transition. Currently, the main application of energy storage system is marketing of frequency response services.

Nevertheless German energy law does not provide regulatory incentives for storage applications. The existing regulation aims at safeguarding specific advantages for renewable energy producers under the Renewable Energy Act: for electricity which is supplied or conducted for the purpose of temporary storage to an electrical, chemical, mechanical or physical electricity storage installation, the entitlement of the transmission system operators to payment of the EEG surcharge shall not apply if energy is removed from the electricity storage installation solely for the purpose of re-feeding in electricity into the grid system. In addition, there is a grid fee exemption for storage facilities which in the past was mainly relevant for pump storage plants, but which has become increasingly relevant for other energy storage systems.

There is no specific incentive for grid operators with regard to investments in grid scale storage applications. But, with regard to private households the federal government makes PV-battery system investments attractive through the provision of incentives including low-interest loans and investment grants. The amount of support depends on the size of the PV-system and the cost for the storage system.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Following the Fukushima incident in March 2011, the German government decided on the progressive phasing out of nuclear energy. All nuclear power plants will gradually be shut down by 2022.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

For the construction of transmission networks operators have to follow explicit building regulations and nature conservation laws.

Under the Energy Industry Act, a planning approval decision is required for building, operating and modifying high-voltage overhead transmission lines of 110kV or more. If an environmental impact assessment is not mandatory for a project and individual rights of third parties are not substantially affected, section 43b no. 2 of the Energy Industry Act allows applying for a planning permit instead of a planning approval, which is granted in less formal planning procedure.

The Energy Industry Act provides for an optional planning approval decision with regard to high-voltage underground transmission lines of 110kV located not more than 20km from the coastline.

Planning approval and planning permit decisions give permission for all elements of a transmission line. Thereby the result of prior regional planning procedures carried out according to provisions of the Regional Planning Act and the Planning Acts of the Federal States and integrated environmental impact assessments have to be considered by all public authorities dealing with planning acts and measures affecting the subject of the regional planning procedures. The results of the regional planning procedure have no binding effect, however, and do not represent a substitute for any planning approval or other permit.

Further, operators of transmission networks need an authorisation granted by the responsible state regulatory authority. Whereas new operators have to file for this authorisation, this does not apply to incumbent operators that acted as transmission network operators already before this authorisation requirement was introduced in July 2005. Existing authorisations are passed to the legal successor in case of restructuring or implementation of unbundling.

In addition, transmission network operators have to apply for a certification. Within the certification process the Federal Network Agency examines whether the transmission network operator fulfils the specific unbundling restrictions for transmission network operators.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Network operators are obliged to grant third-party access to their system on a non-discriminatory basis in accordance with duly substantiated criteria. The network access may only be denied if the network system operator provides evidence that the requested access is impossible or unacceptable due to operational or other reasons.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Transmission network expansion is mainly encouraged by allowing the transmission network operators to pass the capital expenditures for certain so-called investment measures on to the grid users by including the costs in the network tariffs.

Pursuant to the incentive regulation ordinance the Federal Network Agency determines revenue caps for a period of five years for each transmission system operator. The revenue cap is the upper limit of the allowed revenues that a transmission system operator may earn via the network tariffs. If the Federal Network Agency approves an expansion of the transmission system as investment measure pursuant to the incentive regulation ordinance, the transmission system operator is allowed to adjust its revenue cap by the relevant capital expenditures (depreciation, interest on equity, trade income tax and interest on debt) of the investment measure.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

Pursuant to the Energy Industry Act, all system operators must provide final customers, neighbouring and downstream electricity distribution systems, power lines, and generation facilities with connection to their system. The terms and conditions for network connection have to be reasonable, non-discriminatory, transparent and not less favourable than those used in comparable situations within their company or in relation to affiliated companies. As an exception to this rule, system operators may refuse the connection, if they demonstrate that the provision of a system connection is impossible or unreasonable for operational reasons, or other technical reasons. In the event of a shortage of capacity, the grounds must contain adequate information as to which specific measures would be necessary and what individual costs would be involved for the development of the network.

Operators of energy supply systems must grant all persons access to their system on a non-discriminatory basis in accordance with duly substantiated criteria. They have to publish terms and conditions, sample agreements and tariffs for such system access on the internet. To structure the right of access, final costumers or suppliers of electricity must conclude agreements with those system operators from whose networks electricity is to be taken off or into whose networks electricity is to be fed. Grid users have the right to conclude such system agreements.

The rates for the access to the network (network tariffs) are regulated by the Federal Network Agency. Pursuant to the current Incentive Regulation Ordinance the Federal Network Agency determines revenue caps for a period of five years for each network operator. The revenue cap is the upper limit of the allowed revenues that a network operator may earn via the grid fees. The determination of the revenue cap is based on a review of each network operators' costs in the 'photo year' and an efficiency benchmark of all network operators that is carried out by the Federal Network Agency. The efficiency benchmark results in a so-called efficiency value for each network operator reflecting its efficiency in relation to the most efficient network operators. All network operators are to be gradually raised to the efficiency level of the most efficient company/companies.

Further, the network operator's costs are divided into two categories: controllable and non-controllable costs. Regarding the non-controllable costs the incentive regulation ordinance further distinguishes between permanently non-controllable costs and temporarily non-controllable costs. The permanently non-controllable costs are explicitly defined in the ordinance. Such costs do not need to be reduced by the network operator; hence, they can be in total included in the revenue cap. The temporarily non-controllable costs are the costs that are in principle controllable by the network operator but can be regarded as efficient and therefore do not have to be reduced by the network operator. The controllable costs are the costs that the network operator can control. They have to be reduced corresponding to the inefficiencies of the network operators. The amount of the inefficiencies is expressed by the efficiency value.

The determination of each revenue cap is based on a formula that basically contains the aforementioned cost-elements as well as further elements to reflect inflation, general sectoral productivity and quality of network services.

The network system operators have to calculate their network tariffs converting the total volume of the allowed revenues to network tariffs. If network operators succeed in reducing their costs beyond those that are allowed on the basis of the determined revenue cap for the respective year, they may keep the delta between revenues and costs.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Pursuant to Part 3 of the Energy Industry Act grid operators are obliged to operate, maintain and develop as needed a safe, reliable, and efficient energy supply system. Therefore, system security lies in the responsibility of grid operators. They have to maintain and appropriately optimise, strengthen and expand the grid within economically reasonable limits. Operating a safe transmission grid especially includes a reasonable protection against threats for data and telecommunication systems which are necessary for a secure network operation. Therefore, the Federal Network Agency for Electricity has issued, in cooperation with the Federal Office for Information Security, a list of safety requirements.

Additionally, the Energy Industry Act grants transmission system operators specific rights to intervene by employing network-related measures and market measures in cases of danger to the system or malfunctioning. In the event of local power failures of the transmission networks, temporary congestions of networks or difficulties in ensuring frequencies, voltage and stability, it is considered to be a case of danger to the security and liability of the electricity supply system of the respective control area.

Power generators contribute to system security due to their obligation to accept measures of feed-in management carried out by the grid operators. In addition, power generators contribute to system security by delivering balancing power to the transmission system operators. Recently, also virtual power plants and battery storage providers were granted the so-called prequalification by the transmission operators in order to participate in the balancing power market. This is a developing market.

Also energy traders contribute to system security, being obliged to quarterly balance their balancing groups to maintain a balanced supply and demand in their area of responsibility.

Since 2011, the Federal Regulatory Authority is entitled to prevent operators of power plants from shutting down their installations, if such generation is relevant for the security of the system. Power plant operators are granted an indemnification in such event.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

The permission procedures regarding construction, operation and modification of transmission lines do not apply to distribution networks. However, a permit for construction, operation and modification of distribution lines is needed under Federal or Regional Control pollution provisions or public planning and building provisions or both. The requirements to be met for the construction and operation of a distribution network are similar to the requirements for transmission network operators.

Further, distribution network operators as well have to apply for an authorisation according to section 4 Energy Industry Act unless the grandfathering clause for incumbent distribution network operators applies (see question 8). The certification procedure regarding the unbundling provisions set out in section 4a Energy Industry Act for transmission network operators does not apply to distribution network operators.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Pursuant to the Energy Industry Act all system operators must provide final customers, neighbouring and downstream electricity distribution systems, power lines and generation facilities with connection to their system. The terms and conditions for network connection have to be reasonable, non-discriminatory, transparent and no less favourable than those used in comparable cases within their company or affiliated companies. As an exception to this rule, system operators may refuse the connection if they demonstrate that the provision of a system connection is impossible or unreasonable for operational reasons, or other financial or technical reasons. In the event of a shortage of capacity, the grounds must contain adequate information as to which specific measures would be necessary and what individual costs would be involved for the development of the network.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Generally, until today, distribution network expansion is mainly encouraged by allowing the distribution network operators to pass the capital expenditures for certain so-called investment measures on to the grid users by including the costs in the network tariffs. Until the end of the second regulatory period, distribution network operators are allowed to apply for an extension factor in order to be able to include costs for necessary expansion measures of the network in its revenue caps. However, the extension factor is a regulatory instrument that does not reflect the actual costs of the relevant extension measure but rather allows for including a specific lump sum of costs in the revenue cap. The relevant adjustment of the revenue cap on the basis of an extension factor can be made in the following year of the regulator period in which the extension has become effective.

Just recently the German government has adopted amendments to the regime of the determination of network tariffs for distribution system operators that also affect the encouragement of expansion measures of distribution network operators. From the third regulatory period onwards, distribution network operators are allowed to adjust their revenue caps every year according to the relevant capital costs incurred. The adjustment consists of a step-up of capital costs (as well as a reduction of capital costs. The amendments of the regulatory regime for distribution network operators aim at promoting necessary investments in the distribution networks.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Operators of energy supply systems must grant all persons access to their system on a non-discriminatory basis in accordance with duly substantiated criteria. They have to publish terms and conditions, sample agreements and tariffs for such system access on the internet. To structure the right of access, final costumers or suppliers of electricity must conclude agreements with those system operators from whose networks electricity is to be taken off or into whose networks electricity is to be fed. Grid users have the right to conclude such system agreements.

The rates for the access to the network (network tariffs) are regulated by the Federal Network Agency. Pursuant to the Incentive Regulation Ordinance the Federal Network Agency determines revenue caps for a period of five years for each network operator. The revenue cap is the upper limit of the allowed revenues that a network operator may earn via the grid fees. The determination of the revenue cap is based on a review of each network operators' costs in the so-called photo year and an efficiency benchmark of all network operators that is carried out by the Federal Network Agency. The efficiency benchmark results in an efficiency value for each network operator reflecting its efficiency in relation to the most efficient network operators. All network operators are to be gradually raised to the efficiency level of the most efficient companies.

Further, the network operator's costs are divided into two categories: controllable and non-controllable costs. Regarding the non-controllable costs the incentive regulation ordinance further distinguishes between permanently non-controllable costs and temporarily non-controllable costs. The permanently non-controllable costs are explicitly defined in the ordinance. Such costs do not need to be reduced by the network operator; hence, they can be in total included in the revenue cap. The temporarily non-controllable costs are the costs that are in principle controllable by the network operator but can be regarded as efficient and therefore do not have to be reduced by the network operator. The controllable costs are the costs that the network operator can control. They have to be reduced corresponding to the inefficiencies of the network operators. The amount of the inefficiencies is expressed by the efficiency value.

The determination of each revenue cap is based on a formula that basically contains the aforementioned cost-elements as well as further elements to reflect inflation, general sectoral productivity and quality of network services.

The network system operators have to calculate their network tariffs converting the total volume of the allowed revenues to network tariffs. If network operators succeed in reducing their costs beyond those that are allowed on the basis of the determined revenue cap for the respective year, they may keep the delta between revenues and costs.

As stated above (question 17), just recently the German government has adopted amendments to the regime of the determination of network tariffs for distribution system operators. From the third regulatory period onwards, distribution network operators are allowed to adjust their revenue caps every year according to the relevant capital costs incurred. The adjustment consists of a step-up of capital costs as well as a reduction of capital costs. With the amendment, the legislator abolishes the two-year time-lag between the costs incurred and the day when the distribution network operator is allowed to adjust its revenue cap accordingly.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

The sale of power is not subject to any approval in Germany. Pursuant to part 1 of the Energy Industry Act, energy supply companies that supply household costumers are obliged to notify the Federal Network Agency for Electricity the commencement and the termination of their activities. Recently, there had been disputes on the quality of energy supply with regard to companies that supply services to end consumers allowing them to set up their own decentralised generation.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

There is no tariff or other regulation regarding power sales in Germany. The only exception to the rule is the electricity basic supply which guarantees consumers a continuous energy supply. The basic supplier is obliged to publish its power sales tariffs on the internet. This refers to low voltage supply to private households.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Power prices on the wholesale energy market are based on market mechanisms. The Federal Cartel Office is allowed to review abusive market behaviour.

With regard to the wholesale of power via the energy exchange the EEX determines the rates for the sale of power by employing the Physical Electricity Index (Phelix). Phelix describes the base load (Phelix Peak) and peak load (Phelix Peak) price index published daily on the Power Spot Market for the German or Austrian market area.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Under the Energy Industry Act, the grid-bound supply of the general public with electricity and gas is to be ensured as safe, reasonable priced, consumer-friendly, efficient and environmentally compatible. There is no explicit public service obligation for energy suppliers in Germany, but the concept of delivering energy is qualified as service of general interest.

With regard to private households the concept of a general service provider secures the continuous supply of energy, called basic supplier. The energy supply company which supplies the most household customers in a given supply network area is qualified as basic supplier. There is no general service obligation for the energy supply company if the supply is unreasonable on economic grounds. In principle, the energy supplier is entitled to cut electricity supply only with a four-week notification if the customer is in default of payment.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

In Germany, the functions of the federal regulatory authority are performed by the Federal Network Agency (BNetzA). The decisions of the Federal Network Agency in accordance with the Energy Industry Act are made by the Ruling Chambers. The undertakings directly concerned may participate in the Ruling Chamber proceeding.

Concerning the regulation of transmission system operators the Federal Network Agency is also responsible for the enforcement of European Law. The Federal Network Agency was nominated to the EU as the competent authority for regulating the electricity and gas markets for the application of Regulation EC No 1228/2003 on cross-border exchanges in electricity.

As opposed to the Federal Network Agency's competences the Federal Cartel Office does not have any responsibilities concerning network tariff calculation, or towards transmission system operators' compliance with mandatory Energy Industry Act legislation. Nevertheless, in some cases the Federal Network Agency is obliged to cooperate with the Federal Cartel Office, particularly to make decisions with the consent of the latter.

The state regulatory authorities are responsible for regulatory issues concerning distribution system operators having fewer than 100,000 customers connected to their networks.

23 Scope of authority

What is the scope of each regulator's authority?

The measures of the Federal Network Agency with regard to energy regulation include the approval of network tariffs for the transmission and distribution of electricity and gas, the removal of obstacles that impede access to the energy networks for suppliers and consumers, the standardisation of the relevant processes for switching suppliers, and the improvement of conditions under which new power plants are connected to the networks. The Federal Network Agency is also responsible to facilitate the process of changing energy suppliers.

The Federal Network Agency shall initiate proceedings ex officio or upon petition. It not only enforces the rules of the Energy Industry Act and the relevant ordinances, but also of the European law, namely of the regulation on cross-border exchanges in electricity.

The Federal Network Agency is member of the Council of European Energy Regulators. The Agency takes part in the European Electricity Regulatory Forum (Florence Forum). This forum does not have rule-making power, but issues non-binding guidelines and addresses recommendations and opinions to the EU Commission. The Federal Network Agency participates in the work of the Agency for the Cooperation of Energy Regulators (ACER). In particular, this concerns the area of reviewing investment plans of transmission system operators and conducting assessments on how far the system operators' investment plans are consistent with the Europe-wide 10-year network development plan.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Federal Network Agency is a separate, higher federal authority within the scope of business of the German Federal Ministry of Economic Affairs and Energy, and has its headquarters in Bonn. On 13 July 2005, the Regulatory Authority for Telecommunications and Post, which superseded the Federal Ministry of Post and Telecommunications and the Federal Office for Post and Telecommunications, was renamed the Federal Network Agency.

The Federal Cartel Office is an independent competition authority based in Bonn. It is located within the scope of business of the German Federal Ministry of Economic Affairs and Energy.

Both authorities are independent of the regulated business.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Decisions of the Federal Network Agency can be appealed. The procedure is regulated in the Energy Industry Act and basically follows the rules of administrative jurisdiction, similar to cartel law procedures. The appeal against a decision must be filed within one month after service of the decision. This respite cannot be extended. The reasons for the appeal must then be handed in within another month starting with the filing of the appeal. This respite can be extended by the court.

With regard to litigation in this field, the Higher Regional Court in Düsseldorf is the exclusively competent court at first instance. The decisions of the Higher Regional Court in Düsseldorf may be appealed. The competent court for such appeal is the Federal Supreme Court.

In the event of a legal dispute, neither the Federal Network Agency nor the Federal Ministry of Economic Affairs and Energy can quash the decision made by the Ruling Chambers. In contrast to the provisions of the German Law prohibiting Restraints of Competition (GWB), a 'ministerial decision' is not foreseen.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Whether the Federal Cartel Office or the European Commission is responsible for providing clearance to an envisaged merger depends on the annual turnover of the involved businesses. If the combined businesses exceed specified thresholds in terms of global and European sales, the proposed merger must be notified to the

Update and trends

There is a trend towards own generation combined by storage applications by private households leading to an increasing degree of self-sufficiency (customers as 'prosumers'). Pilot projects in this field also include e-mobility.

European Commission; below the thresholds the Federal Cartel Office is responsible.

The Federal Cartel Office, located in Bonn, is assigned to the Federal Ministry for Economic Affairs and Energy. The Federal Cartel Office examines and assesses the effects the merger will have on competition. The internal organisation of the Federal Cartel Office is based on independent chambers. The decision on clearance for merger is prepared and taken by the responsible Chambers, which is specialised in matters of the electricity sector. Within the procedure the Chamber determines if the specific transaction would lead to dominant market position or a strengthening of such position. If the negative effects prevail, a merger project can be prohibited or in case of minor negative effects cleared under restrictions aiming on the reduction of the identified negative effects.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The Federal Cartel Office shall not provide clearance to a merger which has a significant negative impact on competition of the respective markets, in particular if the merger leads to a dominant market position or a strengthening of the market position. In this regard the Federal Cartel Office has to identify the respective markets and review the market position of all parties of the merger separately and jointly in order to review the competition before and after the respective merger.

After the merger filing has been submitted, the Federal Cartel Office must decide within one month whether the envisaged merger needs to be examined in more detail or can be cleared (first phase). If there is any indication that the merger may cause negative impact on competitive a formal in-depth investigation is initiated (second phase), extending the time frame up to a total of four months from the date of notification.

Decisions are usually issued within the initial investigation period of one month due to the common practice of informal pre-notification discussions with the Federal Cartel Office. In any case in which it is to be expected, that the Federal Cartel Office might have need for additional information or might raise doubts on the impact on competition it is advisable to contact the Federal Cartel Office in advance.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

With regard to the value chain of the electricity sector the generation, trade and supply of power to customer shall take place on free, non-regulated markets. To ensure competition on these markets the Federal Cartel Office and respective Cartel Offices of the German states are empowered to investigate and prosecute anticompetitive or manipulative practices. The grid operation as transmission and distribution of the power is due to the monopoly structure of the grid subject to specific grid regulation to ensure non-discriminatory grid access and grid usage. The grid regulation is allocated to the Federal Network Agency and respective Regulatory Authorities of each state. However, the Energy Industry Act provides for Federal Cartel Office and Federal Network Agency the obligation to cooperate with regard to several tasks.

In order to combat insider trading and market manipulation on the wholesale energy market the European Regulation on Wholesale Energy Market Integrity and Transparency (REMIT) entered into force on 28 December 2011. With the introduction of REMIT, ACER and the national regulatory authorities have obtained the opportunity to ensure market integrity by comprehensive monitoring of wholesale energy trading. ACER will be responsible for collecting and analysing wholesale markets and other relevant data to identify possible instances of market abuse and will notify the concerned National Regulatory Authority (BNetzA). After an initial assessment and when there is ground to believe that abusive behaviour has actually occurred BNetzA will have to carry out investigations and put in place penalties to help stop and to prevent market manipulation.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Apart from articles 101 and 102 TFEU (AEUV) and the EU Council Regulation No. 1/2003 on the implementation of articles 101 and 102 TFEU (AEUV), the general provisions of the German Act against Restraints in Competition (GWB) apply to determine whether a conduct is anticompetitive or manipulative. In this regard the GWB provides a sector specific provision on abuse pricing. According to section 29 GWB, an undertaking that is a supplier of electricity or pipeline gas (public utility company) on a market in which it, either alone or together with other public utility companies, has a dominant position, is prohibited from abusing such position by demanding fees or other business terms which are less favourable than those of other public utility companies or undertakings in comparable markets, unless the public utility company provides evidence that such deviation is objectively justified, or demanding fees that unreasonably exceed the costs. Costs that would not arise to the same extent if competition existed must not be taken into consideration in determining whether an abuse remains unaffected.

The provision itself refers to comparable markets. Thus, the Federal Cartel Office may apply the 'comparable market concept', which is meant to compare the respective market with spatial neighboured markets for the same product; with the same market one or a couple of years ago or with a market for a different, but very similar product.

Another procedure to determine whether a specific conduct or practice could be anticompetitive is the 'sector inquiry'. If the Federal Cartel Office or any other regulation authority suspects that competition in a certain sector might be restricted, the regulation authority tries to gain a deeper understanding of the way in which the relevant markets and market levels function throughout a further investigation of the specific sector and the practices concerned.

Furthermore, the Federal Cartel Office – in collaboration with the Federal Network Agency – observes possible developments in the energy sector (this is called energy monitoring). As laid down in section 48 GWB, the Federal Cartel Office observes in particular the degree of transparency and the degree and effectiveness of liberalisation as well as the extent of competition on the wholesale and retail levels and on the energy exchanges. The results of the monitoring activities are published by the Federal Network Agency and the Federal Cartel Office in an annual monitoring report.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

In general the Federal Cartel Office can demand discontinuation of the anticompetitive or manipulative behaviour. Further, Federal Cartel Office can impose fines. The amount of the fine shall refer to the economically impact of the anticompetitive or manipulative practice. At least, Federal Cartel Office can demand reimbursement to the customers.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Under the Foreign Trade and Payments Act, the trade in goods, services, capital, payments and other types of trade with foreign territories, as well as the trade in foreign valuables and gold between residents

(foreign trade and payments) is, in principle, not restricted. There are exemptions to this rule if national security interests are concerned.

Due to the European Energy Package Germany introduced a rule on the investment of third country investors to German transmission grids. In case that certification is requested by a transmission system owner or a transmission system operator that is controlled by a person from a third country, the regulatory authority shall notify the European Commission. The regulatory authority shall also notify the Commission if a third party investor is going to acquire control of a transmission system or a transmission system operator.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

The construction of interconnectors as DC cables in Germany requires a specific planning approval process pursuant to the Energy Act (see answer to question 9). This planning procedure has a 'concentration effect', which means that it concentrates all necessary public law approvals. In addition, such planning procedure includes a specific hearing process to involve citizens who are affected by the project.

Network operators – including operators of interconnectors – are supposed to obtain an authorisation issued by the competent regional authority according to state legislation. Such authorisation shall guarantee reliability of the operation in terms of personnel, as well as the necessary technical and economic capacity. In addition, on a high-voltage transmission level the grid operator needs certification to assure correct ownership unbundling. Such certification is issued by the national regulatory authority BNetzA.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

There is no national regulation on cross-border electricity exchanges. The relevant rules are on the European level. The most important regulation for the cross-border use of networks and thus for the management of interconnections is the EU Regulation on Cross-border Exchanges in Electricity (Regulation (EC) No 714/2009).

This regulation contains mandatory provisions for the settlement of the cross-border electricity trade. The scope of the regulation includes in particular: the setting of harmonised principles on cross-border transmission tariffs, rules for the handling of the congestion management, in particular the exchange of information, and the establishment of a compensation mechanism for (unintended) cross-border flows of electricity. In order to facilitate the settlement of commercial transactions over the networks, transmission system operators (TSOs) in the neighbouring countries are obligated to cooperate. In particular, they have to organise the non-discriminatory access to the capacities of the interconnections of their transmission networks and to ensure the cross-border exchange of information between the TSO involved.

This regulation on cross-border exchanges in electricity indirectly affects the wholesale market of electricity as far as energy supplies and cross-border capacities take place within 'implicit auctions', in which energy supply and network capacity is sold as a bundled product.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The unbundling rules provide that vertically integrated energy companies and legally independent system operators that are affiliated with vertically integrated supply companies are obliged to ensure transparency and non-discriminatory operation of the system. In general, unbundling means that those companies must ensure the independence of system operators from other energy supply activities, namely generation and supply of electricity.

Vertically integrated energy companies must ensure that their network business is conducted by a legally independent network operator. The network operator is allowed to remain part of an affiliated group of companies. The network operator must also be independent with regard to organisation, decision-making authority and network operation. This means that employees on a high or medium management level have to belong to an operational unit of the network operator and must not be involved in activities for the operational units of the vertically integrated energy supply company.

Apart from the restrictions provided in the Energy Industry Act, there are some restrictions regarding merger control in the GWB as well. This is in particular the case if the merger is expected to create or strengthen a dominant market position (see question 25).

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

The Federal Network Agency is responsible for the enforcement of the above mentioned restrictions.

In the event of a violation of the unbundling obligations the Energy Industry Act provides that the regulatory authority may enforce its orders through fines.

WHITE & CASE

Sabine Schulte-Beckhausen **sabine.schulte-beckausen@whitecase.com**
Guido Hermeier **guido.hermeier@whitecase.com**
Kristin Spiekermann **kristin.spiekermann@whitecase.com**

Graf-Adolf-Platz 15
40213 Düsseldorf
Germany

Tel: +49 211 49195 0
Fax: +49 211 49195 100
www.whitecase.com

Ghana

Kimathi Kuenyehia, Sarpong Odame and Reginald Nii Odoi

Kimathi & Partners, Corporate Attorneys

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Policy framework

Ghana's electricity industry is unbundled into three main sub-sectors, namely electricity generation, transmission and distribution. The policies of government for the electricity sector are mainly in relation to these three sub-sectors.

The National Energy Policy 2010 (the Policy) is the underlying policy guiding governmental actions and strategies in the power sector. Generally, the goal of the government was to become a major exporter of power in the West African sub-region by 2015. This was intended to be achieved through capacity addition, modernisation of transmission and distribution infrastructure. The policy also focuses on institutional and regulatory reforms intended to create competitive electricity markets.

The objective of the government under the National Energy Policy was to increase installed generation capacity from about 2,000MW to 5,000MW by 2015 and to achieve universal access by 2020.

As at 2014, Ghana had achieved only 2,830MW of installed generation capacity. According to the National Energy Statistics 2016 from the Energy Commission, Ghana increased its installed generation capacity from 2,830MW in 2014 to 3656MW at the end of 2015.

The policy objective for the transmission market is to provide adequate, safe and reliable electricity transmission network. This may be achieved by supporting the mobilisation of commercial and domestic capital resources to supplement external funding for transmission infrastructure development. Also, the policy is to enforce technical regulations and operational standards, and to provide support for the maintenance of existing transmission infrastructure.

The policy objective for the distribution market is to seek adequate investment to improve the electricity distribution network and thereby reduce high system losses and improve the poor quality of electricity supply. This is intended to be achieved by assisting distribution utilities financially to improve their operations.

To secure future fuel supplies, the policy objective is to increase and diversify the fuel mix in power generation. The policy requires government to, inter alia, support infrastructure for new fuel supply sources, develop coal power, and support regional integration of energy resources. The government also intends to achieve universal access to electricity by extending the reach of electricity infrastructure to all communities by 2020.

With regard to electricity pricing, the government's objective is to ensure that electricity pricing is efficient and competitive while providing rates that are affordable.

Power sector reforms were initiated in 1995 to ensure an efficient and effective power sector and also to allow increased private-sector investment and participation. The policy objectives include to promote competition in the generation of electricity through the development of a wholesale electricity market, create the environment for retail competition in the electricity market, facilitate the entry of independent power producers (IPPs), and ensure improved performance of electricity utility companies.

The strategic policy focus for the sector is to attract investment to improve and expand the capacity of the existing infrastructure to deliver reliable power supply services in the short to long term and to be net exporter of electricity in the West African sub-region.

Legislative framework

In 2014, government set up the Ministry of Power as part of a restructuring of the power sector to ensure more stability and security of power. Prior to this, the Ministry of Energy had the oversight responsibility for the power sector. The Minister responsible for power is mandated to drive the sector and achieve the national objective of achieving sustainable generation, supply and efficiency of power to match the growth the economy is experiencing. The Ministry of Power has oversight responsibility for all the regulatory activities and generally provides policy and investment direction in the power sector.

Ghana has two main regulatory agencies for the power sector, namely the Energy Commission and Public Utilities and Regulatory Commission.

The Energy Commission Act 1997 (Act 541) (the Energy Commission Act) established the Energy Commission. The commission's main object is to regulate and manage the utilisation of energy resources in Ghana and to coordinate all policies in relation to them. The commission is responsible for granting licences to public utilities for the transmission, wholesale supply, distribution and sale of electricity and natural gas in Ghana.

There are a number of subsidiary legislations and guidelines enacted under the authority of the Energy Commission Act for the proper management and regulation of the power sector of Ghana.

The Public Utilities and Regulatory Commission Act 1997 (Act 538) (the PURC Act) established the Public Utilities Regulatory Commission (the PURC). The PURC's responsibility is to approve rates charged by public utilities, ensure competition among public utilities, monitor standards of performance of public utility service provision and ensure the protection of consumer rights.

There are several other Acts of Parliament, legislative instruments and sector codes enacted for specific purposes within the electricity industry. The Volta River Development Act 1961 (Act 46) (the VRA Act) established the oldest power entity in Ghana – the Volta River Authority (VRA). The VRA is wholly owned by the government of Ghana. The VRA, through its subsidiary, the Northern Electricity Development Company (NEDCo), is responsible for electricity distribution in the northern regions of Ghana. The Electricity Company of Ghana, another wholly state-owned utility, is responsible for the distribution of power in the southern regions. The VRA Act tasked the VRA with the responsibility to generate electricity by means of the water power of the Volta River and by any other means. The VRA also supplies electrical power to distribution companies, bulk customers and the townships of Akosombo and Kpong.

As part of power sector reforms in 2005, the VRA's mandate was restricted to electricity generation and the electricity transmission functions of the VRA were transferred to the Ghana Grid Company (GridCo). GridCo is responsible for operation of the National Interconnected Transmission System (NITS), bulk power purchase of electricity from generators of electricity and sale to NEDCo and ECG. It is important to highlight, that it is expected that NEDCo's distribution functions in the northern regions will be transferred to ECG in order to create a national distribution utility. Independent Power Producers

who intend to transmit electrical power over the NITS are required to enter into a connection agreement with GridCo.

In 2007, Parliament enacted the Bui Power Authority Act 2007 (Act 740) (the Bui Power Act) which established the Bui Power Authority to oversee the development of the Bui hydroelectric power project on the Black Volta River and any other potential hydroelectric power sites on the Black Volta River.

The Renewable Energy Act 2011 (Act 832) (the Renewable Energy Act) is the most recent energy-related legislation geared towards the encouragement of Ghana's drive to boost the renewable energy sector.

The object of the Renewable Energy Act is to provide for the development, management and utilisation of renewable energy sources for the production of heat and power in an efficient and environmentally sustainable manner.

The Energy Commission developed the National Electricity Grid Code (the Grid Code) in 2009, which is intended to set out the requirements, procedures, practices and standards that govern the development, operation, maintenance and use of the NITS in Ghana.

The overarching objective of the code is to ensure that NITS provides fair, transparent, non-discriminatory, safe, reliable, secure and cost-efficient delivery of electrical energy.

The Grid Code describes the responsibilities and obligations associated with all the functions involved in the supply, transmission and delivery of bulk electric power and energy over the NITS including the functions of the electricity transmission utility (ETU), a NITS asset owner, a wholesale supplier, a distribution company and a bulk customer.

To ensure that electric power is produced, transmitted and distributed in an environmentally sustainable manner, the Environmental Protection Agency Act 1994 (Act 490) (the EPA Act) was enacted in 1994. The EPA Act established the Environmental Protection Agency (the EPA) as the principal environmental watchdog in Ghana.

All electricity utilities must receive environmental permit from the EPA before they undertake any project. The EPA ensures compliance with the laid down environmental impact assessment procedures in the execution of electricity projects.

The existing legal regime envisages a spot as well as a bilateral market for power trading. The present position is largely bilateral as there are not yet enough players for a fully functioning liquid spot power trading market. The GRIDCo, as market operator, is currently working at establishing systems and procedures to support enhanced market operations.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Generally, electricity goes through a three-step process before arriving at the end user for consumption. First, power is produced from generators that are usually located far from the load centres. Second, the power is transported over the transmission grid, which is composed of transmission lines, transformers, and other components, to the bulk load distribution substations. Third, from bulk load distribution substations, power is delivered to the individual customer sites using distribution lines.

The generation market is made up of two main players, namely the government (through the VRA and Bui Hydroelectric Company) and the IPPs. The VRA operates a total installed electricity generation capacity of 2,434MW. This is made up of two hydroelectric plants on the Volta River, with installed capacities of 1,020MW and 160MW at Akosombo and Kpong. The VRA also operates a 330MW Combined Cycle Thermal Plant at Aboadze, near Takoradi.

VRA, through its joint venture company, Takoradi International Company (TICO), jointly owned with TAQA, from Abu Dhabi in the United Arab Emirates, operates the 330MW combined cycle thermal plant at Takoradi. An additional development 132MW (T3) Magellan plant was commissioned at Aboadze in 2012.

The VRA also operates three major plants in Tema. The 110MW Tema Thermal 1 Power Plant, the 80MW Mines Reserve Plant, and the 220MW Thermal Plant located at Kpone, near Tema. The VRA is also planning additional development of 100–150MW of wind power at locations in the southern part of Ghana and up to 12MW of solar power generation in the northern part of Ghana. The VRA has begun the installation of a 2MW solar plant.

There are a number of IPPs operating in the generation space in Ghana, with a total installed generation capacity of 1,210MW. Some of these IPPs are Sunon-Asogli, Cenit Power Plant, Karpower Barge, Ameri Energy Power, among others. In the renewable energy sector, Africa Plantations for Sustainable Development is currently developing an eucalyptus plantation to power a proposed 60MW power plant for the national grid. Other companies providing renewable energy in Ghana include, Soater Solar Ghana Limited, Orion Energy Ghana Limited, Signik Energy Limited, among others.

After generation, electricity is transmitted. In 2006, GRIDCo was created out of VRA and was tasked with the wholesale power transmission. Currently, GRIDCo is the only company responsible for transmission of electricity in Ghana. There are no private players in the transmission sub-sector. GRIDCo operates the NITS and all power producing companies that intend to supply electricity over the national grid to the various load centres are required to enter into a connection agreement with GRIDCo in order to connect to the NITS.

Ghana has an extensive transmission system that covers all the regions of the country. The transmission system is an interconnected network that supports the bulk transfer of electricity over long distances from generation facilities to distribution centres called bulk power distribution substations. While generation's role is to make sure that electricity is available when customers demand it, transmission's role is to make sure electricity is available where customers need it.

This high-voltage transmission network connects generation sites in Akosombo, Aboadze, Takoradi, Kpong and Tema to the various load centres around the country. The network features over 4,000km of high-voltage electric transmission lines that connect to more than 40 substations.

The primary backbone of Ghana's transmission system is a network of 161kV, 69kV and 225kV lines and substations. This primary network is supplemented with a sub-transmission system of 34.5kV lines and a single 69kV line in the lower Volta region – the 34.5kV network is sometimes classified as distribution. The ongoing implementation of 330kV projects will see 330kV replacing 161kV as the primary transmission voltage.

Ghana's high-voltage transmission system interconnects with Togo and Benin via a double circuit 161kV transmission line connecting the Akosom Generating Plant in Ghana to Lome in Togo, and with the Ivory Coast via a single circuit 225kV 220km transmission line between Prestea substation in the Western Region of Ghana and Abobo substation. A small network of low-voltage lines connects Ghana to the border towns of Po and Leo in Burkina Faso and Dapaong in Togo.

These cross-border interconnections allow Ghana to trade power with its neighbouring countries. Regional efforts have been under way to integrate the transmission networks of Economic Community of West African States (ECOWAS) member states to facilitate power trading among the regional entities. In this regard, the West African Power Pool (WAPP) has begun efforts to build regional transmission lines to interconnect major load centres.

The distribution system is a network of low-voltage distribution lines that deliver electricity directly to customers. The distribution system is generally considered to begin at the bulk power distribution substation where GRIDCo delivers power to the wholesale power buyers and end at the retail consumer's meter. Beyond the meter lies the customer's electric system, which consists of wires, equipment and appliances.

Electricity distribution and sale services are currently conducted by three companies: ECG; NEDCo, a wholly owned subsidiary of VRA; and Enclave Power Company Limited.

Substations on the transmission system receive power at higher voltages and lower them to lesser volts to feed the distribution systems. The distribution system consists of the poles and wires commonly seen in neighbourhoods. At key locations, voltage is again lowered by transformers to meet customer needs.

ECG operates in the southern part of Ghana comprising the Ashanti, Western, Eastern, Central, Western and Volta regions. The ECG network consists of about 77,000km of service lines, connecting 24 bulk supply points (BSPs).

ECG has more transformer capacity than the present peak demand but growth in demand in certain areas has resulted in under-capacity in those areas.

ECG serves about two million customers including residential, commercial and some large industries. These include nine bulk customers within the ECG network infrastructure. These bulk customers, even though they are embedded in the ECG system have a choice to opt to buy power from VRA or any other wholesale supplier except that they are required to pay for the use of the ECG system to reach their facilities.

NEDCo's operations cover largely the northern part of Ghana comprising the Brong-Ahafo, Northern, Upper East and Upper West regions. NEDCo's distribution network consists of 5,488km of medium-voltage lines and 7,832km of low-voltage (415V) lines connecting 24 BSPs. The NEDCo system has transformer installed capacity of 200MVA compared with its average peak load of 130MVA.

NEDCo operates at 34.5kV, 11kV and 400V voltage levels. NEDCo serves over 350,000 customers including residential, commercial and some large industries.

NEDCo has no bulk customers under its jurisdiction primarily because of the absence of large industrial customers in their areas of operation. The northern part of the country is comparatively underdeveloped.

Enclave Power Company Ltd is the only privately owned electricity distribution company, licensed by the Energy Commission in 2009 to distribute and sell electricity within the Free Zones Enclave at Tema Industrial Area. Enclave Power Company's network consists of nearly 3km of service lines connecting one BSP at the New Tema substation.

Enclave Power Company Ltd currently serves 17 industrial and large commercial customers operating within the Tema Free Zones Enclave. The consumption of the customers within the Enclave Power Concession was estimated at about 17.8GWh with maximum demand well in excess of 32.0MVA in 2008.

The power market is evolving and there is a lot of interest being shown in the sector by IPPs. GRIDCo as the market operator is working towards putting systems and procedures in place to support market operations.

The new market structure enables and encourages the free entry of IPPs into the generation market, creating a competitive generation market which, when combined with open access to transmission, also facilitates a bulk power trading market. The structure also emphasises decentralisation at the distribution level, with plans for eventually adding more distributors, each operating in a defined geographic service area.

All bulk customers are permitted to purchase electricity directly from any wholesale suppliers of their choice at prices negotiated directly between the parties. In other words, the bulk customer has the prerogative to decide which wholesale supplier it is willing to contract with.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

By virtue of the Energy Commission Act, participation in any segment of the power sector, either for generation, transmission, wholesale supply, distribution or sale of electricity, requires a licence.

The Energy Commission is required to make a decision of any application within a maximum period of 16 days. Applications will be granted as a matter of course unless there is compelling reason not to do so. Such reasons must be founded on technical data, national security concerns, public safety or any other reasonable justification.

Generators wishing to be connected to the transmission system must enter into an electrical connection agreement or transmission services agreement with GRIDCo.

Under the Renewable Energy Act, every person who intends to engage in a commercial activity in the renewable energy sector requires a licence. The commercial activities in the renewable energy industry are production, transportation, storage, distribution, sale and marketing, importation, exportation and re-exportation and installation and maintenance.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The policy for the transmission market is to provide adequate, safe and reliable electricity transmission network. To achieve this, the Board of the Energy Commission in 2008, put in place the Electricity Transmission (Technical, Operational and Standards of Performance) Rules 2008 (the Transmission Rules). The purpose is to establish the requirements, procedures, practices and standards that govern the operation and use of the NITS.

Under the Transmission Rules, GRIDCo is required to operate the NITS to offer fair, transparent, open access and non-discriminatory services to grid participants.

In order to connect to the NITS, the operator of a generation facility is required, among others, to design, install and maintain its plant and equipment to meet the requirements of the connection requirements of GRIDCo. Further, the operator must operate its plant and equipment in accordance with dispatch instructions of GRIDCo and to meet system performance and reliability requirements in a manner that is consistent with the reliable operation of the transmission system.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Available renewable energy sources

In Ghana, the government has policy and legislation frameworks to encourage power generation based on alternative energy sources. It is government policy to increase access to modern forms of energy.

Ghana has a sub-sector for renewable energy. According to the Renewable Energy Act, renewable energy means includes energy obtained from non-depleting sources including wind, solar, hydro, biomass, bio-fuel, landfill gas, sewage gas, geothermal energy and ocean energy. Ghana is well endowed with renewable energy resources, particularly biomass, solar, wind energy resources, and to a limited extent mini-hydro.

The goal of the renewable energy sub-sector is to increase the proportion of renewable energy, particularly solar, wind, mini hydro and waste-to-energy in the national energy supply mix and to contribute to the mitigation of climate change.

The development and use of renewable energy and waste-to-energy resources have the potential to ensure Ghana's energy security and mitigate the negative climate change impacts of energy production and use as well as solve sanitation problems.

Biomass is Ghana's dominant energy resource in terms of endowment and consumption. Biomass resources cover about 20.8 million hectares of the 23.8 million hectare land mass of Ghana, and is the source of supply of about 60 per cent of the total energy used in the country. The vast arable and degraded land mass of Ghana has the potential for the cultivation of crops and plants that can be converted into a wide range of solid and liquid biofuels.

The production, transportation, sale and pricing of woodfuels are all undertaken by the private sector except for taxes and levies, which are regulated by local government authorities. The woodfuels business will continue to be operated and managed by the private sector.

The development of alternative transportation fuels such as gasohol and other biofuels can provide substitute fuels for the transportation sector and help diversify and secure future energy supplies of Ghana.

The major challenge in biomass energy supply is how to reverse the decline in the wood-fuel resource base of the country and further sustain its production and use by improving the efficiency of production and use.

The biomass policy focuses on improved production and efficient use of biomass in the short term while increasing regeneration and fuel substitution in the medium to longer term, as well as shifting from the use of biomass to alternative sources of energy.

By virtue of its geographic location, Ghana is well endowed with solar resources that could be exploited for electricity generation and low heat requirements in homes and industries. Solar energy utilisation has, however, been limited owing to its comparatively higher cost.

The government is committed to improving the cost-effectiveness of solar and wind technologies by addressing the technological difficulties, institutional barriers, as well as market constraints that hamper the deployment of solar and wind technologies.

A major challenge in the development of solar and wind is the high cost of these energy sources owing to the current state of their technology.

Waste-to-energy projects have become a very important mechanism for the management of the growing sanitation problem facing urban communities as well as a means of contributing to energy supply and security. Significant amounts of wastes are generated in Ghana. These include municipal waste (both solid and liquid), industrial waste and agricultural waste.

There are many energy technologies which can convert these waste materials into electricity, heat and fuel. The conversion technologies include combustion, gasification, pyrolysis, anaerobic digestion, fermentation and esterification.

Some waste-to-energy technologies that have been developed in Ghana are anaerobic fermentation of municipal waste and industrial liquid wastes to produce biogas for heating and electricity generation, combustion of solid wastes to produce electricity in combined heat and power (CHP) systems.

Government policies and legislative framework

The Renewable Energy Act is the most recent energy-related legislation geared towards the encouragement of Ghana's drive to boost the renewable energy sector in Ghana.

The key policy focus is to engage Ghanaian engineers and scientists to cooperate with other experts to bring down the cost of renewable energy technologies in order to make them competitive as well as creation of fiscal and pricing incentives to enhance the development and use of renewable energy. Renewable energy technologies that are competitive will be promoted.

Government intends to diversify the national energy mix by implementing programmes to support development and use of renewable energy sources. Under the Renewable Energy Act, there are financial incentives (including a lucrative feed-in tariff) for renewable energy projects.

More specifically, the PURC has the power to mandate feed-in tariffs for renewables which includes a requirement that, for each energy purchase, an offtaker will have to obtain a certain percentage from renewable sources to benefit. The commission is tasked with recommending exemptions from taxes, duties and levies with respect to machinery, equipment and other input into renewable projects.

The feed-in tariff set by the PURC remains in force for a 10-year period and subsequently subject to review, every two years thereafter.

Free zone developers and enterprises granted licences under the Free Zones Act are exempted from the payment of income tax on profits for the first 10 years. The income tax rate after 10 years does not exceed a maximum of 8 per cent of the profit.

The benefits enjoyed by operators in the free zones include guarantee against expropriation, unconditional transfers of profits, dividends, charges and fees, remittances and other payments through an authorised dealer bank in free convertible currency.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Environmental concerns are a prominent part of every industry today and the electric power industry is no exception. Climate change emerged on the political agenda in the mid-1980s with the increasing scientific evidence of human interference in the global climate system and with the growing public concern about the environment.

Electricity supply is currently vulnerable to climate change. About 67 per cent of electricity generation in the country is from hydropower and 33 per cent is from thermal generation using diesel (Energy Statistics 2006), with a small contribution (less than 1 per cent) from small-scale solar systems. By 2020 the energy supply is expected to be more diversified, according to the National Energy Plan for 2006–2020, with a larger contribution from natural gas and renewables, and potentially from nuclear power.

The production and use of energy impact on the environment and global climate in varying degrees. The exploitation of biomass for energy purposes results in deforestation, while the use of fossil-based fuels contributes to climate change.

Ghana's participation in the Stockholm Conference in 1972 signified the beginning of the country's desire and willingness to make concerted and conscious efforts at the management of its environment.

At the Earth Summit in Rio 20 years later, Ghana and the world moved closer to the objective of living in harmony with our environment by signing the Rio Conventions.

Before a person undertakes any activity or operation in relation to electricity, that person must obtain the necessary environmental approvals and permits valid for a period of 18 months. The EPA will not grant an environmental permit unless the applicant submits an environmental impact assessment (EIA).

In addition to the granting of a licence by the Energy Commission, before any project can take place, the EPA must give a permit for the project after a detailed environmental impact assessment has been carried out as regards the potential effects of the project on the environment.

Ghana generates most of its power from hydroelectric facilities, which do not cause emissions of harmful elements into the atmosphere. But their large reservoirs have some impact on the environment by flooding large areas, dislocating people, changing the ecology and causing silt formation.

Transmission lines may require intrusion on natural areas. They may be visible from scenic areas or intrude on residential neighbourhoods. They may destroy or disrupt wildlife habitats. Therefore prospective operators in the electricity market seeking to obtain licence must provide environmental disclosure to the Energy Commission. Prior to construction, the applicant must acquire siting clearance (siting permit).

The applicant for licence must provide an EIA report certified by the EPA and an environmental permit or permanent environmental certificate issued by the EPA.

The government's policy on climate change is that there will be a shift towards generation from renewable energy sources. Thermal generation using crude oil will shift towards the use of natural gas. Consumption of power will decline due to energy conservation methods and cost of electricity might increase owing to the high cost of generation from using renewable energy technologies.

The medium-term policy objectives for the achievement of the energy sector goals include steps to minimise environmental impacts of energy supply and consumption through increased renewable energy and efficient energy delivery.

The government's strategic goal is to ensure that energy is produced, supplied and used in an environmentally sustainable manner. The strategies will focus on the conduct of strategic environmental assessment and EIA studies and social impact assessment studies of all energy projects, with associated adaptation and mitigation plans for environment and climate change.

The government's policy on climate change in relation to energy sector includes the following resolutions:

- to adopt an inter-sectorial approach to energy planning and development which integrates energy development with energy conservation, environmental protection and sustainable utilisation of renewable energy resources;
- to reduce the pressure on forests for wood-fuels and encourage the use of renewable energy resources in order to reduce the use of fossil energy;
- to ensure that rigorous feasibility studies are undertaken for hydroelectricity facilities and other significant generating facilities all of which must be subjected to environmental impact assessment; and
- to maximise the use of the nation's hydrocarbon resources in the production and distribution of energy.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Ghana's Renewable Energy Act provides a regulatory framework which supports electricity storage, research and development. The

regulatory framework mandates anyone who seeks to engage in any storage or other commercial activity in the renewable energy industry to obtain a licence to be granted by the Energy Commission. The licence may require the installation of a suitable facility for the storage of the renewable energy, which suitability shall be determined by the Energy Commission.

The establishment of the Renewable Energy Fund and Energy Fund is to promote research and development of storage solutions. The objects of these funds is basically to provide financial resources for the promotion, development, sustainable management and utilisation of electricity and renewable energy sources.

The funds are primarily applied to the provision of financial incentives, feed-in tariffs, capital subsidies, equity participation, etc, for projects related to the development and utilisation of energy resources including storage solutions.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Policy framework

In 1964, Ghana decided to undertake the Ghana Nuclear Reactor Project. The project was intended to introduce nuclear science and technology into the country and to exploit the peaceful applications of nuclear energy for national development.

At present, the government's policy is to diversify the energy mix by exploring options to develop nuclear energy. The goal is to develop nuclear power as an option for electricity generation in the long term.

Ghana has participated and is still participating in coordinated research projects with the International Atomic Energy Agency (IAEA) which helps to increase the nuclear knowledge base of the country. Ghana Atomic Energy Commission (GAEC) is in close contact with other International Nuclear Agencies such as Global Nuclear Energy Partnership.

Nuclear Power Planning Committee (NPPC) involving stakeholder institutions was established in 2008 for the formulation of the nuclear power policy and development of the basic elements of nuclear infrastructure. Based on the NPPC's recommendations, the government took a cabinet decision in 2008 to introduce nuclear energy into Ghana's energy mix.

Human resource capacity building currently in place is in two forms (ie, degree and non-degree awarding programmes).

In the degree awarding category, the GAEC has established a Graduate School of Nuclear and Allied Sciences in collaboration with the University of Ghana with assistance from the IAEA to award masters and PhD degrees in nuclear science.

The non-degree training programmes involve the use of the 30kW research reactor in teaching and training of scientists and technicians in the field of reactor operation, physics, safety, engineering, maintenance etc.

IAEA has also formulated technical cooperation projects such as GHA0008; planning for sustainable energy development, GHA0009; human resource development and nuclear technology support, GHA0011, etc to up the country's nuclear knowledge base.

Ghana participates in IAEA training courses and workshops on national, regional and international levels.

Legal and regulatory framework

The Atomic Energy Commission Act 2000 (Act 588) provides the legislative framework for nuclear power in Ghana. The Act deals with national energy policy including economic and commercial considerations, with a clear designation of responsible institutions or bodies, including their relationships with nuclear power.

The Atomic Energy Commission is the independent regulatory authority responsible for the safety, security and safeguards of nuclear power. This includes a system of licensing, inspection and enforcement covering all subject areas of nuclear law.

At the international level, there are some basic international legal instruments that Ghana has to ratify and implement to show commitment to peaceful use and application of nuclear technology.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Construction and operation of transmission networks require the acquisition of an electricity transmission licence.

According to the Transmission Rules, the transmission system comprises electricity plant and equipment within the borders of Ghana that function or are operated at any voltage higher than 36kV as well as any associated feeder or supply equipment that are for shared or for common use.

The ETU is the exclusive and independent operator of all transmission assets irrespective of ownership and plays the central role in respect of activities related to the NITS. The ETU transports electricity from the producers to bulk consumers. GRIDCo is the sole owner and operator of the NITS.

All prospective participants in the deregulated segment of Ghana's electricity supply industry must obtain a transmission licence from the Energy Commission. They must also negotiate and conclude interconnection service agreement with the ETU.

The ETU and all grid participants must comply with all relevant laws, the requirements of the Grid Code, permits, prudent utility practice and applicable international standards. Generators wishing to be connected to the transmission system must enter into an electrical connection agreement or transmission services agreement with GRIDCo.

To ensure transparency and non-discriminatory access to the relevant information, the ETU must make available to the public at its offices the procedures for obtaining and terminating transmission interconnection services agreements with any licensee.

A transmission licence authorises the licensee: to monitor and control the operation of the national interconnected network to provide open access transmission and interconnection services; and to provide open access transmission and interconnection services to operators domestically and internationally.

There are three stages in acquiring an electricity transmission licence. At stage one the prospective operator must acquire a provisional licence.

At stage two, the prospective licensee must obtain a siting clearance (siting permit) and construction permit (authorisation to construct). A construction permit authorises the operator to physically construct its machinery and plants on the approved site. Stage three involves the acquisition of an operational licence (authorisation to operate). This authorises the operator to operate.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Every bulk power customer (distribution utilities, companies, etc) is eligible to obtain transmission services at a fee if it satisfies all established technical and operational requirements.

A grid participant must be a legal entity having a valid connection agreement with the ETU for the purposes of:

- constructing, owning and providing NITS infrastructure or ancillary services;
- injecting, wheeling, or offtaking power for its own use or for retail; or
- exchanging power either with the electricity networks of neighbouring countries or within the WAPP.

By virtue of section 11 of the Energy Commission Act, participation in any segment of the power sector, either for transmission, wholesale supply, distribution or sale of electricity, requires a transmission licence.

A transmission licence is subject to the conditions determined by the Energy Commission. The commission is required to make a decision of any application within a maximum period of 16 days. Applications will be granted as a matter of course unless there is compelling reason not to do so. Such reasons must be founded on technical data, national security concerns, public safety or any other reasonable justification.

A distribution company or bulk customer who wishes to receive power from the NITS must design, construct and operate its network

connected to the NITS in accordance with prescribed standards and in accordance with the instructions of the ETU.

GRIDCo is responsible for the good governance and management of the NITS in accordance with the Grid Code and guided at all times by generally accepted best practices for an independent system operator.

All wholesale suppliers, distribution companies and permitted bulk customers have the opportunity to connect to the NITS and have fair and equitable access to the services provided by the ETU.

No facilities can be connected without a minimum arrangement for communications, metering and protective relaying being in place.

Any operator that wants to obtain transmission services must negotiate and execute a Connection Agreement with the ETU before the completion of the installation, erection or construction of the connection to the NITS. The Connection Agreement sets out the terms and conditions for connection to the NITS and provision of service.

The ETU is empowered to spell out its own transmission conditions and charges in the transmission agreement subject to approval by the PURC.

The Energy Commission in consultation with the PURC prescribes standards of performance for the supply, distribution and sale of electricity to consumers by licensed public utilities. The standards of performance include matters relating to voltage stability, maximum number of scheduled and unscheduled outages, number and duration of load shedding periods and metering.

Every grid participant that intends to establish and connect to the NITS any new or modified equipment or network that it owns, operates or controls must liaise with the ETU and the NITS asset owner, and obtain the required approval from the Energy Commission.

To avoid discrimination in the transmission of electricity, the ETU must develop and publish in detail all the requirements, qualifications and administrative procedures to be fulfilled or followed by those seeking to be provided services by the ETU.

A grid participant must construct, operate and maintain all equipment that are part of its facility in accordance with the requirements of the Grid Code, prudent utility practice and applicable national and international laws, protocols and standards.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Ghana's transmission policy objective is to provide adequate, safe and reliable electricity transmission network. To achieve this, the National Energy Policy requires the government to support private sector co-financing with government for grid extension to designated franchised zones, increase funding from government and other multilateral and bilateral sources for the National Electrification Scheme and to support new service connections for electricity in the rural areas. There are many government incentives to encourage expansion of the transmission grid. For instance, there are tax exemptions and reliefs, easy clearing at the ports and the like meant to encourage expansion of the transmission grid.

Ghana's exchange controls were relaxed substantially in 2006, so that now, the only necessary prerequisite for the repatriation of funds is to repatriate funds through an authorised dealer banks. These banks report foreign exchange transactions to the Bank of Ghana, but no exchange controls are imposed.

In 2013, Ghana passed the Ghana Investment Promotion Centre Act 2013 (Act 865) (the GIPC Act). Among others, the GIPC Act is to encourage and promote investments in Ghana and to provide an attractive framework and a transparent, predictable and facilitating environment for investments into various sectors (including the energy sector) in Ghana. Foreign investors are now required to register with the Ghana Investment Promotion Centre (the GIPC) before commencing business operations in Ghana. Upon registration, a foreign investor is entitled to receive investment support from the GIPC and benefit from the investment incentives under the GIPC Act.

The GIPC Act provides an express guarantee for the repatriation of dividends, foreign debt service costs and distributions of equity following the winding-up of the business. Repatriations from Ghana can be made in freely convertible currency without any restriction insofar as the repatriation is done through a licensed bank.

Further, the GIPC Act, provides guarantee against expropriation or nationalisation by the government. A foreign investor cannot be compelled by law to cede his or her investment to another person. Every nationalisation or expropriation must be done under a law that provides for payment of fair and adequate compensation and a right to access the High Court of Ghana for determination of investor's interest or right and the amount of compensation to which the investor is entitled.

The government has also shown commitment to provide support for the expansion of its transmission facilities by providing guarantees and comfort letters, subject to parliamentary approval, to foreign investors who enter into power purchase agreements and other forms of support agreements with public utilities in Ghana. The government is also minded to provide special tax reliefs, subject to parliamentary approval, to foreign investors who invest resources in expanding the transmission grid.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

Rates and other economic terms and conditions for transmission services are determined by the PURC. The technical terms for the provision of transmission services are determined by the Energy Commission. The Grid Code that contains technical standards and requirements for transmission services.

The only licensed utility that provides transmission services is GRIDCo. All grid participants are required to enter inter into transmission agreement with GRIDCo before they can operate. All rates set by GRIDCo are subject to approval by the PURC.

The PURC provides the guidelines for fixing rate to be charged by public utilities for their services. In doing this, the PURC takes into account such factors as the interests of the consumer, the interests of an investor, the cost of production of the service, and the assurance of the financial integrity of the public utility.

A public utility cannot directly or indirectly demand or receive a higher rate than the rate approved by the PURC. A public utility may, with the written permission of the commission, demand and receive from a consumer a special rate agreed to by the public utility and the consumer.

The PURC may also fix a uniform rate throughout the country, a region or district for a service provided by a public utility. In doing this, the commission may take into account the population distribution in the country, the need to make the best use of a natural resource of the country, and the economic development of the whole country.

All revision of rates or new rates chargeable in respect of new services must be filed with the PURC at least 60 days before they become effective.

Before approving a rate, the PURC is required to give the public utility and consumers affected by the rate a reasonable opportunity of being heard. Rates approved by the PURC must be gazetted.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The regulators (the PURC and the Energy Commission) are responsible for the reliability of the transmission grid. The PURC ensures reliability by approving tariffs. The Energy Commission, on the other hand, ensures that licensing requirements, procedures, practices and standards are enforced in the NITS.

The Energy Commission monitors the operations of the transmission utility to ensure that transmission services are reliable. The PURC also monitors performance, quality of service, efficiency and to ensure compliance with technical standards.

To maintain stable and secure operation of the NITS to provide the expected standard of service for the benefit of all grid participants, certain minimum technical, design and operational criteria are to be met by all grid participants seeking connection to the NITS.

GRIDCo is responsible for wholesale power supply reliability from generation and transmission to delivery at the bulk power distribution centres.

To assure reliability of the transmission grid, transmission licences are granted subject to conditions. The Energy Commission monitors and enforces compliance with all licence conditions. A contravention of the licence conditions gives rise to penalties.

As part of the compliance monitoring procedure, the licensee is required to submit to the Energy Commission a detailed corporate performance statistics half-yearly and an annual report at the end of each financial year. The performance statistics includes the benchmarks stipulated in all the relevant legislation and Codes as well as the benchmarks stipulated in the respective licences.

Authorised officers of the Energy Commission have the right of free access to the premises and/or operational area of the licensee for the purpose of inspecting and ensuring compliance with the licence conditions.

Prior to suspension or cancellation of a licence, the defaulting licensee must be given an opportunity to respond to the commission's written complaint and the proposed action of remedy.

The commission may cancel a licence that has been granted but has not been utilised within one year from the date of issue after giving 30 days' notice to that effect. The ETU monitors and reports to the Energy Commission the performance of the NITS in terms of quality and reliability (ie, adequacy and security) of supply.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

To construct and operate distribution networks, an operator requires an electricity distribution licence issued by the Energy Commission. The VRA is exempted from the requirement for a licence to produce and supply wholesale electricity from the hydropower installations on the Volta River basin. An electricity distribution licence is site-specific.

In Ghana, a distribution licence includes a sale licence. This is because the electricity distributors also sell electricity to consumers. A distribution and sale licence authorises the licensee to operate a distribution network, and to distribute, sell or retail electricity.

There are three stages for the acquisition of authorisation to construct and operate distribution networks. Stage one involves the acquisition of a provisional electricity distribution licence. An applicant must submit the required documents to the Energy Commission.

Stage two involves the acquisition of a siting clearance and construction work permit. An applicant must submit the required documents to the Energy Commission. Stage three is the final stage and involves the acquisition of authorisation to operate.

A distribution licence is granted on the conditions determined by the Energy Commission and includes a condition that the rates or charges for services are subject to the approval of the PURC.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

All power consumers, especially the bulk customers or special load customers have access to the distribution grid. The distribution utility must ensure that all requirements are met before granting access.

A participant seeking to engage in embedded electricity generation or distributed generation services must negotiate and conclude a distribution network access agreement with the relevant licensed distribution entity. This must be done while seeking a licence from the Energy Commission.

The conditions for connection agreements must comply with the Grid Code. The Energy Commission facilitates these negotiations as and when required.

Licensed distribution service providers must connect embedded electricity installations to their distribution network.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Under Ghana's National Energy Policy, the policy direction of the government in respect of the distribution infrastructure is to seek adequate investment to improve the electricity distribution network and thereby reduce high system losses and improve poor quality of electricity supply. Accordingly, the policy requires government to assist distribution utilities in regaining their financial health, encourage distribution of utilities to seek commercial loan financing to modernise their infrastructure, encourage the injection of investment capital from private sources and from the domestic market in the medium to long term. There are many government incentives focused on encouraging expansion of the distribution network. For instance, there are tax exemptions and reliefs, financial incentives, feed-in tariffs, capital subsidies, equity participation, easy clearing at the ports and the like meant to encourage expansion of the distribution network especially in respect of renewable energy.

First, the Energy Commission and the PURC (the Regulators) have the authority to establish and enforce standards of performance for public utilities engaged in the distribution and sale of electricity.

Second, the government, on its part is committed to improving and expanding the distribution network in order to achieve its universal accessibility object by 2020. In that light, the government is minded to grant guarantees, comfort letters and tax benefits, subject to parliamentary approval, to foreign investors in the power sector over a period of time.

Third, foreign investors also benefit from the incentives under the GIPC Act, including guarantees from expropriation, repatriation of dividends, capital and debt costs in free convertible currency through a licensed bank.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Rates and other economic terms and conditions for distribution services are determined by the PURC. The technical terms for the provision of distribution services are done by the Energy Commission.

The Energy Commission in consultation with the PURC prescribes standards of performance for the supply, distribution and sale of electricity to consumers by licensed public utilities. The standards of performance include matters relating to voltage stability, maximum number of scheduled and unscheduled outages, number and duration of load shedding periods and metering.

An electricity supplier must ensure that the voltage at the point of supply to a customer's premises or electrical installation is within the prescribed voltage levels. The voltage levels are 230V, 400V, 11kV, 33kV or 34.5kV.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

In Ghana, an electricity sale licence is required for the sale of power to customers. Distribution companies hold both electricity distribution licence and electricity sale licence. This is because the electricity distributors also sell electricity to consumers.

A distribution and sale licence authorises the licensee to operate a distribution network, and to distribute, sell or retail electricity.

There are two stages involved to acquire an electricity sale licence. These are the acquisition of provisional licence and acquisition of operational licence (authorisation to operate).

Sale of power to consumers in Ghana is done by three distribution companies, namely ECG, NEDCo and Enclave Power. The authorities which grant approvals are the Energy Commission and the PURC.

There are two types of markets, namely, the regulated market and deregulated market.

Regulated market: this includes the distributors and sellers that are directly supervised by the PURC. Their tariffs are set by the PURC.

Deregulated market: this is made up of bulk consumers or customers with average demand of 3MVA or annual consumption of 6GWh. They must obtain a permit as bulk customers from the Energy Commission before they can negotiate with suppliers or generators of electricity.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

In Ghana, distribution of power and sale of power are done by the same entities. The PURC determines distribution or sale service charges. Since distribution and sale are done by same entities, the tariff for sale of power is embedded in tariff for distribution of power. Power sales tariffs are the same as the DSC as approved by the PURC.

Wholesale suppliers are entities that generate power and feed into the grid. They also sell power to bulk customers. The tariffs to be charged by the licensee for its services are determined by the PURC.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

The rates or charges for wholesale supply of electricity are determined by the PURC. The Energy Commission grants wholesale supply licence to public utilities to operate facilities and installations for the wholesale supply of electricity. The wholesale supply licence permits the public utility to produce electricity for supply to distribution companies and bulk customers.

A wholesale supply licence will not be granted unless the Energy Commission is satisfied that the grant will promote the safe, reliable and economic operation of the interconnected transmission systems in the country.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

There are standards of performance to be observed by the utilities. Except where a licence or authorisation given to a public utility is revoked, suspended, cancelled or expires, a public utility cannot refuse to provide its service generally without the prior written permission of the Energy Commission.

Licensed public utilities are required to maintain their equipment and property used in the provision of the service in a condition that enables them to effectively provide their services. They must make the reasonable effort necessary to provide to the public a service that is safe, adequate, efficient, reasonable and non-discriminatory.

Public utilities must submit monthly bills to their consumers. There are strict rules governing the termination of services by public utilities.

Licensed public utilities are required to make the repairs, changes, extensions and improvements in or to the service that are necessary or proper for the efficient delivery of the service to the consumer. Licensed public utilities are subject to penalties for failure to discharge their service obligations including payment of compensation to consumers who suffer on account of that failure.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The Energy Commission and the PURC are the regulatory bodies established to ensure the proper functioning of all players in the energy sector and to create the requisite conducive environment for the protection of private investment in the sector.

The Energy Commission is mandated, among other things, to license and regulate the technical operations of service providers in the electricity supply industry. The commission performs these regulatory functions through elaborations and enforcement of licensing conditions, technical rules of practice and standards of performance rules.

On the other hand, the PURC is responsible for the economic regulation of the electricity sector. Its main function is to set tariffs and monitor compliance with performance standards of the service providers in the power supply chain.

The PURC is responsible for approving electricity tariffs, monitoring quality of service and consumer protection.

23 Scope of authority

What is the scope of each regulator's authority?

The Energy Commission has responsibilities for the licensing of operators and setting technical standards for the power sector. The Energy Commission also advises the Minister for Energy on energy sector policy and planning issues.

The statutory functions of the Energy Commission include to recommend and advise the Minister for Energy on national energy policies; to prepare, review and update periodically indicative national plans to ensure that reasonable demands for energy are met and to grant licences to public utilities.

The Energy Commission is required to establish and enforce uniform rules of practice and standards of performance for public utilities engaged in the transmission, wholesale supply, distribution and sale of electricity and natural gas.

The Energy Commission also has a role to play in developing and promoting renewable energy sources in Ghana. The commission is independent.

The PURC's regulatory mandates are:

- to provide guidelines on rates chargeable for electricity services;
- to examine and approve the rates;
- to protect the interests of consumers and providers of utility services;
- to monitor the standard of performance of the utilities; and
- to promote fair competition.

Under the Energy Commission Act, the PURC is also required to approve charges for the supply, transportation and distribution of electricity.

The PURC approves rates and charges chargeable in respect of renewable energy sources.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Energy Commission was established by the Energy Commission Act. The source of funds for the commission is the Energy Fund. The commission manages and administers the fund. Parliament is statutorily required to annually provide the commission with such monies as may be necessary for the efficient performance of the functions of the commission.

The President appoints the commissioner of the Energy Commission. Appointment of the Executive Secretary, other staff and employees of the commission is done by the President acting in accordance with the advice of the commission given in consultation with the Public Services Commission.

The PURC is established by the PURC Act. The President appoints the commissioner and members of the PURC. The commission is not subject to the direction or control of any person or authority in the performance of its functions. The President also determines their allowance.

The PURC Act specifies four sources of funding for the PURC namely, government subventions, loans granted to the commission, monies accruing to the commission in the course of the performance of its functions, and grants it may obtain.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

A complaint that relates to the provision of utility service or rates chargeable for service provided by a public utility is required to be referred to the PURC for investigation and settlement. The PURC may apply to the High Court for the enforcement of its decision or direction.

Persons who are dissatisfied with a decision of the Energy Commission in relation to a licence application may have the decision reviewed by the commission.

An application for the review of a decision is required to:

- be made in writing;
- set out the decision to which the application relates;

Update and trends

In the past year, Ghana's electricity and power sector has taken centre stage in the majority of the discussions that are of national and public importance. Regular load shedding popularly known as 'dumsor' in Ghana was prevalent in the latter period of 2015 as well as continuing into the early period of 2016. This became a significant constraint to economic growth and as well as being a major disruption in the lives of Ghanaians, both at home and at work.

A huge deficit in power generation had resulted in prolonged rationing. Commendably, the government of Ghana (GOG), in a bid to address the electricity supply constraint, added more than 600MW of generation capacity in late 2015/early 2016 by bringing online a number of power projects, namely the Karpower barge (225MW); Ameri Power (250MW); TICO steam turbine (110MW); KTPP 220MW and BXC solar (20MW). It also oversaw a number of private and public sector projects which are also in advanced stages of construction.

Indeed the past year has seen some notable improvement in terms of expansion of generation capacity, extension of the distribution network, reliability of the power supply as well as reduction of technical and commercial losses. Access to electricity supply in Ghana grew from an initial 76 per cent to a remarkable 80.4 per cent over the period.

Much of Ghana's generating capacity is now based on thermal generation since Ghana's hydro resources are strained because of the low level of the Volta lake caused by a changing climate. More thermal energy means that Ghanaians have to pay more in tariffs to maintain sustainable power. This as expected has been the subject of much public disapproval.

The GOG aims at diversifying fuel sources, from gas to crude oil, LPG and LNG. Additionally, there will be an injection of renewable energy. Currently Ghana has about 25MW of solar power being transmitted into the national grid. This is set to increase to about 200MW over the next four years. GOG announced a target of 200,000 rooftop solar projects for small businesses and residential users.

The Ministry of Power is currently working with the PURC and the Energy Commission to intensify the nationwide implementation in order to achieve the target of 200,000. Similarly, following the signing of a PPA with the ECG, African Plantations for Sustainable Development also aims to pump 60MW of biomass energy into the transmission.

What has been of much concern has been the huge 'legacy' debt which Ghana's power sector companies have amassed, severely impeding their ability to perform at optimum level. This has led to periodic upward adjustments in tariffs over the years; however, the amount of tariffs paid has not been adequate to meet the operational expenditures of these utilities. The shortfall in revenue has traditionally been paid through the payment of subsidies by GOG leading to perennial budgetary constraints and numerous competing demands, which have made it virtually impossible for successive governments to meet this obligation.

GOG believes that this heightens the need to bring in a private operator with innovative ideas that would assist ECG. The US government is working closely with the GOG on several key power and energy initiatives including the Partnership for Growth and the second Compact issued by the Millennium Challenge Corporation.

GOG signed a US$498.2 million second compact that focuses strictly on power. The Compact's keystone project aims to improve the creditworthiness of ECG and the management of the Northern Electricity Distribution Company, the nation's off-takers and distributors of electric power, by supporting the transformation of their management and operation to private sector principals.

GOG has begun an international tender process to select a private partner to operate ECG as a concession for 25 years. The concession is to improve performance indicators as well as mobilisation of private investment. The move is believed to lessen the burden on government and further inject efficiency into the company.

The Ministries of Finance and Power are finalising processes for the implementation of the Private Sector Participation programme for the ECG. The ECG is meant to undergo a corporate reorganisation to make its operations more responsive to customers' desires.

This, however, is being met with great disapproval by the majority of ECG employees and the other utility and service providers.

The strategic focus is to improve general customer service delivery, response time when attending to faults and customer complaints, staff attitudes and professional competence.

The future of Ghana's power and electricity sector is bright aas regards the new trends and inputs of GOG and it is believed that despite some challenges that the sector may be saddled with, a lot more good will be seen in the coming years in terms of the maintenance of sustainable power.

- set out in detail the grounds on which the applicant seeks a review of the decision in question;
- be accompanied by any information or evidence that the applicant considers should be taken into account by the commission; and
- be lodged with the commission within 14 days after the decision is given.

Once the application for the review of a decision has been received, the commission:

- may stay the execution of the decision to which the application relates;
- will take a decision on the review within 30 days;
- may confirm, amend or substitute the decision; and
- will give the applicant written notice of the commission's decision, and the reasons for the decision on the review.

An applicant who is dissatisfied with a decision of a review by the Energy Commission has a right to appeal to the Minister for Energy, and subsequently to the courts. The appeal must be made within 14 days after receipt of the written notice of the decision appealed against.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The Energy Commission has the power to approve or block mergers or other changes in control over businesses in the sector. The commission requires that all operators are licensed. Licences granted by the commission are not transferable except with the prior written approval of the Energy Commission. Whenever a merger occurs, a new licence has to be applied for.

However, no licence is required where the entities were named, and the fact of the merger was mentioned, in the regulations of the licensed operator or in the application for the licence.

To avoid double licensing in the event of a merger, the merging entities are required to prepare a single corporate module or structure that reflects the merger.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

An operator must apply to the Commission for permit where:

- there is any change in its directors or corporate structure;
- there is transfer of a part of the utility; or
- there is modification of the plant or capacity.

A licensed operator that intends to undergo a merger must state that in its application for a licence specifying the new corporate identity. The non-licensed company merging with a licensed operator must demonstrate to the commission that it has all the technical and financial capacities to operate as an independent power operator.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

Ghana's energy sector is dominated by state-owned enterprises. Transmission and distribution of electricity are under state monopoly, with minor private participation in distribution. The current legal regime does not make any express provisions for the regulation of

anti-competitive practices in the electricity market. However, the PURC is mandated to promote fair competition among public utilities. The PURC is responsible for competition regulation and quality.

Anticompetitive practices only occur in the wholesale market. The independent system operator has the authority to prevent these practices in the electricity sector. The Energy Commission has the power to withdraw the licences of operators or refer operators to the Attorney-General for prosecution.

The Energy Commission is empowered to promote and ensure uniform rules of practice for the transmission, wholesale supply, distribution and sale of electricity.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

The market rules that exists in the wholesale market are the standards that are applied in determining anticompetitive or manipulative conduct. Currently, GRIDCo has a draft version of the market rules.

In determining anticompetitive or manipulative conduct, the Energy Commission and the PURC apply their own benchmarks. They also apply the various legislative instruments and licensing conditions as well as international best practices.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The PURC has the statutory power to handle competition in the electricity market. The system operator handles the wholesale market.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no limitations or special requirements on acquisitions of interests in the electricity sector by foreign companies. The operator must be registered in Ghana. An operator must include in its corporate structure all the foreign companies it intends to partner or deal with (eg, for supply of equipment).

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Authorisation is required to operate interconnectors in line with the NITS for transmission of electricity throughout the country. An operator requires a licence granted by the Energy Commission authorising the licensee to operate the interconnector.

This imposes conditions for the safe, reliable economic dispatch and operation of the NITS for the transmission of electricity without discrimination to a wholesale supplier of electricity. Similarly, conditions are imposed in that tariffs to be charged by the licensee for its services are subject to the approval of the PURC.

Even upon the grant of a licence for distribution and sale of electricity, it must be shown that the licensee has the capability to interconnect distribution facilities or installations with transmission systems in the designated area.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Ghana's imports and exports of electricity are driven primarily by two factors: the need to meet growing peak demand and the variability of the Volta River flow rates. The primary electricity trading partners are Ivory Coast and Togo, with which electricity is traded via the existing transmission interconnections. For example, Ghana has an exchange agreement with the Ivory Coast for up to 200–250MW of power import or export as the need arises on either side.

In December 2003, Ghana signed the ECOWAS Energy Protocol, which calls for the elimination of cross-border barriers to trade in energy, and encourages investment in the energy sector. This agreement, along with the WAPP agreement, is expected to lead to a more active regional import and export power market.

A grid participant wishing to interconnect the NITS to the electricity networks of neighbouring countries in the WAPP must do so in accordance with the provisions of the Grid Code, the ECOWAS Energy Protocol and the WAPP Operation Manual.

These agreements have potentially significant benefits for Ghana. Demand for electricity is growing rapidly throughout the region, which simultaneously creates a larger market for Ghana to trade power within the larger ECOWAS region.

The ECOWAS Regional Electricity Regulatory Authority (ERERA) is the regulator of regional cross-border trade of electricity in West Africa.

There are rules which are under development by ERERA. The Energy Commission licenses operators that intend to export power. WAPP is an ongoing project.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The law permits a public utility to arrange for the joint use of its equipment and facilities by another public utility. This may be done for a reasonable compensation where the arrangement is convenient or

kimathi partners
CORPORATE ATTORNEYS

Kimathi Kuenyehia **kimathi@kimathilegal.com**
Sarpong Odame **sarpong@kimathilegal.com**
Reginald Nii Odoi **reginald@kimathilegal.com**

No. 6 Airport Road, Airport Residential Area
CT 6217 Cantonments
Accra
Ghana

Tel: +233 302 770 447 / +233 247 960 465
Fax: +233 302 766 870
www.kimathilegal.com
www.kimathiandpartners.com

necessary and the use will not result in damage to the owner or other users of the equipment.

The PURC has the power to direct that two or more public utilities enter into an arrangement for joint use of equipment and facilities for the provision of a service. The PURC may exercise this power only when it is satisfied that the arrangement:

- is necessary to provide safe, adequate and economic service to consumers;
- will not result in irreparable damage to the owners or users of the equipment or facilities; and
- is just and reasonable having regard to the circumstances of the case.

The Energy Commission must be informed of all operations of affiliates for the commission to determine whether the licence of the operator covers the affiliates. The operator must submit any existing agreement or material contract between it and its affiliate or any other company to the Energy Commission.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

In the event of a dispute relating to transactions between affiliates, the parties may lodge complaints with the PURC for settlement. In enforcing the restrictions relating to dealing with affiliates, the PURC may, on a complaint from a public utility or consumer affected by the arrangement, modify or revoke an earlier directive.

The Energy Commission may arbitrate and settle a dispute arising between licensees where the parties cannot reach an agreement.

Greece

Dimitris Assimakis
Norton Rose Fulbright

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

As the case for all member states of the European Union (EU), the national policy and legislative framework for the electricity sector in Greece is mainly driven for the past 20 years by the EU energy law and policy aiming at the creation of a single energy market and the liberalisation of the electricity sectors of EU member states through the introduction of competition into power generation and electricity supply, the effective unbundling of integrated incumbent utilities' network operations and third party access to energy networks on equal, transparent and non-discriminatory terms for market participants, all monitored by efficient national regulatory authorities while promoting the use of renewable energy sources (RES) for power generation and the efficient cogeneration of heat and power (CHP).

In this context, Greece has adopted a series of laws and regulations primarily for the transposition of relevant EU electricity sector legislation into national legislation and the setting up of a consistent national regulatory framework. Currently, the main laws regulating the sector, as amended and in force, include:

- Law 4001/2011 (Energy Markets Law) on the enhanced role of the national Regulatory Authority for Energy (RAE), on the operation of the electricity and natural gas markets in Greece, and on the unbundling and independence of national energy networks and their respective operators, adopted in transposition of the third EU Energy Package;
- Law 2773/1999 on the liberalisation of the electricity market and Law 3426/2005 on the acceleration of the liberalisation of the electricity market that significantly amended the former; to the extent they do not contradict with the provisions of the aforementioned posterior Energy Markets Law 4001/2011;
- Law 3468/2006, Law 3734/2009, Law 3851/2010, Law 4062/2012 and Law4414/2016 on power generation from RES and high-efficiency CHP (in transposition of relevant EU Directives and the European Commission's Guidelines on State Aid for environmental protection and energy for the period 2014–2020);
- Law 4336/2015 on the ratification of the Financial Assistance Facility Agreement between the European Stability Mechanism (ESM) and Greece, providing, among other things, certain legislative measures to be adopted and structural reforms to be made the Greek electricity sector as prior actions for the disbursement of the instalments under the facility agreement, as such measures/reforms are specifically described in the Memorandum of Understanding of August 2015 accompanying the facility agreement, as well as in the Supplemental Memorandum of Understanding of June 2016; and
- Law 4389/2016 on the structural reforms required to be made in the Greek electricity sector as agreed under the memorandum of understanding attached to the financial assistance agreement entered into between Greece and the ESM for the period 2015–2018.

Of great importance are also certain secondary legislative acts, such as:

- the Grid Code and the Market Transactions Code of January 2012, which include the detailed rules for the operation of the wholesale electricity market, together with the revenant rule books (manuals) drawn up by the competent transmission system and wholesale electricity market operators;
- the Non-Interconnected Islands (NIIs) Network Code of February 2014, which includes the detailed rules for the operation of the electricity market in the small autonomous electricity systems of the Greek islands that are not connected to the mainland grid;
- the Electricity Supply Code of April 2013;
- the Electricity Supply & Trading Licences Regulation (Part A) of November 2012;
- the Regulation for the award of production licences to conventional power plants of December 2000; and
- the Power Production Licences Regulation for RES and CHP power plants of October 2011.

Although the above legislative acts comprise the basic framework for the regulation of the Greek electricity sector, a quite significant number of other secondary national legislative acts and regulations, such as the implementing decisions issued by the competent minister (nowadays the Minister for Environment and Energy) having the overall responsibility of the electricity sector as well as the regulatory decisions issued by the RAE, supplement the main national regulatory framework.

See 'Update and trends' for information regarding several key structural reforms introduced in May 2016 by virtue of Law 4389/2016 as part of the country's commitments under the Financial Assistance Facility Agreement agreed between Greece and the ESM in August 2015.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

There are currently two electricity markets in Greece which are actually separated due to electricity grid constraints. One comprises mainland Greece and several islands that are connected to the high-voltage grid of mainland Greece (the interconnected system), while the other comprises most islands of the Aegean Sea, including large ones such as the islands of Crete, Rhodes, Lesvos, Kos and Chios, that are not connected to the mainland grid (the NIIs).

Interconnected system

In the interconnected system, power generation and supply activities are fully liberalised business activities open to completion while transmission and distribution activities are exclusively performed by entities which have been entrusted the relevant statutory role of the network operator by law with due consideration for the legal and functional independence requirements set out under the EU legislation .

Generation

Out of a circa 18.4GW total power generation capacity installed in the interconnected system, the state-controlled power incumbent Public Power Corporation (PPC) holds a significant market share of around 11GW that is consisted of a diversified generation mix, such as lignite-fired, oil-fired, gas-fired and large-scale hydro power plants. However, following the opening up of the market in early 2001 a number of independent thermal power producers have also entered that part of the electricity market with a total of 2.6GW installed capacity but only

through gas-fired power plants. The remaining 4.8GW installed capacity in the interconnected system comes from the addition of RES and CHP systems in the generation mix. The greatest part of the RES and CHP capacity in the interconnected system is owned by independent power producers other than the PPC. The PPC's market share in electricity generation, as a percentage of the total load in the interconnected system was 55.2 per cent in 2015 compared with 59.5 per cent in 2014.

Supply

The supply of electricity to end customers although fully liberalised under the law is still dominated in practice by the PPC as currently holds approximately 90 per cent share of the retail electricity market. However, alternative power suppliers have significantly increased their shares in the retail market within the past two years while moreover, certain structural reforms have been recently introduced aiming at the drastic reduction of the PPC's hyper dominance in the retail market. In 2015, the total electricity demand in the interconnected system totalled 50,518GWh. See also 'Update and trends' for information regarding the anticipated forward electricity products auctions aiming at the furthering opening of the retail market.

Transmission

The IPTO, a wholly owned subsidiary of the PPC, owns and operates the high-voltage transmission system (System), which consists of 400kV and 150kV transmission lines, extra high-voltage centres and 150kV to 20kV substations. The System has a total length of approximately 11,300 kilometres which is comprised of overhead, submarine and underground lines. The backbone of the System consists of three overhead 400kV DC lines, which transmit electricity mainly from the power plants of western Macedonia in northern Greece, where approximately 50 per cent of the country's electricity is generated, to the major consumption centres in central and southern Greece, where 65 per cent of the electricity is consumed. Underground lines are mainly installed in the big urban centres of Athens and Thessaloniki while submarine cables connect the islands that are close to the mainland. The System is connected with the transmission systems of Albania, Bulgaria the Former Yugoslav Republic of Macedonia and Turkey with 400kV lines, and with Italy through a submarine cable of 400kV DC. Alongside the System, the IPTO owns a 1,916km fibre optic network, of which 17km are submerged, and approximately 200km of underground fibre optic network in urban areas. The IPTO's main responsibilities include ensuring the long-term viability of the System, granting access to the System to all licensed electricity producers and suppliers and allowing the connection of the low and medium-voltage distribution network (Network) to the System in compliance with the Grid Code. See also 'Update and trends' for information regarding the ongoing process for the ownership unbundling of the IPTO from the PPC.

Distribution

The distribution network (Network) is consisted of medium and low voltage distribution lines which span approximately 237,000 kilometers, consisting of 125,000 kilometers of low voltage lines and 112,000 kilometers of medium voltage lines. In addition, the Network consists of approximately 1000 kilometers of high voltage lines in Athens metropolitan area and the NIIs, as well as 163,000 transformers of medium and low voltage and 225 substations of high and medium voltage. In 2015, active users of the Network totalled 7.5 million. While the PPC is the owner of the Network, due to unbundling regulations, the electricity distribution business is operated by the HEDNO, a wholly owned subsidiary of PPC. The HEDNO is currently responsible for the management, operation, development and maintenance of the Distribution Network. the HEDNO's responsibilities include ensuring the Network's operations are reliable, efficient and secure, as well as the Network's long-term ability to respond to future power needs, showing the necessary concern for the environment and energy efficiency, and ensuring in the most economic, transparent and unbiased manner, access for all users to the Network for the exercise of their activities.

Wholesale electricity market – main features

The wholesale electricity market in the interconnected system operates as a mandatory power pool (without bilateral energy contracts for now) where all licensed merchant power plants are scheduled daily by the Hellenic Electricity Market Operator (HEMO or LAGIE as per its Greek acronym), a state-owned entity, and dispatched by the IPTO, according to their economic merit order (following competitive bidding the previous day or day-ahead market). All electricity purchased at wholesale level by load representatives (ie, suppliers and traders) is paid at the uniform system marginal price per hourly dispatch period. Distribution of electricity to end consumers is performed by the HEDNO, while supply of electricity to end customers by licensed power suppliers. Electricity imports and exports through the county's interconnectors with neighbouring countries (ie, Albania, Bulgaria, the Former Yugoslav Republic of Macedonia and Turkey) are pursued by PPC and a considerable number of independent trading companies active both in Greece and the wider region. Despite the rather limited capacity in country's interconnectors, imports are gaining a significant market share and totalled 11,130GWh in 2015. Conversely, exports are rather limited as totalled only 1,770 GWh in 2015.

See also 'Update and trends' concerning Greece's commitment under the Financial Assistance Facility Agreement with the ESM and the relevant MoUs to pass the required legislation on the transposition of the high-level electricity market design the soonest within the framework of the implementation of the EU target model for the Greek electricity market that is to be completed by December 2017.

Non-interconnected islands (NIIs)

The NIIs consist of 32 isolated electricity systems of which the 31 have been qualified as micro isolated systems (in accordance with Directive 2009/72/EC), the largest of which is the island of Rhodes and one as a small isolated system, that of the island of Crete. All those systems represent approximately 10 per cent of the total Greek electricity demand. In the NIIs, PPC has installed and operate 1.8GW of oil-fired power plants, while there is also approximately 485MW of renewable electricity (mainly wind and solar) capacity installed. Although all thermal power plants installed in the NIIs are owned by PPC, most RES power plants are owned by independent power producers other than PPC. RES power plants cover approximately 20 per cent of the total electricity demand in the NIIs. On the supply side, PPC is currently the sole electricity supplier in the NIIs.

Major investment projects for the interconnection of the Cyclades islands group in the central Aegean Sea and the island of Crete are currently undergone by the IPTO.

Specific provisions are stipulated under the Energy Markets Law 4001/2011 concerning the licensing of new conventional generation capacity and the opening up of the retail market in the NIIs, in line with a decision of the European Commission issued in August 2014 by virtue of which Greece was granted derogation from certain provisions of Directive 2009/72/EC on common rules for the internal market in electricity (Chapters III and VIII), following an application filed by the Greek government in January 2012. It is worth mentioning that the electricity system of Crete, which is the largest NII, is already open to competition, while the electricity system of the island of Rhodes will be open to competition as of 1 January 2017 by virtue of the recently adopted Law 4414/2016.

Moreover, under the Energy Markets Law 40021/2011, the HEDNO has been entrusted the role of the network and market operator of the isolated electricity systems in the NIIs and therefore, is not only responsible for the operation, development and maintenance of the grids but also for the operation of the electricity market in the NIIs, in accordance with the NIIs Operation Code.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Electricity production licences are granted by the RAE following assessment of a relevant application against the awarding criteria of the law and the respective licences regulation (one for conventional power dated December 2000 and one (updated) for renewables and high-efficiency CHP dated October 2011) is the first and central authorisation to construct and operate large-scale power generation facilities. Small-scale and experimental generation facilities are exempt from such an authorisation. In brief, the awarding criteria of an electricity production licence pertain to:

- the intended primary energy source;
- the location and technology of the proposed power plant;
- the proposed power plant's potential interaction with the natural environment and other infrastructure facilities, such as national defence, telecommunications and the power grid from a grid capacity perspective;
- the financial strength and expertise of the interested investor or project sponsor; and
- the plans for financing and implementation of the proposed power plant.

However, a number of other authorisations are also required to this end for utility-scale power generation facilities. These are:

- the environmental terms approval of the relevant power generation project; its installation licence; the relevant building permit or permits, as the case may be;
- a series of inspections, audits and certifications upon completion of construction and commissioning of the power plant, including its grid connection equipment, electric cables and other auxiliary facilities;
- its operation licence; and
- for thermal power plants, its greenhouse gases (GHG) emission permit for the purposes of the EU Emissions Trading Scheme (ETS).

Energy Markets Law 4001/2011 provides that production licences for conventional power plants in micro isolated systems (as the case is for the vast majority of NIIs) are only granted to PPC, based on a derogation granted in accordance with Directive 2009/72/EC, while for those NIIs not falling under this category, production licences are issued to any interested person, unless capacity adequacy issues arise, in which case licences are granted by means of a tendering process or directly to PPC.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

In accordance with Energy Markets Law 4001/2011, the IPTO is responsible for the non-discriminatory connection of new power plants to the system on the basis of transparent and efficient procedures approved by the RAE and further detailed in relevant secondary regulations. In particular, the minimum standards for connection and the technical and operational performance are set out in the Grid Code. The IPTO is not entitled to refuse the connection of a new power plant on the grounds of possible future limitations to available transmission capacity, such as congestion in distant parts of the system. Likewise, the IPTO is not entitled to refuse a new connection point, on the ground that it will lead to additional costs linked with necessary capacity increase of the System in the close-up range to the connection point. However, the IPTO may refuse the connection of a new power plant to the System for a defined period of time due to lack of transmission capacity based on criteria that are approved and published by the RAE.

Power generators that wish to be connected to the System must apply to the IPTO to receive a connection offer. Provided that the interested generator accepts the IPTO's connection offer, then it enters into a grid connection agreement with the IPTO. Only 'shallow' connection costs (ie, connection costs from the power plant site to the appropriate connection point of the System) are charged to power producers. The charges are applied by the IPTO, for specific tasks carried out by it that are related to the connection works performed by the power producers themselves (eg, review of related grid connection studies, acceptance tests for built connection networks, etc). As required under Energy Markets Law 4001/2011, a detailed list of those charges is to be submitted by the IPTO to the RAE for final approval. However, such charges have not yet been formally approved by the RAE.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Greece was one of the very first EU countries that introduced specific legislation for the promotion of renewable electricity in the early 1990s. Under the current regime, operating renewable energy power plants and high efficiency CHP generation facilities are entitled to priority dispatch of their power output subject to grid safety and technical limitations. Moreover, the competent grid operator (either the IPTO in the interconnected system or the HEDNO in the non-interconnected islands) is legally obliged to off-take such renewable energy at regulated energy prices (€/MWh), also known as feed-in tariffs, the cost of which is essentially funded by the end consumers but also through other regulated charges. Such off-take is prioritised over electricity generated by conventional energy sources. Priority dispatch is given by the competent grid operator pursuant to the relevant network code and the relevant standardised power purchase agreement (PPA) entered into between the renewable energy generator and the HEMO or the HEDNO, as the case may be, for a term of 20 years. Entry into the standardised PPA by the HEMO or the HEDNO is compulsory for all renewable energy projects that want to connect to the respective grid. The currently applicable versions of such PPA (which is different for the NIIs) are the ones set forth by a ministerial decision dated 30 August 2010. Solar thermal power plants in particular are entitled to an initial PPA term of 25 years.

Also, high efficiency CHP plants with use of RES, small-scale hydro power projects (up to 15MW) and small–scale hybrid RES power projects (up to 5MW) in the NIIs are eligible under the recently adopted investment incentives law 4399/2016 to receive subsidies in the form of cash grants, leasing subsidies or tax exemptions.

In early August 2016, the Greek parliament voted Law 4414/2016 on the new scheme for the provision of operating aid to RES and high-efficiency CHP projects in line with the European Commission's Guidelines on State Aid for environmental protection and energy for the period 2014–2020. The two overarching principles of the new support scheme are (i) the direct participation of RES and high-efficiency CHP projects in the Greek wholesale electricity; and (ii) revenue support on the basis of cost reflective, market-based operating aid which will ensure that the projects are neither overcompensated nor undercompensated. With small exemptions, the feed-in tariff scheme that was applicable since 1994 is replaced by a technology-specific sliding scale feed-in premium to be added on top of the revenues received by the renewable energy generators through their participation in the wholesale electricity market. The new support scheme is applicable to new projects only. The law also provides grandfathering provisions and exempts from the new support scheme any RES projects that are currently under development and have entered into a PPA with the HEMO on or before 31 December 2015, provided that such projects will be commissioned by 31 December 2017 (or 30 June 2018 for wind, small-scale hydroelectric, biogas and biomass power projects). Moreover, Law 4414/2016 provides that from 2017 onwards, operating aid to RES and high efficiency CHP projects will in principle be granted through competitive bidding processes. In this respect, the government is to determine this year which technologies, categories of projects and capacity thresholds could be eligible to receive operating aid through competitive bidding processes as from 2017.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Tackling climate change is a main priority for Greek policymakers. Party to the United Nations Framework Convention on Climate Change and the Kyoto Protocol, Greece qualifies as an Annex I country having to comply with legally binding targets for GHG emission reductions. Moreover, a significant part of Greek legal framework is the result of transposition of EU regulations and directives to the national level. Against this background of international commitments, Greece has developed an approach to climate change largely driven by GHG emission reductions through reforms to the energy sector.

In relation to the electricity sector, the national policy on climate change is mainly focusing on the promotion of electricity generation with use of renewable sources of energy. Greece is bound by EU targets to increase the share of renewable energy in gross final energy consumption from 6.9 per cent in 2005 to 18 per cent in 2020. The 2010 National Renewable Energy Action Plan adopts a combination of measures on energy efficiency and renewable energy to meet this target. According

to the Plan, power generation from renewable sources should increase more than triple in comparison to 2010 to meet the 2020 targets of 40 per cent renewable energy share in total electricity generation, 10 per cent in transport and 20 per cent in heating and cooling. In relation to the renewable electricity target under the plan, the national policy is implemented through the RES support scheme briefly described in question 5 above. In 2012 the government also adopted the Renewable Energy Roadmap 2050. The document proposes concrete measures to achieve renewable energy targets and GHG emissions reduction, including energy certification for buildings, a certification scheme for energy service companies, tax relief and electrification of transport. The 2050 Roadmap also establishes that renewables should account for 20 per cent of final energy consumption by 2020 and 60–70 per cent in 2050.

As a result of this policy, Greece experienced a significant increase in installed renewable capacity in recent years. In 2015, the total installed capacity of renewables exceeded 5.2GW (out of a total installed capacity of circa 20GW, including 2.6GW of photovoltaic (PV) capacity) and produced 10.7TWh. This demonstrates the shift in national energy policy from overdependence on indigenous lignite (with 4.5GW installed capacity and 20.3TWh of electricity produced in 2015) to renewables in addition to existing large hydro power plants (totalling circa 3.2GW). In the period 2007–2015, there was a drastic decrease in the county's emissions that was mainly attributed to the changes in the generation supply mix due to the introduction of natural gas and renewable energy sources.

The RES support framework also includes measures for the promotion of renewable electricity, mainly with use of solar photovoltaic technology, in the residential and commercial sectors as well as in public buildings through a net-metering scheme. Other policies have also been adopted with a direct impact on the country's generation mix, such as the incorporation of CO_2 emissions costs of conventional power producers into the energy offers they submit to the day-ahead energy market as a counter-incentive to CO_2 emissions increase. In effect this internalises such an environmental externality into thermal power generation in line with the current third phase of the EU Emissions Trading System (EU ETS), which oblige thermal power producers to buy the totality of the allowances required for the coverage of their emissions, taking also into account that for purposes of the calculation of the wholesale electricity market price (system marginal price (SMP)) the value of renewable energy injected into the grid must reflect at least the weighted average variable cost of thermal power plants. Recent Law 4414/2016 aims at the same direction since for the first time, introduces an obligation on electricity suppliers to contribute to the special designated account for the payment of the renewable electricity (RES Special Account) managed by the HEMO, due to the fact that renewable electricity decreases the wholesale market electricity price and therefore, such decrease conversely results in the increase of their profit margin.

Part of the national policy on climate change in line with the provision of the Industrial Emission Directive 2010/75 is also the obligation imposed on PPC to decommission old thermal power plants (oil and lignite-fired). Based on the latest System Adequacy Report published by the IPTO in June 2016, the PPC is expected to decommission approximately 2.9GW thermal capacity (oil and lignite-fired power plants) by 2023.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Within the national renewable electricity support framework mentioned in question 5, there are specific measures promoting the operation of renewable energy power plants with storage capabilities such as hybrid RES power projects (eg, renewable energy projects combining wind and hydro pump-up systems) and solar thermal power projects with storage capacity. The national policy on electricity storage is mainly focused on the promotion of these projects primarily in the small autonomous electricity systems of the NIIs, aiming also at the exploitation of their untapped renewable energy potential.

Several R&D projects are implemented through the joint cooperation of developers, equipment manufacturers and academia, usually supported by EU funded programmes, such as the construction of a small-scale hybrid RES project (combining wind and solar PV systems) with battery storage in the island of Tilos. This project is part of a multinational European demonstration and research project with fifteen participating companies and institutes from seven European countries and aims to demonstrate the potential of large-scale RES penetration through an optimum integration of hybrid-RES system, advanced battery storage and demand side management equipment to serve a multipurpose role within the micro grid of an island.

Moreover, in July 2016 the RAE opened a public consultation with market stakeholders for the granting of incentives to operating wind farms as well as to new wind projects in the NIIs to install storage systems.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

In Greece, there are no nuclear power plants and nuclear energy is not considered as an option in the foreseeable future.

There is, however, one 5 MW pool-type nuclear research reactor (in extended shutdown since 2014) operated by a scientific research institute in Athens and one sub-critical assembly operated by the Aristotle University of Thessaloniki.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Typically, the construction of an electricity transmission network would require the prior environmental terms approval for same and the securing of the underlying land rights and titles and rights of way through the purchase, lease and/or expropriation of the necessary land notwithstanding some relevant rights of way granted by law to IPTO and renewable energy producers in particular. However, unless it concerns a direct line between power generation and electricity consumption point(s) that is legally required to obtain also a direct line ownership and operation licence by the RAE, electricity transmission networks (eg, overhead or underground transmission lines and/or voltage substations) that connect to the System are required by law to become part of the System and therefore to pass under the operation and ownership of the IPTO. The developer may depreciate any transmission assets that it funded.

Following the establishment of the IPTO in 2011 through the spin-off of PPC's transmission business, personnel and assets as well as the transfer to the IPTO of the former Hellenic Transmission System Operator's (HTSO) transmission operations and personnel, the relevant System ownership and operation permits held by the PPC and the HTSO, respectively, have passed by law to the IPTO. On another note, even direct lines may be required by the RAE for reasons of public interest to be operated by the IPTO or the HEDNO and/or to become part of the System or the Network against full compensation of the direct line owner.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Eligible to obtain transmission services (or access to the System) are licensed power generators and electricity suppliers or traders, or those who are exempt from the obligation to hold such an electricity production licence, and, of course, eligible customers (ie, those who are free to purchase electricity either from the electricity supplier of their choice or directly from the power pool or daily wholesale market; in theory all end customers, but in practice only a few industrial ones connected directly to high voltage).

The process, the terms and conditions for access to the System, the technical safety criteria and the technical rules establishing the minimum technical design and operational requirements for such access on transparent, objective and non-discriminatory terms for all interested parties or market participants are laid down in the Grid Code and the relevant IPTO's manuals. In particular, the code provides for a system transactions agreement to be entered into between IPTO and each

System user. The System transactions primarily relate to the power plants' dispatch process; the settlement of any imbalances; the provision of ancillary services, such as voltage regulation, frequency regulation, provision of reserve power, provision of idle power, black-start and monitoring of load fluctuations; and the flexibility remuneration mechanism, which are managed, cleared and settled by the IPTO.

The IPTO must provide all services under transparent, objective and non-discriminatory criteria so as to avoid any discrimination among System users or user categories, especially with regard to entities affiliated with it.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The IPTO is obliged to put forward by end of March each year for RAE's approval, following public consultation with market stakeholders, the System Development Programme for the next 10 years, defining therein the main transmission infrastructure required to be built or to be upgraded, including the ones required for the penetration of renewable energies into the generation mix, the ongoing and new transmission infrastructure investments and elaborating on the technical and economic feasibility of important transmission projects, especially internal and cross-border interconnections including their time schedules for implementation, estimated cash flows and required financing. If the IPTO does not timely perform the above tasks and grid investments under the System Development Programme, RAE may take a number of far-reaching actions to oblige the IPTO in this direction, such as the procurement or financing of the relevant investments from third parties or even the necessary capital increase of the IPTO through the participation of third parties into its shareholding. These actions though are yet to be tested in practice.

Transmission grid (ie, System) expansion works promoted by the IPTO may well enjoy public funding from the Public Investments Programme of Greece combined with funding from EU Structural and Cohesion Funds in the context of the National Strategic Reference Framework for the period 2014–2020. Moreover, the procurement of public–private partnerships for major grid expansion projects, such as the interconnection of the island of Crete, combined with funding from the European Investment Bank under its European Fund for Strategic Investments initiative and/or other sources of funding, may be an option in the foreseeable future.

Based on the current methodology for setting of IPTOs allowed revenue which was approved by the RAE in June 2014, additional incentives for the investment in transmission grid projects of major importance, particular those that offer a significant benefit to customers, are given to the IPTO (see also question 12).

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The rates for the use of the transmission grid (System), including the underlying methodology and the annual budget for System costs and unitary charges per category of users, are set forth by the IPTO and approved by the RAE on the basis of the IPTO's annual required revenue, which is defined in the Grid Code as the sum of the annual System cost, plus the annual cost of any additional works for the expansion and/or the reinforcement of the System not covered by the IPTO. The annual required revenue is also adjusted to take into account under or over-recovery through tariffs collected by the IPTO from System users in the previous years, adjustments regarding differences in budgeted amounts for new investments and operational costs (only for significant deviations), as well as any IPTO's revenues collected from interconnection congestion fees approved for reducing the use of System charges in accordance with EC Regulation 714/2009 (Article 16.6). These cost-reflective tariffs enable the required investments for efficient transmission services and must not discriminate between System users. For this purpose, the RAE annually approves the System revenue required for the next year with a view to such required System revenue making a reasonable profit for the IPTO. The current tariff setting methodology provides for a multi-year tariff framework to maintain regulatory continuity and provide the IPTO with incentives to improve its operating and investment efficiency, while ensuring it can finance its activities. More details on the tariff setting process for the use of the System and the terms for the provision of transmission services are set out in the Grid Code and the respective IPTOs' manuals, as well as in RAE's relevant decisions issued by virtue of the Energy Markets Law 4001/2011. The rates for the usage of the System are published.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The IPTO is responsible for ensuring the long-term ability of the System to meet reasonable demands for the transmission of electricity; operating, maintaining and developing under economic conditions a secure, reliable and efficient System with due regard to the environment; and contributing to security of supply through adequate transmission capacity and System reliability.

In particular, the IPTO's principal responsibilities include:

- ensuring the long-term ability of the System to meet reasonable demand for electricity transmission in a financially and environmentally sustainable manner;
- granting access to the System to all power producers and suppliers as well as to those parties which have been legally exempted from the obligation to obtain an electricity generation licence and to customers who are entitled to select a supplier or to directly purchase electricity (eligible customers);
- allowing the connection of the Distribution Network to the System in compliance with the Grid Code;
- managing electricity flows on the System, taking into account exchanges with other interconnected systems of third neighbouring countries;
- ensuring the safe, reliable and efficient operation of the System as well as the availability of necessary ancillary services including those provided by demand response, insofar as such availability is independent from any other transmission system;
- preparing the dispatch schedule for power plants connected to the System, determining the interconnections usage, and performing the real time dispatching of available power plants;
- granting and managing third-party access to the System and giving reasoned explanations when such access is denied;
- preparing on an annual basis, upon prior consultation with all current and potential System users, of the 10-year plan for the development of the System (System Development Plan);
- calculating the ex post system marginal price (ex post SMP) for the purposes of settling any imbalances within the framework of the operation of the wholesale electricity market;
- clearing of any power generation-demand imbalances and conduct of all relevant transactions for their settlement in cooperation with the HEMO and the HEDNO;
- entering, subject to a relevant tender process, into electricity trading agreements, including agreements for demand management insofar as this is required for the provision of ancillary services with the purpose of imbalances settlement during real-time System operation and in compliance with the Grid Code; and
- cooperating with the HEMO according to the provisions of the Market Transactions Code and the Grid Code.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Similar to the transmission grid, the construction of a distribution network requires prior environmental terms approval and the securing of the underlying land rights, titles and rights of way through the purchase, lease or expropriation of the necessary land, notwithstanding some relevant rights of way granted by law to the HEDNO and renewable energy producers in particular.

Following the establishment of the HEDNO in 2012, through the spin-off of the PPC's distribution business, including the competent personnel but excluding the Network assets that remained under the

ownership of the PPC, the HEDNO has been awarded by the RAE a Network operation licence elaborating on the pertinent matters, responsibilities, obligations and rights of the HEDNO towards the PPC and the network users. The PPC, on the other hand, has been awarded by the RAE a Network ownership licence elaborating, among other things, on its relationship with the HEDNO and the securing of the latter's operational independence from the PPC.

The RAE may classify a distribution network which distributes electricity within a geographically confined industrial, commercial or shared services site and does not, typically, supply household customers, as a closed distribution network if:

- for specific technical or safety reasons, the operations or the production process of the users of that network are integrated; or
- that network distributes electricity primarily to the owner or operator of the network or their affiliates, provided that the infrastructure and facilities of that network are not integrated with HEDNO's network.

This is the case for Athens international airport distribution network.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Eligible to obtain access to the distribution grid (the Network) are licensed power generators and electricity suppliers and traders, or power generators exempted from the obligation to hold an electricity production licence, and of course end consumers, pursuant to the terms and conditions, and the tariffs set forth in the Network Operation Code securing such access in the most economic, transparent and direct way without discriminating between Network users. This code, however, has been pending for some years now. In the meantime, the details concerning the exercise of end consumers' right to freely choose the electricity supplier of their choice as well as other relevant and technical matters are regulated by the RAE's Manual on Metering & Regular Clearings of Network Suppliers.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Certain, general though, obligations imposed upon the HEDNO under the Energy Markets Law 4001/2011 and the Network operation licence in relation to the development of the Network. However, the current tariff setting methodology (see also question 17) is intended to provide the HEDNO with incentives to improve its operating and investment efficiency, while ensuring it can finance its activities.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Similar to transmission services, the rates for the provision of distribution services, including the underlying methodology and the annual budget for Network costs and unitary charges per category of users, are set forth by the HEDNO and approved by the RAE. Hence, they are regulated cost reflective tariffs that are supposed not to discriminate between Network users and to enable the required investments for efficient distribution services. To this end, the RAE approves on annual basis the 'required Network revenue' for the next year based on its operating costs, capital employed (on regulated asset value basis) and depreciations with a view to such required Network revenue plus a reasonable return on investment for the PPC, as the owner of the Network, after taking into account estimated costs and expenses. There is currently no formal methodology framework for the calculation of the allowed distribution revenue, given that the Network Operation Code (which will include the methodology for estimating the annual distribution costs) has not yet been adopted. As a transitional measure, the methodology applied is the same as that currently used for the transmission system.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

One of the principal means by which competition is being introduced to the Greek electricity market (starting in 2001) is by allowing new suppliers to enter the market. Energy Markets Law 4001/2011 provides that any entity wishing to supply electricity to eligible customers in Greece or trade electricity across the borders of Greece requires a supply or a trading licence. The holder of an electricity supply licence may perform the activities of an electricity trader, without being required to issue a trading licence. Electricity supply and trading licences are granted by the RAE in accordance with the specific terms and conditions provided for in them.

The details for the application, the supporting documentation, the award, amendment and revocation of these licences, as well as their standard general terms and conditions are elaborated in the relevant Licences Regulation (Part A) of November 2012. The awarding criteria concern the minimum capital and the financial strength and creditworthiness of the interested supplier as well as its organisational and management structure for the reliable, prudent and fair electricity supply to its customers. Incorporated suppliers and/or traders already licensed and active in another EU member state are also entitled to the subject licences in Greece by virtue of the law and a special (simplified) licensing process, although the material awarding criteria must still be met, except for the minimum capital requirement. The RAE may cooperate with other national regulators in this respect.

As to the opening of several big NIIs to competition, see also question 2.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Following a long period of regulated retail power prices, all power sales tariffs to all customers in Greece, with the exemption of those customers qualified as vulnerable ones (see question 21), are fully liberalised and freely set by all electricity suppliers, including the dominant incumbent PPC, as of 1 July 2013. However, customers' electricity bills must clearly distinguish between the regulated charges thereof concerning transmission and distribution charges, public services obligations (PSO) and the renewables support scheme (ie, GHG emissions reduction duty) charges; other municipal duties or special taxes imposed by law; and the competitive charges concerning electricity supply. This and other elements concerning power sales to customers – other than tariffs, such as retail contracting and minimum terms and conditions regarding termination, customers protection and dispute resolution – are regulated in detail by the Electricity Supply Code of April 2013.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Given the current mandatory power pool structure of the Greek wholesale energy market (see also question 2), the rates for sales of wholesale power per hourly dispatch period are basically determined by the SMP, which is calculated by the HEMO. The SMP is the uniform hourly clearing price for the day-ahead scheduling (DAS) of power pool transactions, other than renewable electricity where guaranteed feed-in tariffs apply, and it depends on the economic merit order of merchant power plants' scheduling following competitive bidding. The DAS is the first stage of the wholesale electricity market process aimed at the daily reduction of the total cost required for serving the load (meaning demand) and meeting ancillary services requirements during the (next) day in question, after taking into consideration the System's technical constraints, in order to approximate the real-time dispatch of available power generating plants during that day.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

All electricity suppliers are subject to the PSOs currently in place. These are the supply of electricity to customers in the NIIs at the same prices with those in mainland Greece and the supply of electricity to specially nominated vulnerable customers, such as multi-member families, long-term unemployed, people with special needs and people on life support at specially discounted prices in relation to regular customers. The relevant cost is covered by the rest customers throughout Greece through a regulated charge (PSOs levy) in their electricity bills that is calculated pursuant to an also regulated methodology. The PSOs levy is paid to the suppliers by the end customers with a specificcharge in their bills. Moreover, the PPC has been nominated after a tender procedure in 2013 as the supplier of last resort and the universal service provider for a period of five years. As supplier of last resort, the PPC supplies customers not currently represented by a supplier because of issue with their most recent supplier. This type of supply is temporary and shall be provided for a maximum of three months to give customers sufficient time to negotiate a new contract with a supplier of their choice. As universal service provider, the PPC supplies household customers and small enterprises with connection capacity up to 25kVA, which either fail to exercise their right to select a supplier or are unable to find a supplier in the liberalised market on the same commercial terms as they previously had. Both the aforesaid PSOs are undertaken by the PPC at an extra, also regulated, charge for the customers concerned.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The general supervision of the Greek electricity sector is entrusted to the Minister of Environment and Energy (the Minister) who acts in consultation with the RAE for the formulation of the long term energy planning of Greece taking into account national, regional and global energy matters. The subject policy is formed on a 10-year rolling basis with a view to completing the EU single energy market; securing electricity supply at national level; implementing a sustainable climate change policy; protecting the environment while promoting more efficient and environmental friendly renewable energy technologies without risking the security of electricity supply; national regional development and isolated network integration; improving the productivity and competitiveness of the national economy while achieving fair competition at reduced energy prices and addressing energy poverty.

23 Scope of authority

What is the scope of each regulator's authority?

Notwithstanding the Minister's general supervision authority, the core of the electricity sector regulation authority is nowadays vested in the RAE. The RAE is hence responsible for monitoring and reporting every two years on security of electricity supply; granting, amending and revoking electricity sector licences (eg, electricity production, supply and trading); monitoring the electricity networks development programmes prepared by the competent grid operators; approving the underlying methodology for electricity transmission and distribution charges; granting third-party access and ownership unbundling exemptions for interconnections, in cooperation with other national regulators concerned; resolving on closed distribution networks; monitoring and certifying the independence of transmission system operators, such as the IPTO; regulating and monitoring interconnections capacity allocation and tariffs, in cooperation with other national regulators concerned; supervising, monitoring and regulating the domestic electricity market at both wholesale and retail level, including the imposition of specific terms and conditions on electricity undertakings, in order for fair competition and proper market operation to be achieved, the latter in cooperation with the Hellenic Competition Commission (HCC); ensuring customers' protection from a regulatory perspective; resolving formal complaints filed against electricity networks operators; and ordering interim measures owing to imminent dangers to public health, security and order, or fair competition or owing to imminent economic or operational danger to electricity undertakings.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The RAE was established in July 2000 by virtue of the Electricity Market Liberalisation Law 2773/1999, which transposed the first EU Electricity Directive 96/92/EC into national legislation as an independent administrative authority enjoying legal, financial and operational independence from the Greek government. Typically, the RAE is subject only to parliamentary and judicial control. Moreover, the members of the RAE (totalling seven) are senior state officials enjoying full personal and operational independence outside the control or supervision of other governmental officials. Hence, they cannot be removed from their office during their term of service (ie, five years up to two terms) although the President and the two Vice Presidents are appointed by the Council of Ministers and the remaining four members by the Minister following an opinion of the Institutions and Transparency Committee of the Hellenic Parliament on the Minister's proposal. In addition, they cannot be associated with or employed by any electricity undertaking in any way whatsoever during their term of service and for up to two years thereafter. Finally, they cannot hold shares of any such electricity undertaking, unless they do so through mutual or pension funds.

The financial independence of the RAE, which is an essential condition in order to preserve the Authority's independence, was effectively ensured by the provisions of Law 2837/2000, through which it is anticipated that the Authority will possess its own resources. These resources are managed in accordance with the Presidential Decree 139/2001 on the Regulation for the Internal Operation and Administration of RAE, while financial management is subject to ex post auditing by independent auditors and the Court of Auditors.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

The RAE's individual administrative acts (eg, decisions on awarding or rejecting an electricity sector related licence) could be and should be typically appealed to the RAE itself before they can be further challenged at first instance before the Athens Administrative Court of Appeals and at second instance before the Council of the State, the supreme administrative court of Greece. RAE decisions of a regulatory nature (eg, approval of networks codes and tariffs methodology) can only be challenged at first and last instance before the Council of the State in order to be annulled. Typically, the grounds for their annulment would be the RAE's lack of authority in issuing the decision in question, the infringement of a substantial norm of administrative process, the infringement of a substantive provision of law and the abuse of its discretionary power to decide on the matter.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Other than concentrations with a Community dimension, as defined by the EU Merger Regulation 139/2004, in which case it will be appraised by the European Commission (EC), the competent body for the enforcement of the applicable merger control rules at national level, as they are provided for in Law 3959/2011 on the protection of free competition, is the HCC, an independent authority enjoying personal and operational independence.

The RAE is also responsible for the approval of any change affecting the control of an electricity producer or the disposal of its rights over valuable assets, such as material equipment and land rights required for power generation purposes, to the extent that certain overlap of authorities between the RAE and the HCC is openly admitted with respect to

Update and trends

In May 2016, Law 4389/2016 introduced major structural reforms in the electricity sector such as (i) the full ownership unbundling of the IPTO from the vertically integrated undertaking PPC by February 2017; (ii) the introduction of a new interim capacity payment mechanism for power generators (the flexibility capacity remuneration mechanism) and the introduction of a permanent capacity remunerating mechanism by May 2017; and (iii) the introduction of forward electricity products auctions (based on the French NOME system) with a view to limiting PPC's share in the retail market below 50 per cent by 2019 and enhance competition. Also, Greece is bound under the MoUs attached to its financial assistance agreement with the ESM for the period 2015–2018 to progressively reform the current design of the electricity market by December 2017 in line with the EU Target Model. The government, in close cooperation with all directly involved market stakeholders such as the RAE, the IPTO, the HEMO and the PPC, has already initiated the necessary actions to abide with the very tight timelines set out under the law. These reforms are expected to radically change the profile of the Greek electricity market within the next few years.

Moreover, the very recently adopted new national support scheme for renewable electricity for the period 2016–2020 is intended to better integrate renewables into the national electricity market as well as limiting the level of support so as not to over-reward renewable electricity projects.

In addition, the IPTO is implementing an ambitious plan for the interconnection of several NIIs to the mainland grid, such as the Cyclades island group and the island of Crete, in an effort to rationalise the power production cost, exploit the untapped renewable potential and ensure the security of supply of these areas. Moreover, the interconnection of Crete is also viewed as part of the much more ambitious privately initiated EuroAsia Interconnector project, which aims to create an electricity interconnection between the electricity systems of Israel, Cyprus and Greece.

changes in control of utilities. However, the HCC remains the ultimate competent body in this respect. For renewable energy projects in particular, the RAE ascertains and approves such changes of control based on the financial strength and capability of the new investor or project sponsor to secure the financing of the relevant project or projects.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

A concentration of independent undertakings (meaning any joint venture, merger, acquisition or change of control) must be previously notified to the HCC when the total turnover in the world market of all the undertakings participating in the concentration amounts to at least €150 million and each of at least two of them have a total turnover in the Greek market in excess of €15 million.

The HCC assesses the notification and decides within one month whether the concentration falls within the boundary of Law 3959/2011 and whether it raises any fair competition concerns for the relevant market. If yes, the HCC president orders the full investigation of the concentration in question and its hearing before the HCC within 45 days. Regardless of any commitments proposed by the undertakings concerned, the HCC must typically issue its final decision blocking the transaction within 90 days from notification. Otherwise the notified concentration is considered to be approved by the HCC and the HCC issues relevant attestation. In exceptional cases, the HCC may extend this 90-day period to 105 days.

The notified concentration must not be completed before the issuance of the HCC clearance decision. Otherwise a fine ranging from €30,000 up to 10 per cent of the total turnover of the undertakings concerned may be imposed by the HCC. HCC decisions may be appealed before the Administrative Court of Appeal of Athens.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The HCC and the RAE have concurrent powers to prevent or prosecute anticompetitive or manipulative practices in the electricity sector. In brief, the RAE is mainly competent to prevent such practices and to lift their implications on fair competition and on the electricity market in general, while the HCC is mainly competent to prosecute them and to impose the relevant fines at the request and with the support of the RAE. To this end, the RAE has the power to impose specific measures and terms on electricity undertakings in order to safeguard fair competition in the electricity market. Moreover, the RAE may demand any information from electricity undertakings and may conduct investigations with the same means and rights with the HCC, in order to identify infringements of competition law in the electricity sector.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Mirroring the provisions of articles 101 and 102 of the Treaty on the Functioning of the European Union, Law 3959/2011 prohibits the abuse of dominant position in the Greek market or in part of it as well as any agreements between undertakings and concerted practices which lead to the prevention, restriction or distortion of competition and in particular:

- direct or indirect price fixing;
- the limitation or control of production, markets, technical development, or investment;
- sharing markets or sources of supply;
- the application of dissimilar conditions to equivalent transactions with other trading parties in a way that distorts competition; and
- the dependency of the conclusion of contracts on the acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The HCC may initiate an investigation on its own initiative or following a complaint or a request from the minister of development and competitiveness or at the request of the RAE. In case that the HCC identifies an anticompetitive or manipulative practice it has the authority to issue recommendations; to order the discontinuation of the breach; to impose structural or behavioural remedies (ie, divestment); or to impose a fine which may amount up to 10 per cent of the total turnover of the undertaking concerned.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

In general, there are no special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies and especially from companies originating from an EU member state. However, from the perspective of the EU internal energy market legislation as well as relevant national law, the acquisition of an interest in the IPTO is possible, provided that the rules on unbundling of transmission systems and transmission system operators are respected. Moreover, if a person from a non-EU country intends to acquire an interest in the IPTO, due consideration should also be given in such a case to the RAE's right to refuse certification of the independence of the IPTO for reasons of security of supply.

Also, a prior approval is required for the acquisition of real estate rights in regions of Greek territory designated as border areas for individuals and legal entities that are not Greek or do not have their citizenship or place of business within a member state of the European Economic Area. This is a general and not an electricity sector specific requirement.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

The licences required for the construction of an interconnector within the Greek territory are similar to those required for the construction of transmission networks mentioned in question 9. The operation of the Greek section of an interconnector is performed by the IPTO, in its capacity as the exclusive owner and operator of the System under the Energy Markets Law 4001/2011.

Interconnectors, which have been labelled as projects of common inerest (PCIs) under the relevant EU legislation, are benefiting from accelerated and streamlined permit granting procedures under the national legislation.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

In its capacity as an EU member state, Greece applies the cross-border electricity supply rules set out under EC Regulation No. 714/2009, which aims at stimulating cross-border exchanges in electricity by establishing a compensation mechanism for transit flows of electricity and by introducing harmonised principles on cross-border transmission charges and the allocation of available interconnection capacities between national transmission systems. In this context, Greece has set up a detailed framework governing the allocation and assignment of transmission capacity rights in the international interconnections with its neighbouring electricity systems (ie, Bulgaria, Italy, Albania, FYR of Macedonia (FYROM) and Turkey) for both directions (electricity exports from and electricity imports to Greece). The available transmission capacity on each international interconnection of the Greek System is allocated and assigned through regular auctions carried out on a yearly, monthly and as the case maybe daily basis. More specifically, the Joint Allocation Office facilitates the explicit auctions (in yearly, monthly and daily resolution) for the interconnector with Italy. For the Greek–Bulgarian interconnector, the IPTO applies a joint auctions scheme together with the Bulgarian TSO, ESO EAD, with the IPTO conducting the yearly and daily auctions. For interconnectors with Albania and Turkey, auctions for capacity allocation are performed (in yearly, monthly and daily resolution) from the South East Europe Coordinated Auction Office. Finally, for the interconnector with FYROM, the IPTO is responsible for allocating only 50 per cent of the interconnection capacity, with the neighbouring TSO, namely MEPSO, being responsible for the remaining 50 per cent. In this case, the IPTO facilitates yearly, monthly and daily auctions for the allocation of such capacity.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

On the basis of the regulatory requirements set out under national law in relation to the legal and functional independence of the network operators (ie, the IPTO and the HEDNO) from their sole shareholder, the PPC, both operators are responsible for ensuring non-discriminatory access and connection to the respective grid between users, particularly in favour of their related undertakings. Moreover, the IPTO is obliged to submit for approval by the RAE all commercial and financial agreements it enters into with the PPC and to keep detailed records of such commercial and financial relations and make them available to the RAE upon request.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

Non-compliance of an electricity utility with the restrictions set out under the law may result in the imposition by the RAE of a fine of up to 10 per cent of the electricity utility's annual turnover. The fine must be proportional to the severity and frequency of the infringement. In case of repeated breach, the RAE may initiate the process for revocation of electricity undertaking's licence. Moreover, in case the IPTO systematically breaches its independence compliance programme by acting in favour of the PPC, the RAE may designate a third party as the independent operator of the system.

NORTON ROSE FULBRIGHT

Dimitris Assimakis **dimitris.assimakis@nortonrosefulbright.com**

Building K1, 1 Palea Leoforos Posidonos &
3 Moraitini Street
175 01 Delta Paleo Faliro
Athens
Greece

Tel: +30 210 94 75 415 / 409
Fax +30 210 94 75 301
www.nortonrosefulbright.com

India

Neeraj Menon, Riyaz Bhagat and Pranjal Bhattacharya
Trilegal

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Constitutional framework
The seventh schedule of the Constitution of India sets out the subjects on which Parliament and the state legislatures can frame legislation, and demarcates such subjects in three lists, namely Union List, State List and the Concurrent List. While Parliament and the state legislatures legislate exclusively upon subjects mentioned in the Union List and the State List respectively, the subjects mentioned in the Concurrent List can be legislated upon by both. However, in case of a conflict between the laws made by the state legislatures and Parliament on the same subject matter under the Concurrent List, the state legislation will be void to the extent it is inconsistent with legislation made by Parliament. Electricity is a subject mentioned in the Concurrent List.

Legislative framework
The Electricity Act 2003 (the Electricity Act) is the parent legislation governing the electricity sector in India (other than for nuclear energy, which is governed by the Atomic Energy Act 1962). The Electricity Act consolidated various laws governing the electricity sector in India and introduced key reforms such as:

- restructuring of state electricity boards into separate entities governing generation, transmission and distribution activities;
- delicensing most generation activities, recognising power trading as a distinct activity and promoting captive generation;
- introducing the requirement for providing non-discriminatory open access;
- constituting electricity regulatory commissions at state and central levels (ie, state electricity regulatory commissions (SERCs) and the Central Electricity Regulatory Commission (CERC) respectively), and an appellate tribunal (ie, the Appellate Tribunal for Electricity (APTEL), inter alia) to hear appeals against decisions of the SERCs and CERC;
- recognising the Central Electricity Authority (CEA) as the technical advisory body to the government of India (GoI) and the electricity regulatory commissions; and
- promoting renewable energy projects.

In accordance with the provisions of the Electricity Act, the GoI, in consultation with the CEA and state governments, has prepared the National Electricity Policy 2005 (NEP) and more recently, the revised Tariff Policy 2016 (Tariff Policy) for the development of the power sector, based on optimal utilisation of natural resources.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The Electricity Act restructured the electricity sector into separate generation, distribution and transmission sectors. Additionally, there exists a separate market for electricity trading that is undertaken by companies with a trading licence or at power exchanges.

Generation
Generation of electricity (including captive generation) is a delicensed activity (other than for hydro projects exceeding the notified capital cost, for which an approval of the CEA is required). Private entities are permitted to set up power stations using any type of fuel or power source (such as coal, gas, wind, solar and biomass) except for nuclear power projects, which may be undertaken only by a GoI entity or a government company (ie, where the government holds a minimum of 51 per cent of the shareholding).

Power generation activities in India are dominated by long-term power offtake purchase agreements. For thermal power projects (coal and gas) and hydro projects, long-term power is procured either through a negotiated route or a competitive bidding route. Under the negotiated route, a distribution company's power procurement tariff is determined by the relevant electricity regulatory commission, upon considering various factors such as return on equity, interest on loans and working capital, depreciation, operation and maintenance expenses and allowances for any renovation and modernisation. Under the competitive bidding route, the tariff discovered through a competitive bidding process is adopted by the relevant electricity regulatory commission and procurement is governed by standard bid documents (including power purchase agreements (PPAs)), which are issued by the Ministry of Power, GoI (Power Ministry). While the statutory option to procure electricity under the negotiated route still exists, the Power Ministry has directed state governments and distribution companies to procure power only under the competitive bidding route (except that negotiated route may be used for hydro power projects until the end of 2022).

Prior to 2013, all tariff-based competitive bidding for thermal power projects was done through standard bidding documents, which provided for two modes for procurement (ie, Case 1 and Case 2). Under Case 1, all project assets and inputs (such as land, fuel, water, etc) and relevant statutory approvals required for the construction and operation of, and the supply of power from, the power station had to be arranged by the power producer, while the same had to be arranged by the distribution licensee in Case 2. While these standard bidding documents provided a comprehensive framework for procurement of electricity, they did not address key concerns such as shortage of fuel availability in the domestic market, indexation of fuel prices to market rates, uncertainty in obtaining key approvals such as environmental clearance, delays in land acquisition and foreign exchange variations.

In order to address the manifold concerns of all stakeholders, in 2013 the Power Ministry issued revised competitive bidding guidelines and standard bidding documents that provided for two modes of bidding and supply of electricity (the Revised SBDs):

- design-build-finance-own-operate model (DBFOO) (on the lines of Case 1); and
- design-build-finance-operate-transfer model (DBFOT) (on the lines of Case 2).

The Revised SBDs prescribe higher normative availability, single-variable bidding, restrictions on usage of fuel procured at subsidised rates from government suppliers, pass-through of variable charges (including cost of fuel) to consumers, detailed construction, operation and maintenance standards, appointment of a mandatory independent engineer for each project and also provision for the cost of

imported fuel to be benchmarked at actuals and linked to prevailing prices on international indices.

Following the dismal industry response to the competitive bidding process for allotment of ultra mega power projects (UMPPs, ie, coal-based projects of 4,000MW capacity) that were proposed on the DBFOT model and general criticism from developers and lenders with respect to various aspects of the DBFOT model, the Power Ministry is in the process of revising the standard bidding documents for UMPPs. The draft bidding documents for UMPPs (which are based on domestic captive coal blocks) contemplate a build, own and operate structure where the government provides part of the land for the power plant and the captive coal block on a long-term lease to the selected bidder and the selected bidder is required to build and operate a power plant and sell the power generated under a long-term PPA with state distribution licensees. The draft proposes that upon expiry of the PPA term the power generator will cease to have any rights over the coal block but will continue to have leasehold rights over the power plant land. The Power Ministry has not clarified the rationale of this approach and hence this structure appears to be fraught with key bankability issues. A key lender concern is the obligation on the developer to acquire the remaining part of the land (ie, the land required in addition to the part of the land provided by the government) required for setting up the power plant and captive coal block.

In addition to long-term power procurement guidelines, the Power Ministry has introduced guidelines (and revised standard bidding documents) for medium-term (one to five years) procurement of electricity from coal, gas or hydro-based power stations, and power traders and distribution licensees having back-to-back arrangements with power generators. The Power Ministry has also introduced guidelines and standard bidding documents for procurement of peaking power, and has issued revised guidelines for the procurement of power on a short term basis (ie, for a period of more than one day up to one year). The revised guidelines introduce tariff determination through an e-auction with an overall aim of reducing power procurement costs in the short term for distribution licensees. Additionally, the Power Ministry is also finalising new bidding documents for short-term power procurement (one day to one year).

For renewable energy projects, power is typically procured through contracts entered into with state utilities under specific state policies at a regulator determined feed-in tariff or at a tariff discovered through competitive bidding depending on the state or central policy. For promotion of renewable energy projects, electricity regulatory commissions have mandated all distribution utilities, captive-power users and/or open-access consumers to procure a prescribed quantum of electricity generated from renewable energy sources (ie, a renewable purchase obligation (RPO)), along with conventional power sources. In January of this year, the revised Tariff Policy was notified with some of the key highlights being increase in the solar RPO to 8 per cent by 2022, procurement of power from renewable energy sources by distribution licensees to be done through competitive bidding from a date to be notified by the central government and applicability of RPOs on co-generation power plants. In order to further this objective, the relevant electricity regulatory commissions have introduced market-based policy instruments (referred to as renewable energy certificates (REC)), which the renewable energy producers can get if they do not opt for the preferential feed-in tariff offered by distribution utilities. Recently, the CERC has made distribution licensees procuring renewable power above their RPOs eligible for obtaining RECs and also increased REC validity period. This is intended to incentivise the distribution licensees to procure renewable energy. Additionally, the Supreme Court of India (Supreme Court) has also upheld the imposition of RPO on captive power generators and open-access consumers on the ground that there is a need to promote renewable energy. On the other hand, despite electricity regulatory commissions having the authority to enforce RPOs, there is repeated failure by the state distribution utilities to comply with their RPO requirements, and accordingly there is abundant supply of RECs in the market, with few takers. In this regard, penalties for non-compliance with RPOs are proposed to be increased under the proposed amendments to the Electricity Act (Electricity Act Amendments) and the proposed Renewable Energy Act (RE Act).

Another mode of setting up generation facilities is through captive power plants where the captive power user has to hold a minimum of 26 per cent of the ownership of such power plant and should consume at least 51 per cent of the annual aggregate electricity generated by such power plant. The CERC has recently amended its regulations, to disqualify renewable energy generators (including captive generators), to the extent of their self-consumption, and renewable energy generators, selling power on open access while availing promotional wheeling, transmission, cross-subsidy or banking charges, from obtaining the benefit of RECs. The amendment aims to reduce the unsold inventory of RECs, of which a major portion is contributed by captive generators. The CERC was of the view that developers under the third-party model were able to leverage the concessional benefits, while participating under the REC framework, and has therefore amended the regulations in order to prevent developers from doing so. However, the CERC has given renewable energy generators (including captive generators) the option of availing the benefit of RECs three years after they forgo the benefits of concessional transmission or wheeling charges or the banking facility benefits or both.

Transmission

Transmission of electricity in India is a licensed activity and transmission systems are divided into interstate and intrastate transmission systems. The interstate transmission system is mainly owned and operated by Power Grid Corporation of India Limited, a GoI-owned company, and the intrastate transmission systems are owned and maintained by state transmission utilities.

Transmission projects may be undertaken for developing new transmission systems or for strengthening the existing transmission system (which typically include investments in substations along with transmission lines for augmenting the capacity of the existing transmission system). In a manner similar to generation projects, such projects may be implemented under two modes, namely the negotiated route (where the transmission tariff is determined by the relevant electricity regulatory commission) and the competitive bidding route (where the transmission tariff is discovered through competitive bidding under standard bidding documents). For inter-state transmission projects, the revised Tariff Policy states that while all future inter-state transmission projects should ordinarily be developed through competitive bidding, the central government may give an exemption for certain projects that are of (i) strategic importance or technical upgrading and (ii) where works are required to be done to cater to an urgent situation on a case-to-case basis. For intra-state transmission projects involving a project cost beyond a certain threshold, which will be determined by the respective SERC, such projects are to be developed only through the competitive bidding route.

Distribution

At present, the sale and distribution of power to consumers is undertaken under a single licence and once the distribution licence has been issued, the licensee does not require a separate licence for the sale of power. However, the Electricity Act Amendments propose segregation of supply and distribution activities by allowing multiple suppliers of electricity to use the distribution network provided by a separate entity, each requiring a separate licence. It is proposed that distribution licensees give up all supply-related functions. Furthermore, existing power procurement arrangements of distribution licensees will vest in intermediary companies, which will be specially created for this purpose.

Trading

Electricity trading is a distinct recognised activity for which a separate licence is required (except for distribution licensees) from the CERC or an SERC (for interstate and intrastate trading respectively). Trading may involve purchase of power from the generating station to the distribution licensees for onward sale to consumers or purchase of electricity from generating stations or distribution licensees for sale to end consumers.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

As mentioned earlier, generation is delicensed subject, however, to approvals and procedures under other laws such as land acquisition laws, environmental clearance, corporate and labour compliances,

approvals for use of restricted land and consent to establish and operate the power station from pollution control authorities. Further, in the case of power stations operated using domestic coal, the developer is required to obtain a coal linkage (which provides for assured fuel supply from the coal mines of Coal India Limited and its subsidiaries), or operate the power station using coal extracted from a coal block specifically allotted to it by a government entity. If coal used is from an allotted mine, the developer is also required to obtain specific approvals (such as environmental clearance) in relation to the coal mine. The Ministry of Environment, Forests and Climate Change recently issued a notification pursuant to which stand-alone coal fired thermal power plants of all capacities are required to be supplied with, and are required to use, raw or blended or beneficiated coal with ash content not exceeding 34 per cent, on a quarterly average basis.

All power-generating stations are also required to comply with technical standards prescribed by the CEA, including those in relation to construction of power plants, safety requirements for construction and operation and maintenance. Hydropower projects above 25MW have an additional requirement to obtain a techno-economic clearance from the CEA before commencement of construction works. Similarly, a clearance is required from the Atomic Energy Regulatory Authority for atomic energy-based power plants.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Under the Electricity Act, each transmission licensee is required to provide non-discriminatory use of transmission lines, distribution systems or associated facilities to a licensee, consumer or a person engaged in generation. Grant of connectivity and long, medium or short-term open access is governed by regulations issued by the CERC and the respective SERCs.

An applicant is first required to obtain connectivity to the transmission network and then obtain long, medium or short-term open access, as the case may be, depending on the time period for which it requires the transmission capacity. On obtaining these approvals, an applicant can interchange power with the transmission grid.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The regulatory environment increasingly seeks to incentivise renewable energy, with favourable tariff regimes established by SERCs. The Electricity Act, the NEP and the Tariff Policy encourage private-sector participation in renewable energy through measures such as providing for feed-in tariffs and fixing RPOs for obligated entities. Benefits such as the continued availability of accelerated depreciation for wind power projects, and exemptions from payment of electricity duty (which are state-specific but are typically granted by a majority of the states) are provided to renewable power generators. Further, the revised Tariff Policy also provides that inter-state transmission charges (and losses) shall be waived for inter-state sale of power from solar and wind power projects up until a date that is to be notified by the central government. Having said that, unlike for conventional power generation, renewable power projects are primarily based on state-specific policies that provide incentives and policies that are not always consistent between states and developers often shop around based on what best suits their financial model and operational expertise. This is one of the reasons for some states to have witnessed a tremendous growth in the renewable energy sector compared with others.

As regards wind energy, while onshore wind power projects account for a substantial portion of the installed renewable capacity in India, the government issued the National Offshore Wind Energy Policy in September 2015 with an aim to promote the country's offshore wind energy potential. The principal agency charged with the development of the sector is the National Institute of Wind Energy (NIWE). Under this policy, blocks are to be allocated through a competitive bidding route and developers are required to enter into sea bed lease agreements with NIWE. As a part of the planned off-take arrangement, NIWE or the respective state distribution utilities will sign power purchase agreements. Transmission utilities owned by the government will provide the onshore infrastructure required to evacuate power generated from these projects. Offshore power evacuation infrastructure up to the first onshore substation will have to be constructed by developers at their own cost.

With respect to onshore wind projects, the MNRE has, on similar lines to the National Solar Mission (NSM), recently issued a scheme for the development of 1000MW of capacity which will be connected to the CTU for inter-state sale of power. Projects will be selected based on tariff discovered through a transparent competitive e-bidding process. The scheme provides that SECI, who is the nodal agency for implementation of the scheme, will select a trading licensee with whom the wind power generators will sign power purchase agreements and the trading licensee will in turn sign power supply agreements with state distribution licensees.

Solar plants can be set up under state policies or the GoI-launched NSM. The NSM has been at the forefront of the GoI's renewable energy policy. Solar projects, under either the NSM or state specific policies, are envisaged to be developed in a phased manner with a target of achieving 100GW (increased from the original target of 20GW) of installed solar capacity by 2022. After successfully implementing both batches of Phase I and Batch I and II of Phase II of the NSM, the Renewable Energy Ministry has issued final guidelines for Batch III of Phase II, which propose to add capacity aggregating 2,000MW in solar parks. The power generated from these projects will be purchased by the respective states in which the projects are located. In a departure from Batch II Phase II (but similar to Batch I Phase II), solar power in Batch III is proposed to be procured under the viability gap funding scheme where tariff is predetermined and bidders are selected on the quantum of discount they are willing to accept on the viability gap funding to be provided by the government. Out of the total target of 100GW, the GoI intends to develop 40GW through rooftop solar projects and the remainder through ground-mounted solar projects. To achieve these targets the GoI is developing large solar parks in collaboration with the state governments and has also issued detailed guidelines for their development. The intention is to provide ring-fenced, shovel-ready land to the power developer along with providing the associated power evacuation facilities.

In the context of municipal waste-to-energy projects, while Indian cities present significant scope for growth, the industry has faced intense opposition on account of environment and health concerns. The GoI is undertaking measures to promote waste-to-energy projects. In this context, the National Biofuels Policy has recently been introduced, which, among other things, promotes research and development into technology using biofuels for generation of power.

On a broader policy canvas, the GoI appears to be determined to promote and develop renewable energy and is taking several measures to fine-tune the policy and regulatory framework. In addition to the revised Tariff Policy which was notified in January 2016, some of the headlining proposed legislative and policy changes are:

- provisions in the Electricity Act Amendments, with specific focus on renewable energy; and
- separate legislation for renewable energy (ie, the RE Act) for addressing issues that are not dealt with under the Electricity Act.

Some of the key changes proposed to be introduced through these amendments are:

- mandatory renewable energy generation obligations;
- promotion of low-cost financing;
- grid connectivity provisions specific to renewable power;
- compliance planning by obligated entities for RPOs;
- payment security for renewable energy developers; and
- promotion of net metering.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

India has ratified the United Nations Framework Convention on Climate Change and has also ratified the Kyoto Protocol (but with no binding obligations) to reduce its greenhouse gas emissions.

Consequently, the GoI launched the National Action Plan on Climate Change, under which major initiatives such as the NSM have been introduced, and the Wind Energy Mission and Waste to Energy Mission are proposed. Additionally, sharing of Clean Development Mechanism benefits (between the developer and the consumer, usually a state-owned distribution utility) is present across most states. With China and the United States recently ratifying the Paris Agreement, all eyes are on countries such as India, Russia, Japan and Brazil to see how long these countries will take to ratify the Paris Agreement as well.

That being said, the cost of setting up a solar or a wind power project is relatively high in comparison with a thermal power project and consequently the tariff of electricity procured from clean energy sources continues to be higher than that procured from conventional energy (barring some states in which the wind power tariff is at par with the tariff for electricity generated from conventional sources, or even less). That being said, solar tariffs reached an unprecedented low earlier this year with tariffs for projects under the NSM being fixed at 4.34 rupees per unit. However, while the trend is towards lower tariffs that will eventually see solar tariffs achieving grid parity, to bring about tariff parity and promote development of projects based on clean energy the government has introduced two mechanisms:

- to mandate procurement of power from clean energy projects through the RPO mechanism; and
- to actively promote growth of domestic technology for bringing cost efficiency in the clean energy space.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Currently there is no regulatory framework supporting electricity storage in India. However, the GoI in its Annual Budget in 2016 announced the launch of a new programme for energy storage. Further, media reports mention that the government is also working on a policy framework to introduce on-site storage integration for wind and solar power projects. The government has already launched the National Smart Grid Mission through which the government has introduced incentives such as a 30 per cent capital grant for the project cost and separate grants for training and capacity building for micro-grids, which will in turn require energy storage technologies.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

While the government is positive about setting up power stations based on nuclear energy (and has already installed around 5,780MW of capacity), currently only a GoI entity or a government company (ie, where the government holds a minimum of 51 per cent of the shareholding) can own and operate a nuclear power plant. Private ownership of nuclear power generation assets is not allowed.

A major issue that had hampered private investment in other areas of nuclear power generation was the interpretation of a provision of the Civil Liability for Nuclear Damage Act 2010 (CLND Act) as mandating a civil nuclear liability clause in supply contracts, therefore dissuading foreign equipment suppliers from supplying to Indian nuclear power projects. However, recently the GoI clarified that while the legislation would not be amended, it was not mandatory to include a civil liability clause in the contractual arrangements between the foreign supplier and the Indian operator. This clarification was provided as a part of responses to certain 'Frequently Asked Questions' issued by the GoI and has therefore led to concerns that such a stance may not be legally binding. While it is highly unlikely, it remains to be seen whether the Nuclear Power Corporation of India (a government company and operator of nuclear power plants) will agree to undertake such liability. Recently, India also ratified the Convention on Supplementary Compensation for Nuclear Damages (CSC) which has been hailed as an important step towards creating a global nuclear liability regime. It is important to note that ratification of the treaty requires national law to be in compliance with article 10 of the CSC, which states that national law may provide that an operator may have a right of recourse only if this is expressly provided for in writing or if the nuclear incident results from an act or incident done with an intent to cause damage. However, section 17(b) of the CLND Act in India adds another instance where an operator may have recourse to the supplier and that is if the nuclear incident occurred owing to an act of the supplier, which includes supplying parts with a latent or patent defect. The GoI has also issued a clarificatory response in relation to section 17 (b) of the CLND Act stating that while the language of section 17(b) is in addition to the provisions of article 10 of the CSC, it relates to actions and matters such as conditions of service and contract. The GoI is of the view that these are in any case ordinarily a part of the contract and are not a novel or new method of tracing liability back to the supplier. In a related development, the India Nuclear Insurance Pool has recently been launched to provide insurance cover to operators of nuclear power plants and suppliers.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Owning and operating transmission assets requires a licence from the CERC for interstate transmission facilities and the relevant SERCs for intrastate transmission facilities. The appropriate electricity regulatory commission may, on the recommendation of the government and in public interest, even permit any local authority, cooperative society, government institution, etc, to transmit (and distribute) electricity, subject to certain terms and conditions, without a licence. While issuing any licence, the Electricity Act allows the appropriate commission to specify any general or specific conditions that a licensee must comply with.

Transmission licensees also require right of way from landowners for construction of transmission lines, approvals under the Electricity Act for installation of overhead lines and installation of transmission towers, apart from other applicable clearances such as those from the Ministry of Environment and Forests. Alternatively, the Electricity Act also enables a transmission licensee to place and maintain a transmission line on any immoveable property, upon being authorised by the government. The government authorisation entitles the transmission licensee to enter any privately owned or occupied land without the notice or consent of the owner or occupier to carry out the works required for setting up the transmission project. The central government has issued guidelines for the payment of compensation to land owners for obtaining right of way for the construction of transmission lines. The guidelines are applicable for transmission lines of a voltage of 66kV and above. The guidelines state that compensation of an amount equal to 85 per cent of the market value of the land should be paid to land owners for the land required for construction of the tower base area. Further these guidelines also state that compensation of up to 15 per cent of the land value should be paid to land owners for the diminution in the width of a right of way corridor owing to the construction of transmission lines. In addition to the above, the licensee also needs to comply with regulations issued by the CEA and CERC in relation to grid and technical standards upon grant of the transmission licence.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

The open access regulations issued by the relevant electricity regulatory commissions permit usage of transmission lines by any generating company, distribution licensee, any consumer with a requirement of over 1MW of electricity and electricity traders, provided they comply with the requirements of obtaining connectivity and open access to the transmission system. The regulations also cast an obligation on the licensees to provide non-discriminatory access to their transmission lines upon application for such access. The applicant is required to pay transmission charges and other charges as applicable, which may include a cross-subsidy surcharge, wheeling charges and open-access charges.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The government is looking to increase private participation to strengthen transmission networks and has introduced a string of measures such as introduction of competitive bidding for transmission projects and a viability gap funding model on a PPP structure for setting up intrastate transmission networks. The interstate transmission system is mainly owned and operated by Power Grid Corporation of India Limited (PGCIL), a state-owned company, and the intrastate transmission system is owned and maintained by state transmission utilities. However, the PPP structure is increasingly being preferred by the government for setting up interstate and intrastate transmission networks. Furthermore, transmission of electricity is exempt from the incidence of service tax, and the Income Tax Act 1961 also provides for a 10-year tax holiday for transmission licensees undertaking transmission of power by 31 March 2017.

Additionally, major steps are being taken to strengthen the transmission network such as the commissioning of India's first ultra mega transmission project, setting up a green energy corridor project (facilitating the transmission of electricity produced through renewable energy sources) and the connection of the southern grid to the national grid, leading to synchronisation of all regional grids.

It is generally seen that impetus is specifically being given to the transmission sector through various measures including introduction of the National Smart Grid Mission to implement a smart electrical grid based on technology for automation, communication and IT systems, to monitor and control power flows from points of generation to points of consumption; setting up of a National Transmission Asset Management Centre; and creation of Power System Development Fund drawing from congestion charges, deviation settlement charges and reactive energy charges, for primarily relieving congestion in government transmission systems of strategic importance; and renovation and modernisation of government transmission systems for relieving congestion. The government also proposed feeder separation to augment power supply to rural areas and for strengthening sub-transmission and distribution systems.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The rates and terms for the provision of transmission services are determined by the appropriate regulatory commission (the CERC in the case of interstate transmission and the relevant SERC in the case of intrastate transmission). For transmission schemes implemented through the negotiated route, transmission charges are determined by the relevant electricity regulatory commission in line with tariff regulations issued by it, which take into account factors such as return on equity, interest on loan capital and working capital, depreciation, operation and maintenance expenses and allowance for any renovation and modernisation. Under the competitive bidding route, transmission charges discovered through a competitive bidding process are required to be adopted by the relevant electricity regulatory commission.

Once the charges for a transmission network are determined or discovered, the CERC adopts a 'point-of-connection' method for calculating charges payable by each user in the transmission system based on its actual usage and develops a transmission charge-sharing mechanism among grid constituents. The 'point-of-connection' method is, however, not adopted for intrastate transmission for entities not connected to the interstate transmission system. The CERC has recently amended its regulations governing sharing of transmission charges and losses, making them applicable to intrastate entities with medium-term open access or long-term access to the interstate transmission network and introducing a reliability service charge, charge for using HVDC transmission lines and provisions for misdeclaration. Further, through another recent amendment, the CERC has waived the payment of transmission charges and transmission losses for incremental gas-based generation from the Regasified Liquefied Natural Gas e-bid auctions.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The CERC (Indian Electricity Grid Code) Regulations 2010 (Grid Code) brings together a single set of technical and commercial rules that facilitate planning and development of reliable national and state grids, encompassing all the utilities connected to or using the interstate transmission system. One of the key aspects of the Grid Code is to facilitate planning and development of economic and reliable national and regional grids. Furthermore, states have also issued their respective grid code regulations, for regulating the intrastate transmission grid network.

The key entities responsible for ensuring reliability of the transmission grid include the National Load Despatch Centre, the Regional Load Despatch Centre (established for five regions in India) and State Load Despatch Centres (established for each state). They ensure optimum scheduling and despatch and integrated operation of the power system in their respective jurisdiction. Additionally, the Central Transmission Utility and various State Transmission Utilities are responsible for planning and coordination of interstate and intrastate transmission system respectively.

The CERC has recently made regulations for ancillary services to be provided by power generators to improve reliability of the grid. Additionally, the CERC has recently amended the Grid Code to provide a procedure and mechanism for declaration of commercial operation of inter-state generating stations where generators are required to make such a declaration after demonstrating the unit capacity after a trial run and after obtaining the relevant clearance from the National Load Despatch Centre, the Regional Load Despatch Centre or the State Load Despatch Centre. Through the amendment, the CERC has clarified the procedure for such declaration of the commercial operations date for thermal and hydro-generating stations and inter-state transmission systems. The procedure involves successful completion of all tests that are required under the Grid Code, issuing notice to power procurers, if any, and successful completion of trial runs for the equipment or generating units to be commissioned.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Electricity distribution activities (except for distribution of electricity in rural areas notified by the relevant state government and distribution by notified exempted entities such as local authorities and non-governmental organisations) require a licence from the relevant SERC.

For obtaining a distribution licence, the entity is required to make an application to the SERC as prescribed in the Electricity Act along with the requisite fees. Additional clearances may be required from relevant authorities. In order to promote open access and competition in distribution activities, the Electricity Act permits two or more distribution licensees to operate within the same area of supply through their own distribution network and also permits applicants to file petitions for obtaining a distribution licence in the same area and for the same purpose, as previously granted to another distribution licensee, so long as they comply with additional requirements in relation to capital adequacy, creditworthiness and code of conduct as may be prescribed by the GoI. The Electricity Act Amendments prohibit having multiple distribution licensees unless in the public interest (as approved by the GoI) or in the case of pre-existing licensees, till expiry of the licence.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

It is an obligation of a distribution licensee to provide non-discriminatory supply of electricity to any person who is situated in the licence area, in accordance with the regulations made by the relevant electricity regulatory commission.

Every person whose premises are situated within the distribution licensee's area and who has given notice for wheeling electricity is

eligible to receive electricity from such distribution licensee or from any other supplier through the distribution licensee's network, by seeking open access. In the first option, the distribution licensee operating in a particular area is required to lay down its network, if required, in order to supply electricity itself to a consumer seeking supply. Under the second option, ie, through open access, a consumer has the right to require a distribution licensee to make its network available for wheeling electricity to such consumer from a third-party supplier upon payment of wheeling charges and an additional surcharge (in the nature of a cross-subsidy surcharge) as determined by the SERC to meet such distribution licensee's fixed costs arising out of its obligation to supply. The cross-subsidy charge is payable irrespective of whether the distribution licensee's network is used, in the case of third-party supply.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Electricity distribution is largely controlled by government distribution utilities, with minimal privatisation on account of significant historic liabilities of the state distribution companies. However, a few examples of privatisation in certain areas (such as Delhi, Orissa, Ahmedabad, Mumbai and Jamshedpur) have met with success. Tariff for electricity distribution, comprising wheeling charges and cost of supply, is levelled and determined on a cost-plus basis by the relevant SERC. The proposed amendments to the Electricity Act provide for disaggregation of distribution activities by requiring the supplier of electricity and distribution network provider to be separate entities so as to enable consumers to choose their supplier. Once these amendments come into force, supply of electricity will also require a licence from the relevant SERC, and the supply and distribution of electricity will be governed by separate operative codes to be issued by the relevant SERC. Furthermore, distribution of electricity is exempt from the incidence of service tax, and the Income Tax Act 1961 also provides for a 10-year tax holiday for distribution licensees undertaking transmission of power by 31 March 2017.

One of the major problems plaguing the distribution sector isthe abysmal credit ratings of the state distribution utilities and their persistent or extensive delays in making payments to generators under PPAs. Distribution utilities have borrowed heavily to finance losses in their businesses, and are facing major hurdles in repaying their debt. The government recently launched the Ujwal Discom Assurance Yojana (UDAY Scheme) with the objective of improving the operational and financial efficiency of state-owned distribution utilities. One of the major features of the UDAY Scheme involves requiring participating states to take over 75 per cent of the debt of distribution licensees by way of a grant over a period of two years. Such states may then issue non-statutory liquidity ratio bonds, including state development loan bonds for subscription by pension funds, insurance companies and other institutional investors. Under the UDAY Scheme, lenders and financial institutions will not levy prepayment charges on distribution licensee's debt and waive unpaid overdue interest, including penal interest. For financing future losses and working capital of distribution utilities, state governments will take over and fund future losses in a graded manner until the financial year 2020–2021. One of the much-praised aspects of the UDAY Scheme is its greater acceptability by the respective state governments as the debt proposed to be absorbed will not affect their fiscal deficit and in turn will not affect their budgetary allocation from the central government. This should in turn lead to distribution utilities significantly increasing their procurement of power that was constrained on account of their financial distress. However, the UDAY Scheme has been criticised in some quarters for a perceived lack of explicit central government support as part of the transitional financing mechanisms and a lack of operational control measures in terms of automatic fuel and power purchase price adjustments. While on the one hand, the industry is hopeful that the UDAY Scheme will provide a much needed shot in the arm to the distribution segment in the country, the response of states in the country will invariably determine its success or failure. To date, 10 states have signed up for the UDAY scheme, with more states likely to follow in the coming months.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The tariff for electricity distribution, comprising wheeling charges and cost of supply, is levelled and determined on a cost-plus basis by the relevant SERC. In this regard SERCs are also competent to formulate regulations which set out the terms and conditions for distribution of electricity. While determining the rates and terms, the SERCs are guided by factors mentioned in the Electricity Act, which include promotion of competition, safeguarding of consumers' interest and, at the same time, recovery of the cost of electricity. The rates so determined are usually notified by the relevant SERCs by passing tariff orders. In relation to cross-subsidies, the revised Tariff Policy provides that the cross-subsidy charge shall be an aggregate of weighted average cost of power; transmission and distribution losses, transmission, distribution and wheeling charges and per unit cost of carrying regulatory assets, if applicable. However, the revised Tariff Policy recognises that the new methodology for calculating cross-subsidy may not be suitable to all distribution licensees and therefore has given the SERCs the power to review and vary the same taking into consideration different circumstances prevailing in the area of relevant distribution licensee.

SERCs may also consider distribution and supply margins while arriving at returns for the distribution business, and the possibility of capping prices. Additionally, flexibility in the adoption of a surcharge formula and capping of surcharge at 20 per cent of tariff applicable to a consumer have been introduced.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Sale and distribution of power are bundled activities and hence, if a developer has obtained a distribution licence for distribution of electricity for a certain area, it has approval to sell power as well to both commercial and domestic consumers, and no specific authorisations are required.

Further, generating companies can also sell power directly to a bulk consumer using open access or through dedicated transmission lines. The consumer, however, is not allowed to further sell the power to other consumers. Licensed traders are also authorised to supply and trade in power. However, we should highlight that the Electricity Act Amendments contemplates the segregation of the supply (sale) and distribution businesses (operating the distribution network) and the introduction of multiple supply licensees and the restriction of having only one distribution licensee for a given area.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

The SERCs issue multi-year tariff regulations to regulate the procedure for determination of power sales tariff (comprising fixed charges and energy charges (which are usage-based)) of distribution licensees for various classes of consumers, the categorisation of which depends on the type of entities that require the electricity and the voltage levels at which the electricity is to be distributed. For instance, a separate tariff is determined for low-tension (LT) consumers (which includes domestic/residential and commercial units) and high-tension (HT) consumers (which includes industries and railways). The HT and LT classes of consumers are further subdivided depending on the type of entity to which electricity is to be supplied (for instance, HT 1A consumers include all manufacturing, industrial establishments and registered factories, while HT 1B tariff is determined for railways). The components and factors to be considered while determining tariff are similar to the components of generation tariff and include return on equity capital, interest on debt, interest on working capital, depreciation, power purchase cost and operation and maintenance expenses, albeit with respect to the distribution business.

With a view to promoting competition and also to bolster the segregation of content and carriage philosophy, the Electricity Act Amendments propose that while the tariff to be charged by the

distribution licensee will be determined by the SERC, the tariff to be charged by a supplier will be market-determined, subject to a ceiling to be specified by the SERC. That being said, the Electricity Act Amendments also enable the supplier to charge a tariff higher than the specified ceiling after obtaining regulatory approval.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

In furtherance of the multi-year tariff orders issued by each SERC for distribution tariff for various types of HT and LT consumers, distribution licensees file their respective petitions before the SERC for their area of supply. Such tariff petitions typically include true-up of the tariff based on the previous year (ie, specific adjustment required on a case-by-case basis in relation to units sold, AT&C losses, etc), review of the current year's performance and approval of the aggregate revenue requirement of the distribution licensee for the upcoming year. In reviewing the aggregate revenue requirement, the SERC takes into consideration factors such as cost of procurement of electricity (through long-term contracts or short-term procurement from the open market, in case of shortage) and, based on such review, the commission may alter the tariff mentioned in the multi-year tariff order for such distribution licensee.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The Electricity Act sets out various obligations and duties of a distribution licensee, which include the obligation to provide open access to any applicant (subject to system constraints), the duty to develop and maintain a distribution system and commence supply within one month of request in the distribution licensee's area of supply. The Supreme Court has stated in various judgments that there is no exemption from the universal service obligation of any distribution licensee under the Electricity Act and the licensee has a statutory duty to supply electricity upon application to any premises located in the distribution licensee's area. One of the key reasons for the government's decision to reform debt-ridden distribution licensees under the UDAY Scheme was to ensure that the distribution licensees are able to fulfil and perform their roles and functions under the Electricity Act effectively.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The power sector is governed by the GoI primarily through the Power Ministry and the Renewable Energy Ministry. The Department of Atomic Energy of GoI governs development of nuclear energy.

Other regulatory policies and technical and performance standards are determined by the CERC, the SERCs and the CEA.

23 Scope of authority

What is the scope of each regulator's authority?

The CERC and the SERCs exercise jurisdiction over all interstate and intrastate electricity regulatory issues respectively (except issues relating to nuclear energy, which are regulated by the Atomic Energy Regulatory Board), and are entrusted with the function of notifying regulations and acting as the independent regulators for their respective jurisdictions. Some of their key functions and responsibilities include preparing their respective grid codes, issuance of licences, determination of tariffs, adjudicating disputes and aiding and advising the government on any matter referred to them.

The Power Ministry and the Renewable Energy Ministry act as the legislating bodies and are mainly responsible for evolving general policies (including the NEP, Tariff Policy and Rural Electrification Policy) for the development of the energy sector, in consultation with the state governments and the CEA. The CEA, not a regulator in the electricity sector, primarily serves as the technical advisory body to the GoI, advising on all technical matters related to transmission, generation and distribution (including specifying technical standards for construction, and prescribing grid standards for operation and maintenance of transmission lines and safety requirements).

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The CERC and SERCs are statutory bodies under the Electricity Act, which also sets out their powers and functions. Being autonomous bodies, they perform their functions in an independent manner without any government interference. However, regulatory authorities are required to be guided by policy directions of the GoI issued under the Electricity Act. That being said, the Electricity Act Amendments propose to require the SERCs and CERC to mandatorily comply with the provisions of the Tariff Policy (as opposed to being merely guided).

The CERC was established by the central government under the Electricity Act and the Electricity Regulatory Commissions Act 1998 where members of the CERC are appointed by a committee that is appointed by the central government. Similarly, SERCs are also established by the respective state governments under the Electricity Act and the Electricity Regulatory Commissions Act 1998.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Under the Electricity Act, the CERC and SERCs (and adjudicating officers of such commissions) have the power to hold inquiries and adjudicate disputes relating to inter-state matters for the CERC and intra-state matters for the respective SERCs. Under section 79 of the Electricity Act, the CERC is empowered to adjudicate upon disputes involving generating companies, either owned or controlled by the Central Government or generating companies who have entered into a composite scheme for generation and sale of electricity in one or more states, or transmission licensees with respect to inter-state transmission of electricity and regulation of tariff. Section 86 of the Electricity Act authorises the respective SERCs to adjudicate upon disputes between licensees and generating companies. Both CERC and the SERCs also reserve the power to refer any dispute to arbitration.

APTEL has the power to entertain appeals arising out of decisions of the CERC, the SERCs or adjudicating officers, if filed within 45 days from the date of receipt of the impugned order. APTEL is also conferred with suo motu jurisdiction to examine the validity of any order made by an adjudicating officer, CERC or SERC, in relation to any proceeding. Additionally, any person aggrieved by the order of any electricity regulatory commission may approach the relevant High Court of the state for adjudicating on any question of law.

APTEL is required to decide appeals as expeditiously as possible and endeavour to dispose of the appeal within 180 days of filing of the appeal. Further, appeals against the decisions of APTEL may be filed before the Supreme Court within 60 days of receipt of such decision.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Under the Electricity Act every licensee must seek the prior approval of the relevant electricity regulatory commission, without which it cannot undertake any transaction to acquire, or merge its utility with, the utility of another licensee; or assign its licence, or transfer the whole or a part of its utility.

Additionally, the Competition Commission of India (CCI), established under the Competition Act 2002 (Competition Act) has, under the merger control provisions, the authority to block a notifiable merger or acquisition (based on specified asset or turnover thresholds) of business in the electricity sector if it is of the opinion that such merger or acquisition will have an appreciable adverse effect on competition in

the relevant market, such as the electricity sector in India. The provisions of the Competition Act are in addition to and not in derogation of other laws (such as the Electricity Act).

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The Competition Act prohibits any enterprise or person from entering into a combination (a merger or acquisition beyond specified thresholds) which causes or is likely to cause an appreciable adverse effect on competition within the relevant market in India. The Competition Act also mandates that any person or enterprise, proposing to enter into a combination to give notice to the CCI disclosing the details of the proposed combination, within 30 days of approval of the proposal or execution of any agreement for acquiring control, shares or assets, and thereafter the CCI decides whether the proposed combination causes any competition concerns. If the CCI is of the opinion that the proposed combination will not have appreciable adverse effect on competition in the relevant market in India, it approves the transaction, and if it finds that the combination may have an appreciable adverse effect on competition within the relevant market in India, prohibits the proposed combination or allows it conditionally.

For determining the appreciable adverse effect of any combination, the Competition Act sets out specific factors (such as degree of countervailing power in the market, extent of effective competition likely to sustain in a market, nature and extent of vertical integration in the market, possibility of a failing business, etc) and requires the CCI to make a decision within a period of 210 days. If no order is passed by the CCI on the proposed combination within the prescribed period, it is deemed that the proposed combination has been approved by the CCI.

While the Electricity Act does not set out any specific thresholds, the bidding documents entered into by entities in the power sector typically prescribe provisions for equity lock-in and change in control for a specified period (except for wind power procurement), which effectively block a merger or acquisition.

Other than competition law and sector-specific restrictions, provisions of the Companies Act 2013 and the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeovers) Regulations 1997 (applicable to listed companies) will also apply with respect to change in shareholding through mergers and acquisitions.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The CERC and SERCs are empowered to issue appropriate directions to a licensee or an electricity generating company if such licensee or generating company enters into any agreement or abuses its dominant position or enters into a combination that is likely to cause or causes an adverse effect on competition in the electricity sector. The CCI has the authority to inquire suo motu on information or complaints received or on a reference made by the government or statutory authorities (such as CERC and the SERCs) into anticompetitive agreements. Further, the Competition Act specifically permits any reference to be made by a statutory authority (ie, the CERC or SERC) to the CCI or vice versa, in case any decision taken by such authority would be contrary to the provisions of the Competition Act. Such provisions enable electricity regulatory authorities to make their own assessment and also consult other regulators in order to determine the validity of any anticompetitive conduct.

Furthermore, consumer forums established under the Consumer Protection Act 1986 also have the power to deal with manipulative practices or anticompetitive prices affecting end consumers. Additionally, any consumer who is aggrieved by non-redressal of his grievances by a distribution licensee may approach the ombudsman appointed by the respective SERCs. Any non-compliance of an order made by the ombudsman is typically punishable with a monetary penalty.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

While the Electricity Act does not specify any substantive standards to determine whether conduct is anticompetitive or manipulative, the Competition Act 2002 specifies certain factors on which the CCI should determine whether any entity's conduct is anticompetitive.

In order to determine if any agreement has an appreciable adverse effect on competition, the CCI considers facts such as creation of barriers to new entrants in the market; driving existing competitors out of the market; foreclosure of competition by hindering entry into the market; and accrual of benefits to consumers. Further, while determining whether an entity enjoys a dominant position (which could be abused by exclusionary practices), the CCI takes into consideration factors such as market share, size and resources of the enterprise, size and importance of the competitors, monopoly or dominant position and entry barriers including barriers such as regulatory barriers, high capital cost of entry and technical entry barriers.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

See question 28.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

It is permissible to have 100 per cent foreign direct investment (FDI) in generation (except nuclear power), transmission, distribution of electricity and power trading sectors. Up to 49 per cent foreign investment (26 per cent through FDI and 23 per cent through foreign institutional investment) in power exchanges without prior regulatory approval.

Further, while there are no special requirements or limitations on acquisitions of interest in the electricity sector by foreign companies, for competitively bid projects the standard bidding documents issued by the Power Ministry may specifically provide each distribution utility (that is procuring power) to evaluate the association of a foreign entity (with the bidder) from a national security or public interest perspective. To the extent such association is found to be detrimental to the national interest, the distribution utility has the ability to reject the associated bid.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

As per the regulatory framework applicable to the construction and operation of interconnection and transmission systems, no separate authorisations are required to construct and operate interconnectors. Transmission licensees are required to abide by the regulations framed by the CERC and the CEA with respect to the construction and operation of transmission systems and connectivity to the grid. Under the Electricity Act and associated Rules, the Chief Electrical Inspector is required to certify that any apparatus that is used for a transmission system meets the safety regulations and guidelines prescribed. Further, according to the CEA's regulations, any electrical installations and apparatus that are of a voltage exceeding 650 volts are required to be inspected and approved by the Chief Electrical Inspector to the Government. Therefore, the construction and operation of an interconnector, or any other similar apparatus, will be governed by the regulations that have been issued by the CERC and the CEA and where required, an approval must be obtained from the Chief Electrical Inspector.

Update and trends

In the past year, the government has continued to introduce a spate of reforms across the energy spectrum, backed by swift executive action, which have enthused stakeholders in a hitherto stagnating market. For instance, the UDAY scheme if implemented successfully could be a game changer as it seeks to manage the burgeoning debt of various distribution utilities and enforce stricter financial discipline with the larger aim of aligning consumer tariff with the cost of generating electricity. Additionally, the Reserve Bank of India (RBI) issued a notification last year allowing relief for projects that were stalled primarily due to the inability of existing promoters to develop projects effectively and in which the promoters' shareholding was subsequently transferred. In such situations, the RBI has decided to allow lenders to extend the date of commencement of commercial operations by up to one or two years, provided that the revised date of commencement of commercial operations falls within two years of the original date for infrastructure projects, which is expected to provide considerable relief to projects in the pipeline which have been facing delays. Additionally, an extension of a further period of two years may be availed of for those projects which are delayed due to ongoing court or arbitration proceedings and a further extension of one year for those projects that are delayed for reasons beyond the control of the promoter, other than court or arbitration proceedings. Further, where delays have been caused owing to the inadequacies of the current promoters and a change in control has taken place, the RBI may allow for an extension of the date of commencement of commercial operations, subject to the fulfillment of certain conditions such as (i) the banks should be satisfied of the need to replace the current promoters, (ii) the new promoters should own at least 51 per cent of the paid-up equity capital stake in the project and (iii) the new owners must demonstrate their commitment by bringing in substantial portions of the additional monies required to complete the project within the extended time frame.

The RBI has also fine-tuned its scheme for long-term flexible financing structuring for infrastructure projects. Based on the revised scheme, lenders are allowed to fix longer amortisation periods, say 25 years, which allow for refinancing to take place in five-year intervals. This scheme is also commonly known as the RBI 5-25 Scheme and has been introduced to provide more flexible loan restructuring options to debt-heavy power projects in the country.

The Ministry of Coal has also implemented a policy of rationalising coal linkages with the objective of saving coal transportation costs, to the tune of 45 to 60 billion rupees, by optimising the allocation of coal linkages to power projects located closer to the source of coal. The government has also sought to ease out operational difficulties in the transfer and usage of coal, most notably by introducing guidelines for change in ownership to companies that were granted coal linkages but subsequently sought to develop the project through a subsidiary, or by transferring its shareholding.

One of the major developments of the year came when the government announced the new Tariff Policy in January 2016. The announcement on exemption on payment of inter-state transmission charges and losses for solar and wind energy generators will give the sector a further boost. Additionally, fixing the solar RPO to 8 per cent by 2022 and introducing the Renewable Generation Obligation on thermal power plants have been well received in the renewables market.

One key development revolves around the Appellate Tribunal for Electricity (APTEL) decision to deny compensatory tariffs to various power producers whose power plants are lying idle, underused or facing delays on account of a change in the Indonesian coal pricing regime. In 2014, the CERC and certain SERCs found that the difficulties faced by such power producers were genuine, and sought to provide relief to these power producers, in the form of a 'compensatory tariff', to compensate for the losses suffered and additional costs incurred by them. However, APTEL in its judgment has held that the CERC does not have jurisdiction when it comes to varying or modifying tariff or granting compensatory tariff in cases where a tariff has been determined under a tariff-based competitive bidding route. APTEL, however, did state that the CERC would have the power to grant relief in the event that a force majeure or change in law were to be established. Therefore, CERC has been asked to decide if any relief can be granted on account of the force majeure, if any.

On the renewable front, the promotion of solar rooftop projects by various state governments is a discernible trend, with a number of states notifying net metering regulations and upgrading local grids to match the growth of the solar rooftop sector. The government recently launched a US$750 million subsidy scheme for rooftop solar projects that aim to provide close to 30 per cent of the capital subsidy required. Solar Energy Corporation of India (SECI), which is a central government company under the administrative control of the Renewable Energy Ministry, is in the process of concluding the award of rooftop solar projects to developers with a cumulative capacity of 750MW. In a further boost to the sector, the government is currently in talks with various multilateral funding agencies with an aim to tie up close to US$3 billion in financing for the sector.

Further, the government recently issued revised draft guidelines under section 63 of the Electricity Act, for procurement of solar power through a competitive bidding route. With an aim to make the projects under the NSM more bankable, under the revised draft guidelines the government has introduced the concepts of deemed generation payments (if the evacuation grid is unavailable for more than 175 hours in a year) and termination compensation. Termination compensation amounting to six months' generation payments is payable by the procurer and in certain cases of termination, the power procurers are required to repay the balance debt due of the project developer and take over the project. The government's decision to put forward these concepts is reassuring for the developer and lender community, which has been demanding these provisions in the PPA. However, it remains to be seen whether these provisions are included, as is when the final guidelines are notified. On the domestic manufacturing front, the sector suffered a setback earlier this year when the WTO ruled against the inclusion of certain domestic content requirements (DCR) in the tenders under the NSM. The WTO in its findings, stated that India's DCR are trade-related investment measures, thereby violating the Trade Related Investment Measures Agreement and provisions of the General Agreement on Tariffs and Trade (GATT) by providing less favourable treatment within the meaning of GATT. India has however, decided to appeal the WTO's decision before the WTO Appellate Body.

Overall, the approach of the government's policy reforms reveals a clarity of vision and a push for further investments and growth in the energy sector. The judicial authorities are also taking a serious look at irregularities and inconsistencies in government policies, which is evidenced by landmark judgments by the Supreme Court including in the coal block de-allocation cases. However, it remains to be seen if such policy reforms can translate into actual capacity addition and immediate energy security.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Currently, there is no regulatory framework in place for governing and regulating cross-border electricity supply. The Electricity Act is also silent on cross-border electricity supply. Similarly, in the absence of a regulatory framework governing cross-border electricity supply, Indian power trading companies have been supplying and procuring electricity to and from neighbouring countries including Bhutan, Bangladesh, Myanmar and Nepal by way of bilateral agreements which are generally government-to-government contracts. Additionally, some key Indian players in the power trading and power exchange verticals have approached the CERC to allow import of power through power exchanges, where the CERC has requested the Power Ministry to provide guidance on the subject. The Power Ministry, after consultation with various stakeholders, has directed the CERC to frame regulations for facilitating cross-border trading in electricity. The CERC is currently in the process of framing draft regulations which will be issued to the public and relevant stakeholders for comments. Following the process of public consultation the CERC will frame its final regulations on this issue.

In a recent development, India along with other members of the South Asian Association for Regional Cooperation (SAARC) signed the SAARC Framework Agreement for Energy Cooperation (Electricity) with the objective of enabling cross-border trade of electricity, which provides a broad framework for data updating and sharing, planning of cross-border interconnections, transmission access, etc. Additionally, media reports suggest that steps for establishing a SAARC power grid have been initiated by SAARC member countries.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Restrictions on transactions with affiliates are typically provided in licence conditions and in regulations formulated by the relevant electricity regulatory commissions. Typically, such transactions should be undertaken on an arm's-length basis and at a value that is fair and reasonable.

Additionally, the Electricity Act also allows transmission or distribution licensees to engage, with the prior approval of the relevant electricity regulatory commission, in other businesses for the optimum utilisation of their assets, if a specified proportion of revenues from such other business are used towards reducing charges for wheeling, or wheeling and transmission, as the case may be. Further, in such a case, the transmission or distribution business of the licensee must not subsidise the other business undertaking, nor be encumbered by it.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

The appropriate electricity regulatory commission is the body responsible for enforcing such restrictions. These restrictions form part of the terms of the licence, therefore the appropriate electricity regulatory commission can ensure compliance, pursuant to the powers provided under the Electricity Act, and impose sanctions, which include imposition of penalties and revocation of the licence.

TRILEGAL

Neeraj Menon **neeraj.menon@trilegal.com**
Riyaz Bhagat **riyaz.bhagat@trilegal.com**
Pranjal Bhattacharya **pranjal.bhattacharya@trilegal.com**

311 B, DLF South Court
Saket
New Delhi 110 017
India

Tel: +91 11 4163 9393
Fax: +91 11 4163 9292
www.trilegal.com

Indonesia

Arfidea Dwi Saraswati, Gabriella M C Ticoalu and Tara Priscilla Ogilvie

Arfidea Kadri Sahetapy-Engel Tisnadisastra (AKSET)

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Law No. 30 (2007) on Energy and Law No. 30 (2009) on Electricity (Electricity Law) are the main laws that govern the electricity sector in Indonesia. Their implementation is regulated under Government Regulation No. 14 (2012) on Electricity Supply Business Activity, as amended by Government Regulation No. 23 (2014) (GR 14/2012). Additional regulations are enacted at the presidential, ministerial and director general level to administer technical matters, such as the procedures to obtain licences for electricity business, sale of power, and national and transnational interconnection. Provincial governments may also issue electricity regulations in line with the Electricity Law by virtue of the laws and regulations on regional autonomy. After the enactment of Law No. 23 (2014) on Regional Government (Law 23/2014), local government authorities (those of regent and mayor) have been reassigned to the provincial governments (governors).

As electricity is deemed vital and strategic, the business of electricity is controlled by the state and held by state-owned and region-owned enterprises, the main such company being PT Perusahaan Listrik Negara (Persero) (PLN). In order to increase electricity supply, the private sector is also given the opportunity to participate in the electricity sector. The government requires that electricity be provided in sufficient amount, reliable in quality and reasonable in price or tariff for the welfare of the people and to achieve sustainable development.

At the policy level, there is a national electricity blueprint endorsed by the government, which outlines the development of the electricity supply system. The blueprint refers to the national energy policy, which is drafted by the National Energy Council and ratified by the government following consultation with parliament. The national energy policy includes policies on energy supply for national demand, priority of energy development, utilisation of national energy resources, and national energy support reserves. In 2014, a national energy policy was ratified under Government Regulation No. 79 (2014) (GR 79/2014 or National Energy Policy), setting the plan for national energy management to ensure domestic energy security and support sustainable development.

Based on GR 79/2014, the targets for electricity supply and utilisation are as follows:

- increase procurement of primary energy to 400 million tonnes of oil equivalent (MTOE) by 2025 and 1,000 MTOE by 2050;
- increase utilisation of primary energy per capita to 1.4 tonnes of oil equivalent (TOE) by 2025 and 3.2 TOE by 2050;
- increase power plant capacity supply to 115GW by 2025 and 430GW by 2050; and
- increase electricity utilisation per capita to 2,500kWh by 2025 and 7,000kWh by 2050.

Further, the national electricity supply plan is implemented through a decree issued by the Ministry of Energy and Mineral Resources (MEMR) No. 5899 dated 10 June 2016 on the National Electricity Supply Plan for the period 2016 through 2025 (known as the 2016 RUPTL). An RUPTL provides, among others, the general policy on development of electricity and electricity infrastructure, an update on annual electricity grid status, development of new and renewable energy, supply of primary energy, investment needs, analysis on long-term risks and possible mitigating actions. The 2016 RUPTL changes the electricity supply plan by expanding the power capacity in Java and Bali Islands, reducing coal use by targeting more new and renewable power plant construction and operation, and adding 45,000 kilometres to the transmission grids of across Indonesia, which mainly will be in Java and Bali Islands.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Power generation, transmission, distribution and sales may be operated in an integrated manner by one business entity within a business area determined by the government. Electricity generation, transmission, distribution, and sale for public use may be organised by business entities owned by the state and local government, as well as by the private sector under an Electricity Supply Business Licence (IUPTL).

PLN, a state-owned enterprise, is the dominant market player in the Indonesian power industry and is the primary contributor to the public supply of electricity.

Other than the above, electricity generation is also allowed for self-use, which requires an operational licence. Usually companies in Indonesian industrial zones generate electricity for self-use and sell any excess power to PLN for use on the Indonesian power grid.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Construction and operation of a power generation facility require an IUPTL issued by the relevant governmental authority: for licences under the jurisdiction of the central government, an IUPTL is now issued by the Indonesia Capital Investment Coordinating Board (BKPM) on behalf of the MEMR, while for licences under the jurisdiction of the provincial or local government, an IUPTL is issued by the provincial one-stop integrated service (PTSP) on behalf of the governor. A power purchase agreement between the IUPTL applicant and its buyer (commonly, PLN) is a prerequisite to obtaining an IUPTL.

In terms of constructing generation facilities, an IUPTL holder may subcontract the construction to a qualified construction service provider through an engineering, procurement and construction (EPC) contract. The construction service provider is bound to the provisions of Law No. 18 (1999) on Construction Services and its implementing regulations.

Prior to the commencement of construction, an IUPTL holder must secure several licences from the regional and/or provincial government, among others, a building permit (IMB), location permit and environmental licence. Compensation to any party whose assets (land, buildings or plants) are directly or indirectly affected must be settled prior to commencing construction.

Further, in accordance with MEMR Regulation No. 5 of 2014 as amended by MEMR Regulation No. 10 of 2016 on Electricity Procedures and Certification (MEMR 5/2014), prior to the operation of generation facilities, the IUPTL holder must obtain an operational

feasibility certificate (SLO) issued by an institution accredited by the MEMR and registered with the Directorate General of Electricity (DGE) subject to a physical assessment by the technical team from the institution.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Generation facilities are connected to the transmission grid subject to a power purchase agreement or a grid lease agreement in accordance with an electricity supply business plan from the transmission operator.

Before connecting to the grid, an electricity installation must satisfy safety and equipment standards determined by the MEMR by securing an SLO from an institution accredited by the DGE.

Under the 2016 RUPTL, the government has opened up the chance for interconnection between a hybrid solar PV and wind power plants with PLN's network in villages for the purpose of expanding the power grid in underserved areas and increasing the use of new and renewable energy.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The use of renewable energy sources is encouraged at the policy level through the endorsement of the National Energy Policy, which aims to achieve the best possible energy mix for power production in Indonesia. The National Energy Policy provides that by 2025 diversified energy consumption from new and renewable energy (biomass, nuclear, solar, wind, etc) should reach more than 23 per cent of total energy consumed and that the use of oil should be reduced to less than 25 per cent.

Since 2010, PLN has been provided with a fast-track programme for the development of coal-fired power plants, as well as the use of renewable energy and gas. Pursuant to MEMR Regulation No. 40 of 2014, there are 58 power plant projects and 40 transmission projects listed as fast-track Private Public Partnerships involving coal, geothermal, water and gas-fired power plants.

Further, the newly enacted Presidential Regulation No. 4 of 2016 on Development of Electrical Infrastructure (PR 4/2016) provides that for development of generation facilities using new and renewable energy, the central and/or regional government may give government support in the form of fiscal incentives, feed-in tariffs and outright subsidies. Thus far, the MEMR has issued several regulations stipulating procedures and feed-in tariffs for the purchase of electricity from renewable sources (eg, MEMR Regulation No. 19 of 2016 on Electricity Purchase by PLN from Solar Photovoltaic Power Generators (MEMR 19/2016)).

MEMR 19/2016 provides incentives for independent power producers (IPPs) by adjusting the feed-in tariff (formerly regulated in 2013) based on the location for solar PV IPPs in various regions in Indonesia, (US$0.14–US$0.25/kWh), steps for registering as an IPP developer and the quota capacity per region in Indonesia, guidance on the feasibility form and interconnection study, and a flowchart on the IPP licensing process from registration through commercial operation.

The purchase of power by PLN from geothermal, city waste-based and hydro power generators had been regulated earlier, respectively in 2009, 2011 and 2014 (geothermal) and 2015 (for city-waste and hydro generators).

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

As part of a commitment to reduce the CO_2 emissions from deforestation and forest degradation, since 2010 the government has suspended the issuance of new mining licences in areas that are specified as primary natural forest and peat land (including conservation and protected forest areas). This reduced the potential amount of coal that can be produced for coal-fired power plants in Indonesia. However, given the abundance of cheap coal in Indonesia it is arguable whether this policy will have a substantial impact on the construction and use of coal-fired power plants.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

There are currently no regulations on electricity storage. In general, the Energy and Mineral Resources Research and Development Body (LITBANG) under the MEMR is responsible for research and development in the fields of oil and gas, electricity, minerals and coal, new and renewable energy, energy conservation and sea geology. The authority of LITBANG's includes organising technical policies and implementing research and development.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Both legislation on nuclear energy and the National Energy Policy encourage and provide the opportunity to develop nuclear power plants. However, to date, Indonesia has no commercial nuclear power plants, mainly due to public resistance to nuclear power on health, safety and liability issues and the historical recognition of nuclear waste as a hazardous material. The development of nuclear power plants in Indonesia so far goes no further than for the purpose of research under the supervision of the national nuclear agency (BATAN).

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Main permit

Based on GR 14/2012, an IUPTL is required to engage in the transmission business. This may be an IUPTL specifically for transmission, or an integrated IUPTL for power generation that also permits transmission activities. In order to obtain an IUPTL, the applicant is required to submit a transmission network lease or joint use agreement with the candidate user of the transmission network in addition to other administrative and technical requirements regulated under MEMR Regulation No. 35 of 2013 as amended by MEMR Regulation No. 12 of 2016 on Electricity Business Licensing Procedures.

Issuing authority

In accordance with Law 23/2014 and MEMR Regulation No. 35 of 2014 on Delegation to BKPM of Authority in the field of Electricity for Implementation of the One Stop Service, the issuing authority of an IUPTL is now the BKPM or the provincial PTSP, based on their respective authority.

The BKPM is authorised to issue an IUPTL to entities whose business areas are cross-province, state-owned enterprises, and those who sell electricity or lease off the electricity grid to an IUPTL holder whose licence was granted by the central government. The provincial PTSP is authorised to issue an IUPTL to entities whose business areas are cross-regency and who sell electricity or lease off the electricity grid to an IUPTL holder whose licence was granted by the provincial government. Further, the provincial PTSP is now authorised to issue an IUPTL to entities whose business areas are within a regency or city and who sell electricity or lease off the electricity grid to an IUPTL holder whose licence was granted by the local government.

Other licences

In addition to the above, the IUPTL applicant must secure an IMB, location permit, and an environmental licence from the local government and must compensate any party whose assets (land, buildings, or plants) are directly or indirectly affected by the transmission network. Before commencing operation, a transmission installation must secure an SLO issued by an accredited technical inspection institution.

Please note that investment in the power transmission sector (and power distribution sector) by private entities in Indonesia is very rare to date, as power transmission (and distribution) have been historically monopolised by PLN.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Any party that provides power to the grid (including an IPP) and that holds an IUPTL may have access to the transmission or distribution grid in order to supply power to the public. Specifically for an IPP, access to the grid is subject to the PPA with PLN governing the terms of the IPP's electricity transfer to PLN's transmission grid.

Other than the above, access to the grid may also be obtained through a lease agreement between the holder of the IUPTL for transmission and the user of the grid. The fee for such lease must be approved by the MEMR or governor, according to their jurisdiction.

An IUPTL holder who produces power and owns and operates a transmission network is also eligible to access a transmission or distribution network.

Utilisation of electricity transmission or distribution networks for telecommunications, multimedia and information purposes is permissible, subject to a licence issued by the BKPM (on behalf of the MEMR), provided that such utilisation does not compromise power supply in the area.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Since 2010, the government has assigned PLN to develop electricity infrastructures to meet the target of 35,000MW power generation and 46,000km transmission grid across Indonesia, particularly with the issuance of MEMR Regulation No. 15 of 2010 on List of Fast Track Projects in Renewable Energy, Coal and Gas Power Generation and the Relevant Transmissions, as amended four times, lastly by MEMR Regulation No. 40 of 2014. Consistent with this objective, PR 4/2016 specifically provides government financial support for the development of electrical infrastructures, including transmission grids, by PLN through an independent-management scheme.

Despite the regulations allowing private sector involvement in electricity transmission, the historical monopoly on transmission by PLN is expected to continue for some time. The expansion of transmission networks by the private sector may likely take longer to realise considering that the government incentives to encourage the development of transmission networks for private entities were only just introduced in early 2016. They are, among others, in the form of delegation of land acquisition to government institutions on behalf of private entities, and an increase in foreign ownership permitted in mid-high-voltage electricity.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The tariff for leasing transmission services is regulated by the government (ie, MEMR, governor), depending on the location of the transmission network.

Transmission services may be leased through a network lease agreement between the transmission operator and another transmission operator.

The parties to a network lease agreement, through a Transmission Business Entity, may propose the price of power transmission by submitting a written application to the MEMR or governor for approval pursuant to MEMR Regulation No. 1 of 2015 on Cooperation for Electricity Supply and Joint Utilisation of Electrical Grid. The approved price or fee from the relevant authority may be in the form of a benchmark price.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The MEMR, through the DGE, is responsible for assuring the reliability of the transmission grid. An inspector from an accredited technical inspection institution will issue an SLO in connection with the installation and operation of the transmission grid.

In the event of non-compliance, the inspector may recommend suspension of the activities of the service provider, which may result in revocation of its operational licence.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

An IUPTL is the main licence needed to construct and operate distribution networks. The IUPTL can be issued specifically for distribution, or distribution can be included in an integrated IUPTL that covers generation, transmission and sales. The BKPM (on behalf of the MEMR), or the provincial PTSP, depending on the jurisdiction, is the relevant authority to issue an IUPTL.

An IUPTL for distribution requires:

- stipulation of electricity business area by the BKPM (on behalf of the MEMR);
- approval of electricity selling price or transmission lease price by the MEMR;
- approval of the applicant's electricity supply business plan; and
- a distribution network lease or joint-use agreement with the candidate user of the distribution network.

The stipulation of an electricity business area (WIUPTL) as a prerequisite to apply for an IUPTL for distribution is subject to the procedures outlined in MEMR Regulation No. 28 of 2012 as lastly amended by MEMR Regulation No. 7 of 2016 on Procedures for Application for WIUPTL for Public Interest. Note that there may only be one business entity in a given WIUPTL. A WIUPTL may only be granted if such territory is not yet reached by a business entity covering a WIUPTL or if the business entity covering a WIUPTL in such territory is not capable of meeting electricity demands. Similar to transmission, despite the regulations allowing private sector involvement in the distribution business, the historical monopoly on distribution by PLN as the holder of most WIUPTLs in Indonesia is expected to continue for some time.

Similar to the transmission sector, the distribution applicant must also obtain a building permit (IMB), location permit and an environmental licence from the local government and settle with any party whose assets (land, buildings or plants) are directly or indirectly affected by the distribution network.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Any party that provides power to the grid (including an IPP) and that holds an IUPTL may access the distribution grid in order to supply power to the public. Access to the grid must be evidenced by a lease between the holder of the IUPTL for distribution and the user of the grid. The fee for such a lease must be approved by the minister or governor.

Utilisation of electricity distribution networks for telecommunications, multimedia and information purposes is permissible, subject to a licence from the BKPM or provincial PTSP, provided that such utilisation does not compromise power supply in the area.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Similar to the transmission business, distribution is technically open to the private sector. However, in practice, even private IPPs are still relying on PLN's distribution grid to supply their power to end users.

In terms of regulator involvement, MEMR Regulation No. 4 of 2009 on Provisions on Electricity Distribution stipulates a code of conduct for the distribution business, including standard policies for distribution, connection, operation, planning and settlement. Government incentives for private sector distribution business are not currently available.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The tariff for the lease of distribution services is regulated by the government (MEMR or governor) depending on the location of the distribution network.

Distribution, as well as distribution services, may be leased through a network lease agreement between the distribution operator and another distribution operator.

The parties to the network lease agreement may propose the price of power distribution by submitting a written application to the MEMR or relevant governor. The approved fee may be in the form of a benchmark price.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Indonesia recognises two types of power sales: from one IUPTL to another IUPTL, and from an IUPTL holder to end users.

An IUPTL is required for all entities engaging in the power sales business. However, for sales from one IUPTL to another IUPTL, the purchaser must conduct a public tender, and the proposed purchase of power must conform to the electricity supply business plan approved by the MEMR. The public tender requirement does not apply, and the purchaser may directly appoint its desired party, under the following circumstances:

- where the power originates from a generator using renewable energy, marginal-gas, mine-mouth coal or other local energy;
- in connection with the purchase of excess electricity;
- in a power supply crisis or emergency; and
- expansion of power plant capacity in the same operating power station in the same area.

In the event that power sales are in the framework of diversification of energy for non-fuel power generation, then the purchaser may compare and choose from at least two bidders that have submitted proposals.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Yes. As mentioned in question 18, there are two types of power sales and, therefore, there are two types of tariff. Basically, for on-grid power sales (from one IUPTL to another IUPTL), the tariff is developed through a public tender process with the agreed price approved by the relevant authority (MEMR or the Governor). The government has provided several feed in tariffs for purchase of electricity from IPPs for certain power generators (eg, MEMR Regulation No. 3 of 2015 on Procedures for Electricity Purchase and Benchmark Price for Electricity Purchase from Mine Mouth PLTU, Coal PLTU, PLTG/PLTMG, and PLTA by PLN through direct selection and direct appointment, MEMR Regulation No. 19 of 2015 on Purchase by PLN of Electricity from PLTA with capacity up to 10MW, and MEMR 19/2016).

In Indonesia, the term 'tariff' is used in connection with the price of electricity to end users. Pursuant to GR 14/2012, tariffs for electricity sold to consumers are determined by the MEMR or governor, subject to approval by the provincial or national house of representatives. For PLN, as a state-owned enterprise whose licence is granted by the central government, the tariffs are determined by the MEMR. The prevailing tariff for PLN is stipulated from time to time and lastly under MEMR 9/2015. In such regulation, tariffs vary depending on the use of the electricity (for example, for household, business, or industrial purposes, or for wholesale) and the power of electricity (for example, 450VA).

In Indonesia, the electricity supply sector is monopolised by PLN and the electricity tariff provided by PLN is divided into two categories: a regular post-paid tariff and a prepaid tariff.

Electricity is considered a good with a strategic purpose and is therefore exempted from VAT except for in housing with capacity of more than 6,600W.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Similar to power sale tariffs mentioned in question 19, wholesale power tariffs are determined by the MEMR or governor, subject to approval from the provincial or national house of representatives, depending on where the wholesale power is generated and sold. For wholesale electricity provided by PLN pursuant to MEMR 9/2015, the threshold for wholesale electricity is electricity above 200kVA.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The underlying constitutional principle of the Electricity Law is article 33 of the 1945 Constitution of the Republic of Indonesia, which stipulates that sectors of production that are vital to the state and affect the greater livelihood of the people shall be under the power of the state. Further, the article provides that the land, waters and natural resources shall be under the powers of the state and used to the greatest benefit of the people. The core of the Electricity Law and electricity supply, therefore, is to achieve social welfare.

In accordance with the Electricity Law, electricity should be:

- supplied in sufficient amount;
- reliable in quality;
- reasonable in price and tariff;
- for the welfare of the people; and
- able to achieve sustainable development.

Further, Law No. 30 of 2007 on Energy provides that the purpose of energy development is to increase energy access for unfortunate and isolated citizens and to reduce regional disparity with respect to.

Other than the general policy objectives, there are no specific public service obligations.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

At the central government level, the highest authority is the House of Representatives, which has full authority to promulgate laws on electricity. Second is the President, who has authority to determine policies, regulations, management, and implementation of the electricity supply. The MEMR monitors and supervises the electricity sector and implements the policies, law and regulations, and maintenance of electricity supply, including but not limited to establishing technical regulations and issuing licences. Under the MEMR is the DGE, who has the authority to formulate and carry out policies and technical standards under the MEMR.

The National Energy Council is responsible for developing the National Energy Policy for the House of Representatives' approval, most recently the National Energy Policy for the period 2014–2050.

In some regions in Indonesia, the provincial (and regional) government may promote electricity development by giving support to certain types of IPP, such as mine-mouth coal-fired power plants, in the form of accelerated issuance of permits, licences, approvals and recommendations. For example, in April 2014, the Governor of Sumatera Selatan issued a letter supporting the development of mine-mouth coal-fired power plants that utilise low-rank coal (below 3,000kcal/kg) and offering to assist in the process of obtaining Location Permits and environmental licences. Such preference is not recognised by the MEMR, which gives the same treatment for every type of IPP.

23 Scope of authority

What is the scope of each regulator's authority?

The provincial and national houses of representatives reserve the right as consultation regulatory bodies for the central and provincial governments when drafting the national electricity master plan and giving approval of electricity tariffs. As for the central government, the main authorities are allocated between the MEMR and the BKPM, as follows.

MEMR

- Stipulate electricity guidelines, standards and criteria;
- set guidelines in determining consumer electricity tariffs;
- set electricity tariffs for certain consumers and electricity network leasing from IUPTL holders determined by the central government; and
- approve the sale of excess electricity from operational licence holders determined by the central government.

BKPM

- Stipulate IPP business areas;
- issue IUPTLs for cross-province IPPs;
- issue cross-province operational licences (for self-use);
- issue power support service licences;
- issue cross-border power purchase and sale licences;
- issue geothermal preliminary survey assignments;
- issue geothermal licences;
- issue geothermal support service approvals;
- issue explosives storage licences for the geothermal industry;
- issue IUPTLs for state-owned enterprises, foreign investors or foreign majority share ownership;
- issue licences for implementation of electricity networks for telecommunications, multimedia and informatics; and
- impose administrative sanctions on business entities whose licences are issued by the central government.

The DGE has the authority to stipulate implementing regulations of MEMR regulations and to supervise and monitor the electricity sector.

At the provincial level, the provincial PTSPs hold similar licensing authorities with the BKPM, but as apply within the limits of their respective jurisdictions.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The electricity sector is regulated exclusively by central and provincial governments. There is no independent regulatory authority.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

The forum to challenge or appeal a regulation or decision of a regulatory body (provincial and national houses of representatives, the MEMR or governor, and the DGE) depends on whether the decision affects public or private interests. Permits, licences and approvals affecting private interests are challenged through the administrative court based on Law No. 15 (1985) on Administrative Court, as amended. In the event a regulatory instrument affects the public interest (ie, issuance of a law or regulation), judicial review can be requested in the Constitutional Court (for laws) or Supreme Court (for regulations).

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

It is important to note that to engage in electricity business in Indonesia the investor must establish a single purpose company, which cannot engage in multiple business sectors. Therefore, merger with or acquisition of a company in another sector is not allowed.

However, it is possible for an electricity company to be acquired by a company that engages in another sector. In general, the acquisition procedures will require the company to obtain an in-principle licence for change of shareholders of the target company from the BKPM, in the event that the company is a foreign investment company or a local investor registered with the BKPM (Domestic Investment and Foreign Investment in Indonesia).

In the event that an acquiring company that holds a company engaging in the electricity sector intends to acquire another company engaging in the electricity sector (ie, a parent company of a transmission network company intends to acquire a distribution network company), it may be subject to review by the Commission for Supervision of Business Competition (KPPU), which has the authority to unwind mergers and acquisitions that lead to monopoly, anticompetitive business practices, or market concentration. Under the Electricity Law, PLN as a state-owned enterprise has been prioritised to conduct electricity business in Indonesia, including generating and providing electricity. As such, PLN is exempt from the Anti-Monopoly Law (Law No. 5 of 1999).

Besides the KPPU, under Indonesian investment regulations acquisition transactions shall always refer to the negative investment list based on Presidential Regulation No. 44 of 2016, which regulates foreign share ownership of specific sectors in Indonesia, including electricity.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Based on government Regulation No. 57 of 2010 on Merger or Consolidation of Business Entities, the KPPU's assessment is based on the resulting asset value of the company after merger or acquisition. Transactions resulting in combined assets exceeding 2.5 trillion rupiah or combined sales turnover exceeding 5 trillion rupiah are required to notify the KPPU no later than 30 days after the transaction takes effect. The KPPU will review the transaction within 90 days of receiving notification. Delay in notifying the KPPU can result in fines of 1 billion rupiah per day, up to 25 billion rupiah.

Notification to the KPPU is not required for merger or acquisition between affiliated companies.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The KPPU has the authority to investigate, review and sanction anticompetitive behaviour by companies. Because the only significant player in the electricity sector to date is PLN, and electricity tariffs are stipulated or approved by the government, anticompetition concerns have not arisen in Indonesia.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Pursuant to the Anti-Monopoly Law, there are three prohibited categories. First, the law prohibits contracts that have elements of:

- oligopoly;
- price-fixing;
- dividing territory;
- boycotting;
- cartels;
- trusts;
- oligopsony;
- vertical integration; or
- exclusive dealing.

Update and trends

The government of Indonesia updated and issued several new regulations on electricity during 2015 and 2016. Under the presidency of Joko Widodo, the government has expressed a commitment to develop 35,000MW power generation facilities and 46,000km transmission grid across Indonesia in the next five years. As much as 10,000MW will be executed by PLN, while the other 25,000MW will be coordinated by PLN together with IPPs. To facilitate price negotiations between PLN and IPPs, the MEMR has regulated procedures and standard prices for power purchase from mine-mouth, coal, gas, hydro power plants and others.

In order to implement the above objectives, the government enacted PR 4/2016, which elaborates measures and incentives to accelerate the development of electricity infrastructures. One of the highlights of PR 4/2016 is the government guarantee for PLN's financial obligations under PPAs in which PLN contracts with IPPs for electricity infrastructure that requires high funding, high risk, high fuel supply, and uses new and renewable energy to operate the power generator.

The current policies of the government show their eagerness to promote the development of new and renewable energy by giving special incentives in the form of fiscal incentives, feed-in tariffs and subsidies as provided in PR 4/2016. Several regulations on feed-in tariffs for new and renewable energy such as MEMR 19/2015 for hydropower, MEMR 19/2016 for solar photovoltaic and MEMR 21/2016 for biogas and biomass have also been enacted in accordance with the mandate.

Finally, the scheme of power wheeling is relatively new in Indonesia and recently developed by the government as a response to PLN's inability to cope with the high demand for electricity. MEMR Regulation 1/2015 concerning Electricity Supply Cooperation and Joint Utilisation of the Electricity Network provides requirements for electricity supply cooperation, joint utilisation of the transmission and distribution network, electricity network interconnection and purchase of excess power. Under this scheme, a company can develop a power plant in a specific area and then use the transmission network operated by PLN to supply an industrial area. Under the model, the private company must pay a transmission network-leasing fee to PLN.

Second, the law prohibits activities that lead to monopoly, monopsony, market dominance, and conspiracy. The difference between prohibition of contracts and activities is the scope of the prohibition. The prohibition of contracts only applies to arrangements between two or more business entities, while the prohibition of activities could apply to a single business entity.

The third category involves prohibition of the abuse of a market dominant position. The abuse of market dominance provisions of the Anti-Monopoly Law focus on regulating interlocking directorates, share ownership, and mergers, acquisitions and dissolutions.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The KPPU has the authority to preclude or remedy anticompetitive or manipulative practices by:

- appraising contracts and activities that may cause anticompetitive practices;
- giving suggestions and recommendations related to anticompetitive practices;
- investigating cases that may cause anticompetitive practices; and
- imposing administrative sanctions on business entities that violate the Anti-Monopoly Law including:
  - cancelling an agreement that causes anticompetitive practices;
  - ordering the entrepreneur to stop anticompetitive activities;
  - cancelling a merger, acquisition, or dissolution;
  - determining compensation; and
  - issuing fines up to 25 billion rupiah.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

The current negative investment list provides some limitations on foreign ownership in the electricity sector. Power generation under 1MW is closed to foreign investors. Generation from 1MW to 10MW may be conducted through a partnership with local entities in which foreign investors are limited to 49 per cent share ownership (67 per cent for geothermal), while, for electricity generation above 10MW, electricity transmission, and distribution, the foreign investor may hold up to 95 per cent, or 100 per cent in the context of public–private partnership during the concession period. EPC and operation and maintenance are open for up to 95 per cent foreign share ownership.

The negative investment list now also allows up to 49 per cent foreign investment for construction and installation of mid and high-voltage electricity facilities, which formerly was restricted to domestic investment. For producers of biomass pellet, foreign investors may own 100 per cent shares with no further requirement for entering into a joint venture or partnership with a local company.

The above foreign ownership limitations only apply for related companies operating in special economic zones.

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Arfidea Dwi Saraswati **asaraswati@aksetlaw.com**
Gabriella M C Ticoalu **gticoalu@aksetlaw.com**
Tara Priscilla Ogilvie **togilvie@aksetlaw.com**

The Plaza Office Tower, 29th Floor
Jl MH Thamrin Kav 28-30
Jakarta 10350
Indonesia

Tel: +62 21 2992 1515
Fax: +62 21 2992 1516
www.aksetlaw.com

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

The Electricity Law recognises transmission and distribution grids as the only form of interconnectors. The transmission and distribution business is subject to IUPTL as the main operating licence. A WIUPTL must be secured prior to the IUPTL application. As previously explained, there may only be one business entity in a WIUPTL.

The applicant must also secure an IMB, location permit, and an environmental licence from the local government and must compensate any party whose assets (land, buildings or plants) are directly or indirectly affected by the transmission or distribution network. Furthermore, in accordance with MEMR Reg 5/2014, a transmission or distribution installation must secure an SLO before being allowed to operate.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Cross-border electricity supply through sale and purchase may be conducted by an IUPTL holder with an additional licence from the BKPM, including cross-border interconnection or joint use of network licence. Cross-border electricity sales may be conducted on the condition that:

- the domestic electricity demand has been fulfilled;
- the sale price of the electricity is not subsidised; and
- the cross-border electricity sale must not interfere with the quality and reliability of domestic supply.

Cross-border electricity purchases may be conducted if:

- domestic electricity demand has not yet been fulfilled;
- the purchase supports fulfilment of domestic demand;
- the purchase does not harm the interest of the state;
- the purchase improves the quality and reliability of the domestic supply;
- the purchase does not create dependency on foreign sources; and
- the purchase does not neglect the development of domestic electricity supply capacity.

The price of cross-border electricity must be related to the economic value of the electricity and must be approved by the MEMR.

Cross-border electricity sale and purchase activities are also subject to customs regulations. There is no tariff for cross-border electricity interconnection in Indonesia.

Further study of extra high voltage cross-border interconnection between Indonesian and Malaysia through Sumatera and Borneo grids is still progressing. Indonesia is in the process of amending its regulation regarding the cross-border interconnection. Among others, to update the Presidential Regulation No. 77 of 2008 on Ratification of Memorandum of Understanding on the ASEAN Power Grid, and Government Regulation No. 42 of 2012 on Cross-Border Power Purchase.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

To date, there are no rules that restrict transactions between an entity carrying out electricity supply business and its affiliates, although in general, affiliated transactions are required to follow the arm's-length principle and arm's-length pricing documentation should be maintained.

State-owned enterprises are allowed to directly appoint their affiliates for goods and services procurement under certain conditions, as long as the arm's-length principle is also met.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

Affiliated transactions are subject to scrutiny by the Directorate General of Taxation, which has an aggressive transfer pricing unit. Sanctions for improper transfer pricing involve stiff penalties.

Japan

Nagahide Sato and Sadayuki Matsudaira
Nishimura & Asahi

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

The electricity sector in Japan is governed by the Electricity Business Act (EBA).

Prior to 1995, the EBA allowed 10 general electricity utilities to basically dominate all of the generation, transmission, distribution and sale of power. Although the industry, especially generation and sale of power to high-voltage consumers, had been partially liberalised since 1995, it was not until the Fukushima nuclear disaster in March 2011 that the Japanese government began to seriously reform the electricity market.

The regulations on the electricity business by the EBA are being significantly amended by three steps: the first in April 2015, the second in April 2016 and the third in April 2020.

The Organisation for Cross-regional Coordination of Transmission Operators (OCCTO) was established by the first-step amendment. This organisation is expected to facilitate nationwide efficient grid establishment and operations.

The second-step amendment liberalised the sale of power to low-voltage consumers (those with contracts for electricity consumption of less than 50kW; eg, ordinary households), which has been dominated by general electricity utilities, and all electricity retail companies registered with the Minister of Economy, Trade and Industry (Minister of ETI) are generally able to provide electricity to any consumers at discretionary terms and conditions. Regulations on the wholesale of electricity were also fully abolished.

By the third-step amendment, a company that engages in general transmission business (which provides wheeling services through its grids) will no longer be permitted to engage in retail or power generation, and the general transmission utility will have to be a separate legal entity from the generation or retail business company.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

With effect from 1 April 2016, the regulations on generation, transmission, distribution and sale of power were substantially amended.

Until the effective date, 10 general electricity utilities had dominated transmission, distribution and sale of power to low-voltage consumers (those with contracts for electricity consumption of less than 50kW; eg, ordinary households) in each supply area, and wholesale supply conditions to general electricity utilities had been regulated by the EBA. On the effective date, a licence system was introduced, under which:

- filing with the Minister of ETI is generally required for power generation (of which output exceeds certain thresholds);
- approval from the Minister of ETI is generally required for transmission and distribution; and
- registration with the Minister of ETI is required for electricity retail business.

The concept of 'general electricity utility' disappeared, and former general electricity utilities became companies which own several licences. In 2020, these companies will be required to split transmission and distribution business from power generation and retail business.

Generation and wholesale

Until the effective date, there had been three categories:

- wholesale electricity utility: an entity that supplies electricity to a general electricity utility, and that has an electricity generation capacity of more than 2 million kW, and are required to obtain a licence from the Minister of ETI;
- wholesale supplier; a supplier of electricity to a general electricity utility of more than 100,000kW for five years or more, or more than 1,000kW for 10 years or more, and conditions of its supply of electricity to a general electricity utility must comply with the EBA; and
- other power producers which are not regulated by the EBA.

With effect from 1 April 2016, all power producers are required to make certain filings with the Minister of ETI before engaging in the power generation business, unless such power producer satisfies certain requirements (such as total power producing ability of facilities owned by a producer being lower than 10,000kW), which are provided by rules of the Ministry of ETI. In April 2016, wholesale regulation was abolished, and wholesale entities are generally able to supply electricity at terms and conditions determined at their discretion, while the guideline provided by the Ministry of ETI provides that the former general electricity utilities should hold a bidding process when they are to construct or replace certain thermal power plants by themselves, based on the fact that they are obligated to supply electricity to low-voltage consumers at regulated prices at least until 2020 (see question 19).

Since July 2012, suppliers of electricity generated from certain renewable energy sources are entitled to sell the electricity to an electricity utility at a fixed price for a fixed period under feed-in tariff (FIT) regulations (see question 5).

Transmission and distribution

For operating the business of providing wheeling services through its own transmission and distribution lines throughout each service area, it is necessary to obtain approval of the Minister of ETI, and only 10 general transmission utilities (the former general electricity utilities before April 2016) are allowed to engage in that business in each service area. Other companies that provide wheeling services through their own lines in a specific area must make a filing with the Minister of ETI.

Sale of power

Until March 2016, the retail market for low-voltage consumers had not been liberalised, and 10 local general electricity utilities had been allowed to dominate the market in their respective service areas.

In April 2016, the retail market was fully liberalised, and all entities that are registered as electricity retailers are permitted to provide electricity to low-voltage consumers as well. As of August 2016, over 300 entities are registered as electricity retailers.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Starting in April 1 2016, all power producers are required to make certain filings with the Minister of ETI before engaging in the power generation business, unless such power producer satisfies certain requirements (such as total power producing ability of facilities owned by a producer being lower than 10,000kW), which are provided by rules of the Ministry of ETI.

For the construction of a power plant, prior filing of the construction plan with the Minister of ETI is generally required, unless the output of such power plant is below certain thresholds. With respect to the construction and operation of nuclear plants, the EBA requires approval of the construction plan before construction and the inspection of construction before operation by the Nuclear Regulation Authority and the Minister of ETI. In addition, installation of a nuclear power reactor requires the approval of the Nuclear Regulation Authority.

In addition, construction of a thermal power plant, a hydropower plant, a wind power plant or a geothermal plant (whose generating power exceeds certain thresholds) or a nuclear plant requires prior environmental impact assessments.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

A general transmission utility (a general electricity utility until March 2016) must allow connection of generation to the grid and provide a wheeling service, unless there are justifiable grounds to refuse it. Examples of justifiable grounds include the non-payment of service fees by the applicant and the inability of the general transmission utility to provide the service without new construction of transmission facilities that impose a heavy burden on the business operation of the general transmission utility.

A general transmission utility must allow an entity that intends to supply electricity generated from renewable energy sources to connect with its transmission facilities, unless there are justifiable grounds for refusal. Justifiable grounds include scenarios in which the supplier of electricity generated from renewable energy sources fails to pay the costs necessary for the connection, the connection is likely to hinder the stable supply of electricity by the general transmission utility or the supplier does not agree to certain provisions required by the Ministry of ETI rules in the connection agreement, such as permitting certain curtailment without compensation to the supplier instructed by a general transmission utility.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

In July 2012, a feed-in tariff (FIT) for electricity generated from certain renewable energy sources (renewable energy electricity) was introduced. Under FIT, an electricity utility (ie, an electricity retailer or a transmission utility) must purchase renewable energy electricity from the producer (which obtained certification from the Ministry of ETI for the facility) at a fixed price for a fixed period, and transmission utilities must allow the producer to connect with their transmission facilities. Solar PV, wind, small and medium-sized hydro, geothermal and biomass are the renewable energy sources eligible for FIT.

The purchase prices and periods differ depending on the type of renewable energy and the scale of the plant and are decided by public notice issued by the Minister of ETI, who takes into consideration the opinion of the Calculation Committee of Purchase Price. The purchase prices and periods are renewed every year, and the set price and period applies to a project as of the later of the date on which the electricity utility receives the application for an connection agreement and the date on which the power generation facility is certified as satisfying all the requirements under FIT. From April 2016 to March 2017, the price is between ¥13 and ¥55 (excluding sales tax) and the period is between 10 and 20 years depending on the type of renewable energy and the scale of the generating power.

Starting in April 2017, an entity that is obligated to purchase electricity under the FIT will be limited to transmission utilities. As most of projects since the introduction of FIT in 2012 were solar PV projects, a public bidding system for mega-solar projects will be introduced to control the entire volume of electricity output from such solar projects. In addition, in order to enjoy the FIT, power producers will be required to obtain certification for a project plan rather than for a facility, by proving the likelihood of starting the operation within a reasonable period.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

FIT, which was introduced in July 2012, has facilitated and will facilitate a substantial number of new companies to enter the electricity generation market and is expected to increase the amount of electricity produced by solar PV, wind, small and medium-sized hydro, geothermal and biomass sources. From April 2012 to April 2016, total capacity expanded by approximately 29.5 million kW from new renewable power plants (approximately 28.3 million kW of such additional capacity comes from solar power plants).

The costs of FIT will be ultimately borne by electricity consumers as a surcharge, but is arranged so that the costs are spread equally throughout Japan by the Surcharge Adjustment Organisation.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Yes. There are subsidy programs to support the introduction of electricity storage batteries, some of them are for households and others are for business enterprises. Many of these programmes are managed by the Sustainable Open Innovation Initiative. The scope and amount of subsidy programmes change year to year. In 2016, there is a subsidy program to provide a maximum of one-third (for large companies) or half (for small or medium-sized companies) of the costs to introduce a storage battery system accompanying PV solar projects.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The Japanese government positioned nuclear power as an important base-load electricity in the Fundamental Energy Plan promulgated in April 2014, and tries to develop an environment that is supportive to electricity utilities restarting existing nuclear plants (all of which stopped operations after the Fukushima accident, and a few of them have restarted operations as at 1 September 2016) once the utilities obtain the approval of the Nuclear Regulation Authority. The Minister of ETI plans to develop a favourable environment for nuclear power plants. However, for political reasons after the Fukushima accident, it is difficult to construct new nuclear plants.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

An entity that intends to construct transmission facilities for high voltages (170,000 volts or more) must file its plan of construction with the Minister of ETI.

An entity that engages in construction and operation of transmission networks to supply electricity for consumers must obtain a licence as a general transmission business. Ten general transmission utilities (former transmission departments of general electricity utilities) dominantly own the licences and transmission lines in each of their service

areas. The transmission utility which provides wheeling services for general transmission utilities (J-Power) is also required to obtain a license from the Minister of ETI. Other entities which provide electricity to their customers by their own transmission and distribution lines are required to make certain filings with the Minister of ETI.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

See question 4.

All electricity retail companies registered with the Minister of ETI are eligible to obtain transmission services (ie, wheeling services) from general transmission utility, in accordance with the tariff that the general transmission utility has obtained approval from the Minister of ETI, unless there are justifiable grounds for refusal.

An entity that intends to supply renewable energy electricity is also eligible to connect with and obtain transmission services from an electricity utility's facilities. In order to be eligible, the power generated must be from solar PV, wind, small and medium-sized hydro, geothermal or biomass sources, and the power generation facility must be certified by the Minister of ETI as satisfying certain requirements, such as:

- being capable of reliably and efficiently generating electricity for a guaranteed period of time; and
- being capable of transparently and fairly measuring the amount of the electricity produced from renewable energy sources that is supplied to the electricity utility.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The cost-plus-margin wheeling service fee under the EBA, by which the costs for the expansion of the transmission grid are finally borne by consumers through such wheeling service fees paid by electricity retailers, enables general transmission utilities to expand the transmission grid. In addition, bondholders of a corporation acting as a general transmission utility have priority over other creditors in the right to receive payments from claims on the corporation's property, which enables general transmission utilities to obtain the financing necessary for expanding power generation and transmission facilities at lower interest rates on corporate bonds. From 2025, it will be no longer be possible to issue bonds with such preferential treatment for bondholders.

In April 2015 the OCCTO was established and it prepares development plans for nationwide transmission lines and strengthens the capacity to transmit electricity beyond each of the service areas of the 10 general transmission utilities.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

A general transmission utility must formulate a wheeling service tariff that sets rates and other supply conditions for the wheeling service and obtain approval on the tariff from the Minister of ETI.

The tariff must satisfy certain requirements including the following:

- the tariff will not harm the interests of recipients of electricity supply;
- the recipients of electricity supply under the wheeling service tariff will not experience any difficulty in receiving the wheeling service;
- the rates shall be calculated based on cost plus appropriate profit in accordance with the rule set by the Ministry of ETI, and the rates are clearly set as fixed rates or fixed amounts; and
- nobody will be treated in an unfair and discriminatory manner.

If the Minister of ETI finds that the wheeling service tariff fails to satisfy the requirements above, they may order the general transmission utility to revise the wheeling service tariff.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

In Japan, general transmission utilities own and operate transmission facilities, and they themselves are responsible for assuring the reliability of the transmission grid. The OCCTO plans and monitors a nationwide transmission network beyond each regional transmission area owned and operated by a general transmission utility.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

An entity that intends to construct distribution facilities for 50,000 volts or more must file its construction plan for the distribution facilities with the Minister of ETI.

Any entities that supply electricity to their customers by their own distribution lines (other than general transmission utilities (ie, transmission departments of former general electricity utilities) and the transmission utility (ie, the transmission department of the former wholesale electricity utilities) that have licence from the Minister of ETI) are required to make certain filings with the Minister of ETI.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

See question 10.

Any electricity retail companies that are registered at the Minister of ETI have access to the distribution grid. They are required to become a member of the OCCTO beforehand.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

The general transmission utilities are obligated to ensure electricity supply to all consumers in their service areas. In order to perform this obligation, general transmission utilities expand the distribution network as long as it is necessary to supply electricity to consumers. The wheeling service fee is determined based on the cost-plus-margin concept, and the costs for the expansion are finally borne by consumers through the payment of a wheeling fee by electricity retailers.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

See question 12.

A general transmission utility must determine a wheeling service tariff that sets rates and other supply conditions for the wheeling service (including distribution services) and must obtain approval on the tariff from the Minister of ETI.

The tariff must satisfy certain requirements including the following:

- the tariff will not harm the interests of recipients of electricity supply;
- the recipients of electricity supply under the wheeling service tariff will not experience any difficulty in receiving the wheeling service;
- the rates shall be calculated based on cost plus appropriate profit in accordance with the rule set by the Ministry of ETI, and the rates are clearly set as fixed rates or fixed amounts; and
- nobody will be treated in an unfair and discriminatory manner.

If the Minister of ETI finds that the wheeling service tariff fails to satisfy the requirements above, he or she may order the general transmission utility to revise the wheeling service tariff.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

See question 2.

In April 2016 the retail business was fully liberalised, and all entities are allowed to be engage in the retail electricity business including supplying electricity to low-voltage consumers, by registering as electricity retailers; to obtain the registration, an entity must prove its capacity to provide sufficient electricity to meet the demand of its customers.

An entity without registration as an electricity retailer is allowed to supply electricity after obtaining approval on 'specified supply' from the Minister of ETI to a recipient with which it is closely associated (such as a subsidiary).

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Yes. Even after full liberalisation of the retail market in April 2016, regarding electricity supply to low-voltage consumers (consumers with contracts for electricity consumption of less than 50kW), electricity retail companies (which were former general electricity utilities) must provide a power sales tariff and obtain approval for it from the Minister of ETI, and must supply electricity to low-voltage consumers in accordance with the tariff as long as such consumers desire. This treatment will continue until 2020 or later when the Ministry of ETI decides on an area-by-area basis (area means a service area of each general transmission utility) that sufficient competition exists in a certain supply area.

From April 2016, all retail companies are legally required to explain retail prices and other conditions in writing to their customers before entering into supply agreements.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Both wholesale electricity utilities and wholesale suppliers have had to provide rates and other conditions of their wholesale supply and file them with the Minister of ETI. The price must be based on costs, except when the wholesale supply is provided under the conditions set by a successful bidder in a bidding process implemented by a general electricity utility. After the wholesale regulation was abolished in April 2016, all power generators are generally able to sell electricity at their discretionary conditions, even when they engage in electricity supply to the former general electricity utilities. On the other hand, to the extent that there is still a regulation requiring the former general electricity utilities to provide electricity at regulated prices to low-voltage consumers who desire it, these utilities are required to hold a bidding process when they are to construct or replace certain thermal power plants by themselves.

The Ministry of ETI would like to increase the volume of electricity traded on the electricity wholesale exchange (JEPX), so that power generators and electricity retailers can sell/purchase electricity with more flexibility and can hedge their risks through market trading, including derivatives. Prohibitions against insider trading and manipulation in the electricity wholesale market and relevant rules were introduced in April 2016.

The rates and terms of supply of renewable energy electricity are provided, depending on the kind of energy and the scale of the facility, by public notice issued by the Minister of ETI, taking into consideration the opinion of the Calculation Committee of Purchase Price. The Minister of ETI considers costs that are ordinarily necessary for supply and appropriate profits when they decide the price and the time period. See question 5.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Ten general transmission utilities (or, at least until 2020, for supply to low-voltage consumers, retail companies which were former general electricity utilities) are responsible for meeting certain public service obligations (to supply electricity at regulated conditions when certain end users cannot receive such service from any retail companies).

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The Ministry of ETI (including the Agency for Natural Resources and Energy, an affiliated agency of the Ministry of ETI, and the Advisory Committee for Natural Resources and Energy, a part of the Agency for Natural Resources and Energy) determines regulatory policy with respect to the electricity sector.

Since September 2015, the Electricity and Gas Market Surveillance Commission monitors and supervises whether electricity companies comply with the EBA.

The Nuclear Regulation Authority, which is an affiliated agency of the Ministry of the Environment, has the authority to supervise nuclear power plants.

23 Scope of authority

What is the scope of each regulator's authority?

The Ministry of ETI has the authority to:

- issue licences to electricity utilities;
- order general transmission utilities to improve their operations;
- require an electricity utility to supply electricity to a general electricity utility, specified electricity utility or specified-scale electricity utility in the event of a disaster or other emergency;
- order a general transmission utility to provide a wheeling service;
- determine the purchase price and the contract period for renewable energy electricity; and
- warn and order an electricity utility to enter into a purchase agreement or an interconnection agreement with a renewable energy electricity producer.

The Electricity and Gas Market Surveillance Commission has the authority to:

- issue a warning against electricity companies to comply with the EBA; and
- recommend that the Minister of ETI should issue orders against electricity companies.

The Nuclear Regulation Authority has the authority to:

- approve the installation of a nuclear power reactor; and
- inspect nuclear plants periodically.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Ministry of ETI is one of the ministries of the Japanese government. Staff members of the Ministry of ETI are public officials who are not allowed to have another job while serving in the ministry in order to maintain independence from the regulated business.

The Electricity and Gas Market Surveillance Commission was established in September 2015. Its role is to supervise and monitor whether electricity companies comply with the EBA. The commission is independent from the Agency for Natural Resources and Energy.

The Nuclear Regulation Authority was established in 2012 after the Fukushima accident as an affiliated agency of the Ministry of the Environment. To achieve the nuclear regulatory authority's independence from the owners and operators of nuclear plants, staff members of the Nuclear Regulatory Agency, the administrative agency of the authority, are discouraged from moving to other governmental departments that may promote nuclear plants and also from being hired by owners or operators of nuclear plants even after retirement from the agency.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

All decisions and orders of the Minister of ETI can be challenged by an administrative appeal at the Ministry of ETI or by a lawsuit at a judicial court. Valid grounds for a challenge include the claim that the content or the procedures of a certain decision or order violates the EBA or other laws.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Mergers and demergers involving a corporation acting as a general transmission utility that result in the takeover of an entire transmission business are not effective unless approved by the Minister of ETI. In addition, an assignment and acceptance of the entirety of a transmission business is not effective unless approved by the Minister of ETI. Transfers of shares of an electricity utility and acquisitions of a part of a utility's assets are not subject to the approval of the Minister of ETI. Power generators and electricity retailers must make a filing without delay when they engage in mergers, demergers or business transfers which result in the transfer of the entire power generating business or electricity retail business.

For mergers, stock acquisitions and business acquisitions that meet certain thresholds, the parties involved must file a pre-merger notification or a pre-acquisition notification with the Fair Trade Commission, and the transaction cannot be completed until 30 days have passed from the date that the commission accepted the notification. If the commission believes that the transaction will substantially restrain competition in a particular market, it can order the entity concerned to dispose of all or a part of its stock, to transfer a part of its business, or to take any other measure necessary to remedy the situation.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

When the Minister of ETI examines the application for a merger or acquisition of general transmission utilities, he or she considers the same items considered when granting a licence to a new applicant, such as whether the successor has sufficient financial resources and the technical capability to operate the electricity business properly. The general consideration period for the approval is eight weeks after the application is received, although it is expected to consult with the Ministry of ETI beforehand.

On the other hand, the Fair Trade Commission considers whether the transaction will affect competition in the electricity market. The commission is generally expected to decide whether it approves the transaction within 30 days after it receives the filing. If the commission cannot decide within that period, it may extend the consideration period to the final date of 120 days that has passed since it received the filing and the final date of 90 days that has passed since it received any additional reports the commission ordered the applying party to submit.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The Minister of ETI has the authority to order a general transmission utility to provide wheeling services to electricity retail companies. If a general transmission utility takes advantage of its dominant position in the transmission and distribution market and refuses to provide wheeling services to an electricity retail company outside the utility's group, the minister can order the general transmission utility to provide the wheeling service.

The Fair Trade Commission has the power to prevent anticompetitive or manipulative practices in the electricity sector as well. The commission can issue a cease-and-desist order or an order for payment of a surcharge, if it decides that an electricity company is engaging in anticompetitive practices that violate provisions of the Anti-Monopoly Act.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

The Minister of ETI uses the following standards:

- when deciding whether to approve the tariff of a general transmission utility, the minister considers whether:
  - the rates reflect fair costs incurred as a result of efficient management and fair profits;
  - the rates are clearly set as fixed rates or fixed amounts by type of supply; and
  - certain persons are not treated in an unfair and discriminatory manner; and
- when deciding whether to order a general transmission utility to provide wheeling services, the minister considers whether there are justifiable grounds for refusing the service, such as non-payment of wheeling service fees.

The Fair Trade Commission together with the Ministry of ETI provides guidelines for what constitutes appropriate electricity sales. (The latest amendments to the guidelines were made in 2016.) The guidelines provide that the following behaviours engaged in by a former general electricity utility may violate the Anti-Monopoly Act:

- behaviour that hinders the business of a newcomer in the retail market; such as:
  - offering substantially lower rates to consumers who may enter into an agreement with a newcomer, or who purchase the combined sale of electricity and other goods or services from the former general electricity utility;
  - offering higher rates to consumers who intend to purchase electricity both from the general electricity utility and a newcomer;
  - offering higher rates to consumers who have purchased electricity from a newcomer; and
  - prohibiting a partner of a business alliance for the combined sale of electricity and other goods or services from entering into another business alliance with a third-party electricity retailer, or making such partner commit to a most-favoured-nation treatment for the combined sale with the former general electricity utility; and
- behaviour that hinders the business of a newcomer in the wholesale market (such as an independent power producer), such as:
  - offering a purchase price much higher than the market value for an electricity generation facility that a newcomer in the wholesale market intends to purchase; and
  - refusing to provide continuous back-up services to a newcomer in the wholesale market.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The Minister of ETI has the authority to do the following:

- order a general transmission utility to stop using or providing another person with information concerning electricity suppliers and users, which the general transmission utility has obtained in the course of providing wheeling services, for purposes other than for the provision of wheeling services;
- order a general transmission utility to stop treating any particular electricity retailer in an unreasonably preferential or disadvantageous manner or giving any other benefits or causing any other hindrances to such an electricity retailer in the course of providing a wheeling service; and

Update and trends

The amendment to the FIT will become effective in April 2017. After the amendment, in order to enjoy the FIT purchase price, an entity will need to obtain a certificate for the project plan rather than for the facility, and the entity will need to prove the likelihood of starting the business, which was not required before the amendment. To control the entire amount of electricity output from mega-solar projects, new mega-solar projects will be required to pass a bidding process, in order to enjoy the FIT system. After the amendment, electricity retailers will not be required to purchase the electricity under the FIT system, and only transmission utilities will be required to do so. The electricity purchased by transmission utilities will be generally sold on the electricity wholesale market.

The government expects that the electricity wholesale market will develop. The Tokyo Commodity Exchange has started to prepare to list the electricity derivatives. The Electricity and Gas Market Surveillance Commission will carefully monitor the development of competition in the electricity wholesale market in addition to the retail market. The government also expects the development of the capacity market, and will prepare and improve relevant rules. The government also expects the development of a negawatt trading business, and will prepare guidelines for its development.

The government is considering the possibility of amending the wheeling service cost charging framework, by which the costs will be imposed not only on electricity retailers but also on power generators, and collecting the fixed costs of the wheeling system more from the base rate rather than the metre rate, to make cost collection more stable in the future in a society where distributed power generation is evolving.

- order a general transmission utility to amend its wheeling service provisions, if it sets unreasonably high rates for imbalance services without an appropriate cost basis, or if it sets unreasonable rates for imbalance services that vary depending on season or time.

The Fair Trade Commission has the authority to do the following, if it decides that certain behaviour of a general electricity utility violates the Anti-Monopoly Act:

- issue a cease-and-desist order;
- issue an order for payment of a surcharge; and
- file a formal notification with the prosecutor general.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

When a foreign company intends to obtain a share of a non-listed company or 10 per cent or more of issued shares of a listed company operating in the Japanese electricity sector, the company must report the business purpose, amount and timing, among other items, of the investment to the Minister of Finance and the Minister of ETI beforehand. When examining the report, these ministers take into consideration whether the investment by the foreign company may impair Japanese national security, disturb the maintenance of public order, obstruct the protection of public safety, or have a significant adverse impact on the effective management of the Japanese economy. Although the period for the examination of the report is generally set at 30 days, the ministers may extend the period for up to five months.

In 2008, when the Children's Investment Fund Management Ltd (the TCI Fund), a UK-based activist fund, tried to obtain up to 20 per cent of the shares of J-Power, a wholesale electricity utility, the Minister of Finance and the Minister of ETI decided not to allow the investment. The primary reason for the decision was that the TCI Fund had made certain shareholder requests with respect to the management of J-Power, which was planning to construct a new type of nuclear plant, and the ministers were concerned that the activist nature of the investment would affect Japan's policy regarding the stable supply of electricity, atomic power and the nuclear fuel cycle.

Acquisitions of interests in renewable power generation by foreign companies are active since the introduction of the FIT in 2012, because the ministers generally do not become involved in such acquisitions.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

There are 10 divided areas of electricity transmission lines in Japan, each of which is owned and operated by a regional transmission utility. These areas are interconnected with the neighbouring areas through interconnection lines between these areas. Authorisations required to construct and operate these interconnection lines are basically the same as those required for transmission lines. See question 9. General transmission utilities have constructed and operated these interconnection lines. As the volume of electricity that can pass through these lines is limited, the OCCTO is in the process of discussing how to strengthen the interconnection lines and how to share the costs fairly between the relevant business players.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Regarding access to the interconnection lines between the neighbouring transmission areas in Japan, the first come first served rule applies. The OCCTO is in the process of discussing amending the rule to facilitate wholesale electricity trading beyond each transmission areas and

NISHIMURA&ASAHI

Nagahide Sato **n_sato@jurists.co.jp**
Sadayuki Matsudaira **s_matsudaira@jurists.co.jp**

Otemon Tower
1-1-2 Otemachi
Chiyoda-ku
Tokyo 100-8124
Japan

Tel: +81 3 6250 6200
Fax: +81 3 6250 7200
www.jurists.co.jp

share the interconnection capacity fairly between the relevant business players.

Because Japan is an isolated island country, cross-border electricity supply does not exist at this stage and there are no rules relating to it.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Under the EBA, general transmission utilities are prohibited from giving preferential treatment or conferring other benefits to their affiliates when they provide wheeling services. General transmission utilities are also prohibited from providing affiliates with information concerning other electricity suppliers and electricity users that they have gathered in the course of providing wheeling services, for purposes other than the provision of the wheeling service.

If a general transmission utility gives preferential treatment to its affiliates, such as charging its affiliates rates unreasonably lower than those provided in the tariff, it will also be deemed to be in violation of the Anti-Monopoly Act, which prohibits discriminatory consideration.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

If, in the course of providing a wheeling service, a general transmission utility gives unreasonable preferential treatment or benefits to its affiliates or if a general transmission utility provides its affiliates with information concerning other electricity suppliers or consumers that it has gathered in the course of providing wheeling services, the Minister of ETI may order the general transmission utility to discontinue or correct such behaviour. If the utility violates the order, the utility is subject to a fine of up to ¥3 million. The Minister of ETI also has the authority to cancel the utility's licence if the utility has violated the EBA or any order issued under the EBA, and he or she finds such violation to be harmful to the public interest.

If a general transmission utility company gives preferential treatment to its affiliates, such as charging its affiliates a rate that is unreasonably lower than those provided in the tariff, the Fair Trade Commission may issue a warning, cease-and-desist order or an order for payment of a surcharge.

Korea

Joonki Yi and Chin Pyo Park
Bae, Kim & Lee LLC

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Legislative framework

The Electricity Business Act (sometimes referred to as the Electric Utility Act) and its subordinate presidential and ministerial decrees comprise the key legislation regulating the electricity sector in South Korea. The Act broadly provides for the following: the granting of licences to engage in specified electricity businesses (including, in particular, generation, transmission, distribution and retail sales), protection of electricity customers, prohibition of certain unfair activities, a wholesale electricity market, constitution and responsibilities of the electricity regulatory body, and safety management relating to electricity equipment. The framework of the Electricity Business Act is based on the Korean government's original policy initiatives to liberalise the Korean electricity market in the late 1990s, which was sidetracked by the political backlash against liberalisation in the mid-2000s, as discussed below.

A number of other specialised statutes are also relevant to the overall legislative framework. The Act on the Development, Use and Diffusion of New and Renewable Energy, which is intended to promote development of new and renewable energy, provides for feed-in tariff (FIT) programmes and renewable portfolio standards (although the FIT programme is no longer available to new and renewable sources entering the market after 2012) and other schemes to incentivise development of new and renewable sources. The Integrated Energy Business Act is also applicable to enterprises wishing to supply combined heat and power to customers, although the Electricity Business Act still governs electric power supply. Finally, in relation to nuclear energy, the construction and operation of nuclear power plants must comply with the requirements of the Nuclear Safety Act.

Government policy

Since 1999, the Korean government has implemented policy initiatives to liberalise the Korean electric power industry. As part of these initiatives, in the early 2000s, the government (i) established the Korea Power Exchange (KPX) in order to enable wholesale electricity trading, (ii) split off the generation arm of the state-owned Korea Electric Power Corporation (KEPCO) into a number of separate power generation companies (GenCos) in order to promote competition in the electricity generation sector, and (iii) adopted a plan to privatise one of the five GenCos engaged in thermal generation.

However, due to a political backlash against liberalisation during the mid-2000s which has resulted in the suspension of further liberalisation initiatives, various market and non-market factors continue to co-exist side by side in the electricity sector. For example, the installation of power plants is in principle permitted only when the capacities resulting from the introduction of such power plants would be compatible with the national electricity supply and demand forecasted by the Ministry of Trade, Industry and Energy (MOTIE), and wholesale electricity trading prices are not determined through supply and demand, but rather in accordance with a specially designed pricing mechanism set forth in the Electricity Market Operation Rules (Market Rules) of the KPX, over which the MOTIE exercises de facto control. At this point, it remains uncertain whether the government will resume its plans for liberalisation or pursue alternative initiatives.

Under the Electricity Business Act, the MOTIE is vested with the responsibility of, inter alia, forecasting long-term electricity supply and demand, preparing basic directions on such supply and demand, and planning the installation of utilities relating to generation, transmission and distribution of electricity, which is notified every two years via a Basic Plan on the Long-Term Supply and Demand of Electricity (Basic Plan). The 7th Basic Plan for the period from 2015 to 2029 focuses on (i) ensuring a stable supply of electricity as its top priority, (ii) low carbonisation in the country's power mix, (iii) active consumer demand management, and (iv) diffusion of distributed generation. To achieve low-carbonisation of the generation sector, the MOTIE suggests the following: withdrawing certain coal-fired power plant projects from the Basic Plan, replacing obsolete thermal power plants with more environment-friendly ones, building up of new nuclear power plants and increasing the overall share of new and renewable energy sources. However, there is uncertainty as to whether the foregoing goals will be successfully achieved, given the presence of a number of domestic factors working against their favour.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Even after splitting off the GenCos, KEPCO still remains an integrated electricity utility company having an effective monopoly over the transmission, distribution and retail sale of electricity in South Korea.

As of the end of 2015, the power production industry in South Korea consisted of KEPCO's six wholly owned generation subsidiaries (ie, the GenCos) and 10 independent power producers (excluding renewable energy producers). GenCos generate the substantial majority of electricity in the country, and, as of the end of 2015, held approximately 75.0 per cent of the total installed generation capacity. According to KEPCO's 2015 annual report, in 2015, 32.4 per cent of nationwide electricity production was generated by KHNP, 50.5 per cent by other GenCos, and 17.1 per cent by independent power producers.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Under the Electricity Business Act, the MOTIE possesses the power to authorise new power plant projects through the granting of generation business licences. Such power is delegated to provincial authorities for power plants having capacity of 3MW or less. In principle, a generation business licence will not be granted for a proposed power plant project if its installed capacity amount would be inconsistent with the MOTIE's forecasted national electricity supply and demand. The criteria that the MOTIE applies in granting licences include, among other things, bankability of the proposed project, credit ratings of sponsors, feasibility of construction and operation plans, qualifications of human resources or contractors, social receptiveness in project areas, securing project sites, ensuring interconnection and transmission and water and fuel supply, and reliability of sponsors.

Notably, a power producer's failure to meet construction schedules in terms of both commencement and completion of construction might result in the cancellation of an already issued licence.

On Jeju island, the Jeju provincial authority is also empowered to authorise wind power projects, although it must discuss with the MOTIE in respect of wind power projects having capacity of 20MW or more.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Under the Electricity Business Act, tariffs for grid connection services are subject to review of the Electricity Regulatory Commission (ERC) and approval from the MOTIE. The Act also requires transmission service providers not to discriminate among their customers. The operation of generation facilities must abide by the Standard on the Electric Power Grid and Electricity Quality promulgated by the MOTIE.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

As mentioned in question 1, the Act on the Development, Use and Diffusion of New and Renewable Energy promotes the development of alternative energy sources, which are classified into new and renewable energy sources. New energy sources include power production from hydrogen fuel, fuel cells and integrated gasification combined cycles, and renewable energy sources include solar power, wind power, hydro power, geothermal power, bioenergy power and waste energy power. Owing to the increasingly heavy burden on governmental budgets, feed-in-tariff programmes are no longer available to new and renewable sources entering the market after 2012, which may instead apply for renewable portfolio standard programmes.

Although the 2nd National Energy Master Plan and the 7th Basic Plan announced in 2014 and 2015, respectively, showed a blueprint for distributed generation (mostly consisting of combined heat and power) as a response to social unease over long-distance transmission lines, there have been not been any further initiatives to implement this blueprint.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

At the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21), the South Korean government agreed to reduce the country's nationwide greenhouse gas emissions by 37 per cent from the business-as-usual level by 2030. The South Korean government is considering achieving this objective through a combination of domestic policies (accounting for 25.7 per cent of reductions) and utilisation of international market mechanisms (accounting for 11.3 per cent). While various domestic policies aimed at reducing greenhouse gas emissions are known to be under consideration (although details have not been revealed), industry insiders expect that the main target will be the electricity generation sector, and in particular, coal-fired power plants. This has been evident in the reluctance of the MOTIE's high-level officers in granting new licences to prospective coal-fired power producers. As discussed under question 1, the MOTIE very recently announced its policy to retire or replace obsolete coal-fired power plants earlier than originally planned. The upshot is that domestic wholesale and retail electricity prices are likely to increase, since liquefied natural gas, which is far more expensive than coal, will comprise a greater portion of the country's overall power mix going forward.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The Korean government is presently implementing various initiatives to facilitate the development and use of energy (or electricity) storage systems (ESS). For example, the government promotes the use of ESS equipment to improve grid connection conditions for renewable energy by assigning a higher weighted value to ESS equipment linked to wind and solar power projects (4.5-5.5 and 5.0 respectively) than for wind and solar power projects without ESS equipment (1.0-2.5 and 0.7-1.5 respectively), in issuing renewable energy certificates. The government has also established a demand response market where ESS facilities may function as peak shaving facilities. Meanwhile, a government fund raised for the domestic electricity industry plans to subsidise various energy-independent island projects under which renewable sources linked to energy storage facilities will replace existing small-scale diesel-based power plants on various islands. Finally, the government is also supportive of KEPCO's development of ESS equipment for frequency regulation in the grid.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

South Korea relies heavily on imports of energy sources to satisfy most of its electricity demand. To achieve the goal of economic dispatch of electricity as well as to counter greenhouse gas emission, the government is encouraging the development of new nuclear power plants. The 7th Basic Plan suggests that the construction of two new power plants is needed in 2028 and 2029, respectively, to fill forecasted deficiencies in installed capacities. Despite the government's favourable stance on nuclear power, the Fukushima Daiichi nuclear disaster in 2011 and a recent scandal regarding the use of falsely certified components at domestic nuclear power plants has led to a substantial decline in public receptiveness towards nuclear power plants in the country. In this respect, there is uncertainty over the feasibility of future nuclear power projects in the country.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

A transmission business licence is required to engage in the provision of transmission services. The MOTIE has authority to grant transmission business licences, although none have been granted so far except to KEPCO, the monopolistic operator of the nationwide transmission line.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Power producers may access transmission lines after contracting with the transmission service provider (ie, KEPCO) in accordance with the terms and conditions of KEPCO's Rules on the Use of Transmission and Distribution Facilities, which is subject to the MOTIE's approval.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The 7th Basic Plan suggests the following four directions in terms of planning of transmission lines: expansion of transmission lines to support stable electricity supply, improvement of power grid reliability, promotion of social receptiveness towards transmission lines, and granting of generation business licences after reviewing grid constraints.

To address the increasing rise of the NIMBY (not in my back yard) phenomenon against transmission lines in the country, which has at times hampered the development of new generation sources, the government enacted the Act on Compensation and Assistance for Areas Adjacent to Transmission and Transformation Facilities in 2014 to bolster support to adjacent neighbourhoods affected by transmission lines and increase compensation for economic losses caused by transmission lines crossing private properties.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The Electricity Business Act requires that tariffs for electricity transmission services be subject to the ERC's review and the MOTIE's approval. The Act also requires that transmission service providers not discriminate among their customers.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The KPX is primarily responsible for day-to-day operation of the country's power grid. The Electricity Business Act requires the MOTIE to promulgate standards to maintain the reliability of the power grid which the KPX and electricity utilities must follow, and has empowered the MOTIE to oversee, assess and investigate whether the grid, as maintained, is reliable.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

A distribution business licence is required to engage in the provision of distribution services. The MOTIE has authority to grant distribution business licences, although none have been granted so far except to KEPCO, the monopolistic operator of the nationwide distribution network.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

KEPCO, as the sole retail seller in the country, may access the distribution networks which are owned and operated by it. Community electricity business licence-holders are also eligible for access to distribution networks.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

In terms of smart grids, under the Act on Construction and Facilitation of Use of Smart Grids, the government is in charge of developing and implementing a five-year plan for constructing and facilitating the use of smart grids. Research and development funds may be accessible for developers of smart grid technologies, depending on the government's budget.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The Electricity Business Act requires that tariffs for electricity distribution services be subject to the ERC's review and the MOTIE's approval. The Act also requires distribution service providers not to discriminate from among their customers.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

A retail sale business licence is required to engage in the retail sales of electricity. The MOTIE has authority to grant retail sale business licences, although none have been granted so far except to KEPCO, the monopolistic retail electricity seller.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

The Electricity Business Act and the Price Stabilisation Act set forth the procedures for the approval of tariffs for the retail sales of electricity. The MOTIE has power to approve proposals on tariffs, following consultation with the Ministry of Strategy and Finance and review by the ERC. Under the Electricity Business Act and the Price Stabilisation Act, electricity tariffs are in principle established at levels that would enable KEPCO to recover its costs attributable to its basic electricity generation, transmission and distribution operations as well as receive a fair investment return on capital used in those operations.

KEPCO classifies electricity usage into nine categories – residential, general, educational, industrial, agricultural, street lighting, midnight power, electric vehicle, demand management optional – with a different tariff applying to each usage.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Cost-based pool system

Since April 2001, wholesale electricity trades have been occurring at the KPX. The KPX has responsibilities under the Electricity Business Act for determination of wholesale electricity prices under the cost-based pool system as set forth in the Market Rules, and processing the trades and their settlements. Wholesale electricity prices have two principal components: system marginal price (largely representing variable costs of generation under the merit order system) and capacity payment (largely representing fixed costs of generation). Since variable costs and capacity payments are determined in advance by the Cost Evaluation Committee (mostly comprised of interested parties, government officers and industry experts), power producers as well as KEPCO have no effective control over the pricing in the wholesale electricity market. The system marginal price is adjusted on the basis of factors including the distance of a generation facility to supplied areas, network and fuel constraints and the amount of power loss such as transmission loss.

In order to prevent wholesale electricity trading resulting in excessive financial imbalances between KEPCO and its subsidiaries which sometimes arise from windfall profit taking by base-load generation facilities and upward fluctuations in fuel prices, the wholesale electricity prices applicable to such related party trades are determined using the following formula: variable cost + [system marginal price – variable cost] x adjusted coefficient. The adjusted coefficient is determined by the Cost Evaluation Committee based on considerations of, among other things, retail electricity tariff rates, the differential generation costs for different fuel types and the relatively fair rate of returns on investment.

In addition to system marginal price, power plants are entitled to capacity payments to compensate for their construction costs. The capacity price is determined annually by the Cost Evaluation Committee based on the construction costs and maintenance costs of a standard generation unit and is paid to each generation company for the amount of available capacity indicated in the bids submitted the day before trading, subject to such capacity being actually available on the relevant day of trading. Currently, the capacity price is 7.60 won per kilowatt-hour which is applied to all power plants, regardless of fuel types, subject to: (i) a regionally differentiated capacity payment system to prevent excessive capacity build-up, as well as induce optimal capacity investment at the regional level; and (ii) hourly and seasonal adjustments in order to incentivise power producers to operate their generation facilities at full capacity during periods of peak demand.

Vesting contract system

See 'Update and trends'.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The Electricity Business Act specifically provides for electricity utilities' obligations to contribute to universal supply of electricity. In this respect, a power producer or retail seller may not refuse to supply electricity to a

customer without justifiable reasons. To date, the presidential decree of the Act has failed to provide for universal supply of electricity in detail. However, the MOTIE's regulated retail electricity rate gives relative benefits to certain customers by way of cross-subsidies. No supplier of last resort has been appointed, as KEPCO, having effective monopoly over retail sales, assumes the de facto burden as supplier of last resort.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The MOTIE is primarily responsible for determination of regulatory policy in the electricity sector. The Electric Policy Council of the MOTIE is also involved in reviewing the draft Basic Plan, etc.

23 Scope of authority

What is the scope of each regulator's authority?

The MOTIE has primary regulatory responsibility over the electricity sector in South Korea, including, among other things:

- granting of electricity business licences;
- approval of business transfers, mergers, split-offs and changes in control of electricity business enterprises;
- cancellation of business licences, suspension of operations, and imposition of sanctions or other disciplinary measures;
- approval of various tariffs relating to transmission lines, distribution networks and retail sales;
- setting ceiling amounts on wholesale electricity prices;
- approval of the Market Rules;
- approval of vesting contracts between power producers and retail sellers; and
- restructuring of the electricity industry, including introduction of a competitive system.

The Electricity Business Act requires the ERC to review the foregoing agendas before the MOTIE takes action.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The ERC is a statutory regulatory body established pursuant to the Electricity Business Act and comprises qualified professionals and experts. However, the ERC is not an entirely independent body, as the MOTIE is known to have substantial influence over the ERC.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Any legal stakeholder may file an administrative appeal or lawsuit to invalidate decisions rendered by the MOTIE. Grounds for challenge include violations of constitutional principles (fundamental human rights, equal treatment, due process and so on) or laws.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The MOTIE has authority to approve mergers, split-offs, business transfers or changes in control of electric business enterprises. The ERC will review proposed transactions beforehand, but the final decision rests with the MOTIE.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Regulators will look to a number of high-level considerations, such as whether the transferee, assignee or successor can satisfy the criteria required for the issuance of a generation business licence, and whether there are any concerns that the transaction in question may adversely impact national electricity demand and supply or lessen the quality of electricity.

There is no statutory limit on the review period, and cases are very few so far in terms of thermal power plants.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The MOTIE has primary oversight responsibility over the electricity sector in South Korea, and has authority to implement sanctions or other disciplinary measures in respect of illegal activities. In addition, the Korean Fair Trade Commission (KFTC) is empowered under the Monopoly Regulation and Fair Trade Act (MRFTA) to regulate anticompetitive practices across all sectors.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

The Electricity Business Act prohibits:

- a power producer from providing false information to the KPX for the purpose of price manipulation;
- a transmission or distribution service provider from:
  - unduly discriminating among its customers;
  - failing to perform its transmission or distribution obligations; and
  - utilising another electricity business enterprise's information to harm such other enterprise or a third party;
- a retail electricity seller from unduly calculating electricity tariffs; and
- an electricity business enterprise from harming the benefits of end users, and not complying with instructions from the KPX relating to its power grid operation.

Furthermore, the MRFTA prohibits various types of anticompetitive activities including, inter alia, price-fixing, market or customer sharing arrangements, bid collusion and abuse of market dominance. However, because the domestic transmission, distribution and retail markets are permitted to exist as virtual monopolies, instances of the KFTC's enforcement of the anticompetitive laws in the sector have been historically low in number.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

See questions 28 and 29.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Yes. Under the Electricity Business Act and the Foreign Investment Promotion Act and its subordinated regulation, foreign investments into a nuclear power generation sector are prohibited. Foreign investments into other power generation sector are permissible only where the total amount of installed capacities acquired by foreign investors is 30 per cent or less of the total installed domestic capacity.

Update and trends

Increasing social backlash against coal-fired power plants
Following a marked deterioration in air quality in spring of this year, the electric power industry is experiencing a severe backlash against coal-fired power plants, resulting in the MOTIE's announcement of a policy to retire or replace obsolete coal-fired power plants earlier than originally planned in the 7th Basic Plan.

Promotion of new energy industry
In January 2016, the MOTIE announced an initiative to promote the so-called new energy industry. The new energy industry project relates mainly to smart grid and renewable energy projects, and electrical vehicle charging infrastructure. KEPCO is expected to invest 1 trillion won in 2016 and 2017 in related businesses. The MOTIE has also recently proposed an amendment to the Electricity Business Act to enable and promote the development of new energy industry businesses.

Progressive electricity tariff rates for residential use
KEPCO's tariffs for residential use are set at six progressive rates, with the maximum rate being 11.7 times the lowest rate. This progressive tariff structure was originally put in place in the 1970s to decrease electricity use by heavy users. However, following an unprecedented heatwave in Korea during the summer of 2016 which resulted in a substantial increase in residential electricity consumption and the ensuing public backlash due to high electricity bills, the government is considering amending or abolishing this tariff structure altogether.

Uncertainty over implementation of vesting contract system
The Electricity Business Act introduced a vesting contract system effective from November 2014, under which the difference between strike prices and market prices of traded electricity will be settled for specified quantities. The vesting contract system's primary objective is to prevent windfall profit-taking by low-cost power producers (such as nuclear, coal, hydro and by-product gas), replacing the adjusted coefficient (refer to question 20). The system is also expected to provide more transactional certainties to the parties than market trading. The contractual terms will be subject to approval by the MOTIE in order to ensure fair and standardised application of the system to all power producers. Owing to the recent backlash against coal-fired power plants, the implementation of vesting contracts has been put on hold, and presently, it is uncertain whether the MOTIE will implement this system.

In terms of transmission and distribution sectors (currently only applicable to KEPCO), foreign investments are permissible only where the total shareholding ratio of foreign investors is below 50 per cent and voting shares owned by foreign investors do not outnumber those owned by the largest domestic shareholder (as of the end of June 2016, the largest domestic shareholder of KEPCO was Korea Development Bank with a 32.9 per cent stake). In this connection, the Korea Electric Power Corporation Act requires the government to directly or indirectly own at least 51 per cent of KEPCO's shares.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Cross-border electricity trades are not possible in South Korea as its power grid is isolated owing to its geography (being a peninsula) and having North Korea (with which South Korea is still technically in conflict) as its neighbour.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

See question 32.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The Electricity Business Act does not specifically restrict transactions between an electricity utility company and its affiliates. However, the Market Rules, which strictly regulate wholesale electricity trades, apply to trades between KEPCO and its subsidiary companies (ie, GenCos). Meanwhile, the MRFTA and its subordinate presidential decree and regulations strictly prohibit 'unfair' transactions between affiliates in general.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

The KFTC is responsible for the enforcement of anticompetitive laws and regulations governing restrictions on affiliate transactions. Typical sanctions imposed for non-compliance are administrative measures such as correction orders and monetary penalties.

bkl BAE, KIM & LEE LLC

Joonki Yi **joonki.yi@bkl.co.kr**
Chin Pyo Park **chinpyo.park@bkl.co.kr**

133 Teheran-ro
Gangnam-gu
Seoul, 06133
Korea

Tel: +82 2 3404 0000
Fax: +82 2 3404 0001
bkl@bkl.co.kr

Mexico

Rogelio López-Velarde and Amanda Valdez
Dentons López Velarde, SC

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Until 2013, the generation, transmission, distribution and marketing of electric power for public utility service purposes in Mexico was exclusively reserved to the federal government, through the Federal Electricity Commission (CFE), a public body of the federal government operating as a vertically integrated monopoly. Private participation was allowed only in the generation and transmission of power not intended to provide public utility services, under six types of permit. However, as a result of the lack of sufficient government funds to meet the significant increase in energy demand during the past decade and as part of the package of structural reforms that Mexico has enacted during the administration of President Enrique Peña Nieto, the Mexican energy sector is now subject to a completely new legal framework, enacted on 11 August 2014, following a historic Constitutional reform passed and enacted in December 2013, that opened almost all areas of the oil, gas and power industries to private participation and competition, with no foreign investment restrictions.

Over the past 15 years, the federal government fostered the participation of private companies in the electricity sector, particularly in power generation. Though its independent power production programme proved successful (private independent power producers have a generation capacity of more than 12,000MW, a considerable portion of the growing demand) and self-use power generation projects also gained a presence, the rapid growth in energy demand (between 2016 and 2030, the increase in electricity demand is expected to entail an additional 57,122MW of generation capacity, 24,599km of transmission lines, transformation substations for 64,352MVA and a significant number of distribution lines and distribution substations), the limited governmental resources and high debt levels that were being reached, the need to provide clearer rules and opportunities to continue receiving private investment and increase competition in the electricity industry, the lack of scrutiny and transparency of the CFE rates and service conditions, and the lack of reliability and excessive costs of power for industrial processes (which affects the competitiveness of Mexican industries in a global economy), lead the Mexican government to include the regulation of the electricity industry in a major package of legal reforms comprised of a Constitutional reform, amendments to 12 existing laws and the promulgation of nine new laws (known as the 'Energy Reform').

The first important change resulting from the Energy Reform is that the oil and gas industry and the electric power industry (previously vertically integrated and exclusively reserved to Pemex and the CFE under the Constitution) are no longer considered strategic activities, and accordingly, all parties are free to participate except in those activities that have been expressly reserved to the state under the new article 27 of the Constitution (namely, nuclear power, power transmission and distribution as a utility service, and the dispatch and operation of Mexico's National Electric System to be controlled by an independent system operator). Pemex and the CFE are no longer considered public instrumentalities of the federal government and are transformed into 'state productive enterprises' a new form of state-owned commercially oriented companies, each managed by a board of directors and subject to corporate governance principles.

Moreover, for the electric power sector, the Energy Reform contemplates the creation of a completely new industry model based on a competitive wholesale electricity market operated by the new independent system operator (ISO), while keeping the state's control and ownership of the National Grid and its exclusivity with respect to power transmission and distribution activities, but with the express possibility of entering into contracts with private parties assisting the Mexican state in the development of such activities (including public-private partnerships, PPP arrangements). The Energy Reform opened the market to merchant power plants that sell their power in bulk, where the ISO dispatches the system on the basis of cost efficiencies, providing market participants with non-discriminatory access to the grid, which is expected to affect the cost of power to the end user, thereby reducing the price differentials that the industrial and residential sectors currently have with respect to other economies.

The Energy Regulatory Commission (CRE) became the regulator of the midstream and downstream oil and gas industry, and all areas of the electricity industry, which turned the CRE into a powerful and critical part of the Mexican government.

The main legal framework for the electric power industry resulting from the Energy Reform included the following four federal statutes:

- the Law of Coordinated Regulatory Agencies, governing the organisation and authority of both the National Hydrocarbons Commission as upstream regulator, and the CRE for midstream and downstream activities, including Mexico's electricity industry;
- the Electricity Industry Law, which liberalises and provides the new organisation of the electricity industry, from generation to distribution and marketing, including the creation of a wholesale electricity market;
- the Law of the Federal Electricity Commission, which reorganises the existing power utility, the CFE, and defines its new role in the market, as well as its contracting methods; and
- the Geothermal Energy Law providing for the terms of exploitation of geothermal resources.

In parallel, various federal statutes were amended, including the Foreign Investment Law, the PPP Law and government procurement laws, among others.

Initially, no new statutes were enacted to regulate specifically renewable energy sources; however, in December 2015, the new Energy Transition Law was enacted (and the previous Law for the Use of Renewable Energies and the Financing of the Energy Transition was repealed). This new statute is aimed at promoting the diversification of the energy sources used to generate electricity through the use of renewable energies.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Commercially speaking, the Mexican electricity sector is still divided into two main areas: the electric power public utility service and the activities in which private participation is allowed. The generation, transmission, distribution and sale of power for public utility service purposes, previously reserved to the federal government through the CFE, is yet controlled by the CFE. However, as one of the most important and

first changes resulting from the Energy Reform, the operational control of the National Electric System (SEN, which encompasses the generation, transmission and distribution facilities used in the provision of electric power public utility services) has already been assumed by the National Centre for Energy Control (CENACE), a new governmental instrumentality created as a spin-off of the CFE, in charge of operating the SEN and dispatching all of the power output generated by the CFE and private generators interconnected with this system, and provide open access to all market participants.

Private participation, on the other hand, is still concentrated in those activities where private participation was already allowed prior to the Energy Reform, particularly independent power production (IPP) (private generation facilities aimed at supplying all of their capacity and power output to the CFE) and self-supply generation (private generation facilities aimed at supplying power for self-supply purposes to the holder of the relevant self-supply power generation permit and its shareholders).

The total installed capacity in the country in 2015 was over 68,044MW, of which 71.7 per cent corresponds to conventional power plants and 28.2 per cent to clean power plants. Since 1997, most of the CFE's capacity additions have been successfully installed through IPPs (with an installed generation capacity of more than 12,850MW in 17 years, and 906MW additional capacity at present in construction and 2,059MW currently in bid processes).

Nevertheless, private participation has grown consistently in all areas of the electricity industry, now that the wholesale electricity market has initiated operations, allowing private companies to participate in new areas such as power marketing and even public utility services. The new design of the sector, as contemplated in the Electricity Industry Law, includes:

- private and government-owned generators;
- CENACE, as the independent operator of the SEN and the wholesale electricity market;
- government-owned transporters and distributors, in charge of providing public utility transmission and distribution services through the national transmission grid and the general distribution grids, all to be spun off from the CFE;
- private entities participating in transmission and distribution activities as contractors to the government-owned transporters and distributors, under PPP schemes;
- private and government-owned marketers, who may participate in the wholesale market and represent generators and qualified offtakers;
- private and government-owned suppliers, which are marketer who hold a permit authorising them to provide power supply services (classified as basic supply service, qualified supply service or last resource supply services);
- qualified offtakers, which are large offtakers entitled to acquire energy directly from the wholesale market, or from a marketer or a supplier; and
- non-qualified offtakers receiving basic supply services from an authorised supplier.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The main permit required to construct and operate generation facilities is the power generation permit granted by the CRE.

In addition, power generation facilities require a federal environmental, safety and health impact authorisation granted by the Ministry of the Environment and Natural Resources (SEMARNAT) and if the use of national waters is involved, a concession or a permit granted by the National Waters Commission (hydroelectric projects with a generation capacity of 30MW or less that do not affect the flow or quality of water do not require a water concession). Land use and local environmental permits must also be obtained from the state and municipal authorities where the project is located.

Moreover, the new Electricity Industry Law requires those intending to obtain a generation permit to file with the Ministry of Energy (Sener) a social impact assessment; Sener shall then evaluate such assessment and issue the corresponding resolution and recommendations. The regulations establishing details about the scope and effects of this new requirement are yet to be issued.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Although power transmission and distribution services are reserved to the state, CENACE, as independent operator of the SEN, is the entity in charge of guarantying open access to the SEN. The general technical requirements to permit the interconnection of generation facilities to the SEN are issued by CENACE and approved by the CRE, who is also the authority in charge of approving the model Interconnection Agreements, approving the charges payable for the studies required to determine the specific infrastructure required to permit each interconnection and other aspects of the interconnection process, and resolving disputes concerning access to the SEN.

In turn, transporters and distributors are obligated to permit, on a non-discriminatory basis, the interconnection of all generation facilities that request such interconnection, whenever the interconnection is technically feasible. For that purpose, CENACE shall instruct the relevant transporter or distributor to enter into the required interconnection agreement, once the characteristics of the specific infrastructure have been determined. The transporter or distributor and the relevant generator shall then enter into the corresponding interconnection agreement within 10 business days following the notification of CENACE's instructions. Upon conclusion of the required infrastructure, a verification unit authorised by the CRE shall certify that the interconnection facilities comply with the characteristics established by CENACE and all applicable standards; in that case, CENACE shall instruct the transporter or distributor to carry out the physical interconnection within the 72 hours following such instruction.

The Market Rules (which are the rules and procedures regulating the operation of the wholesale electricity market) regulate the criteria that CENACE shall use to determine the specific infrastructure requirements, the priority granted to each interconnection request and the procedures to jointly evaluate requests affecting a single region.

Instead of installing the required infrastructure at their cost (either through the execution of the relevant works or the contribution of the required funds), generators may choose to request CENACE or the distributor to include it in the expansion and modernisation programmes of the National Transmission Grid and the General Distribution Grids, as applicable, provided such infrastructure brings specific benefits to the SEN (such benefits being evaluated pursuant to the general criteria issued by the CRE). In that case, the generator may be required to guarantee the development of the proposed generation facility.

If the generator chooses to execute the necessary works or contribute the necessary funds, the generator has the option to acquire the corresponding financial transmission rights, or otherwise receive the proceeds of their sale, pursuant to the Market Rules.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

During 2016, power in Mexico has been produced from these sources in the following proportions:

- 11.80 per cent hydro;
- 49.31 per cent combined cycle;
- 18.57 per cent steam, turbogas and internal combustion;
- zero per cent dual (coal and fuel oil);
- 13.24 per cent coal;
- 4.52 per cent nuclear;
- 0.44 per cent wind;
- 2.08 per cent geothermal; and
- 0.005 per cent photovoltaic.

For over a decade, the government has encouraged combined-cycle gas-fired power plants, making this type of technology a requirement in most of the international public tenders called by the CFE for the award of long-term contracts for the commitment of power generation capacity and the purchase and sale of associated power output, but in 2010

CFE began undertaking international public tenders for the award of long-term contracts for renewable energy projects (specially, wind farm projects). These power plants and renewable energy facilities are developed by private companies under the IPP scheme contemplated in the previous legal framework.

The IPP programme began in 1997, the AES corporation having the first power plant developed under this scheme. Under the IPP programme, all of the financing and risk is placed on the sponsors and payment is made to the contractor based on capacity and O&M charges having natural gas paid as a pass-through cost to the CFE.

At the outset, the IPP bids were purely 'output contracts', where the developer was barred from aggregating loads and building oversized plants. The developers were not able to take advantage of economies of scale, normally with minimum flexibility regarding the supply of natural gas. The contracts awarded under the IPP bids required the construction and operation of combined-cycle gas-fired power plants to be built and operated at a site predetermined by the CFE, with the gas supply prearranged by the CFE with Pemex-Gas y Petroquímica Básica (PGPB), one of the operating subsidiaries of Pemex, a sister company of the CFE.

After various consultations, the CFE revised the structure of the IPP bids and bidders were then allowed to:

- aggregate loads and propose the construction of an oversized plant; and
- choose the site and, in some instances, the interconnection points, subject to certain conditions.

The IPP bids were very successful, not only because of the number and diversity of reputable power companies participating in such international tenders, but also because of the rates and competitiveness of the offers. All of the payments under the contracts awarded are being financed by resources of the federal government. Key issues affecting IPPs for combined cycle power plants, however, included the lack of infrastructure to supply natural gas to the power plants under development; the increasing scarcity of natural gas in Mexico and the inconsistency between the terms of the natural gas supply services offered by PGPB and the fuel supply terms required to make these projects suitable for project finance purposes. As a result, liquefied natural gas (LNG) supply became an important part of the supply of natural gas in Mexico and the CFE included long-term supply arrangements with LNG suppliers as part of its fuel supply strategy. Likewise, the CFE has anchored a large number of natural gas pipeline projects that allow the CFE to have access to several supply sources of gas imported from the United States. At the time, it is unclear whether, despite the Energy Reform, the CFE will continue awarding long-term PPAs to anchor the development of private combined-cycle power plants under a scheme similar to the IPP scheme, or if the IPP scheme will be completely superseded by the power and energy auctions that CENACE will carry out periodically; however, the CFE is still undertaking bid processes for the award of this kind of PPA for power generation facilities to be developed in the next few years.

In 2008, the Law for the Use of Renewable Energies and the Financing of the Energy Transition (the Renewable Energies Law) was enacted, precisely to regulate and promote power generation based on renewable energy sources, and in September 2009 the implementing regulations of the Renewable Energies Law were published. Following the global need to reduce the emission of greenhouse gases and global warming, the Renewable Energies Law was aimed at strengthening the competitiveness of the Mexican energy sector, reducing the use of fossil fuels and promoting the use of renewable energy. Moreover, as part of the CFE's programme to encourage the development of renewable energy projects in Mexico, in 2009 and 2010 it awarded four long-term power purchase agreements to private independent power producers developing wind power projects in Oaxaca, each with a generation capacity of 100MW. Pemex, on the other hand, initiated a programme to develop cogeneration power plants where private sponsors will construct, own and operate the facilities and Pemex will provide fuel and purchase steam and power output under long-term service contracts awarded through an international bidding processes. The first of these contracts was awarded in August 2009 to Abengoa/Abener and the project has a power generation capacity of 300MW.

The Mexican authorities developed and implemented the mechanisms necessary to allow renewable energy projects in Mexico to qualify for obtaining of certified emission reductions under the Kyoto–Bonn–Marrakesh Protocol and other similar programmes. Moreover, in June 2012, the General Climate Change Law was enacted, setting forth the basic framework to permit the creation of a domestic market for certified emissions reductions intended to survive the Kyoto Protocol or other mechanisms that may supersede such international instrument. The General Climate Change Law contemplates:

- the creation of the National Environmental and Climate Change Institute, intended to generate and consolidate all technical information for monitoring greenhouse gas emissions and the effects of climate change;
- a Green Fund, administered by the federal government to support and encourage initiatives towards emissions reduction;
- the requirement of implementing economic incentives to foster the development of clean energy sourced facilities, efficient cogeneration and renewable energies;
- the gradual development of a subsidies programme to promote the use of non-fossil fuels, energy efficiency and sustainable public transport; and
- the promotion of electricity generation from clean energy sources, with the expectation of reaching 35 per cent by 2024.

Some of the incentives for renewables that the Mexican government had already implemented under the previous legal framework (including accelerated tax depreciation rates and financing programmes) are still in play, but not all of them have been retained in the new regime.

Instead, the new statutes provide for different incentives, mostly intended to:

- promote open access to transmission and distribution infrastructure, and allow an adequate interaction of firm and intermittent power resources in the grid;
- support the development of new generation capacity through clean energy auctions resulting in long-term and medium-term agreements ('clean energy' includes renewable energy, nuclear and efficient cogeneration); and
- increase the involvement of offtakers in supporting clean energy projects, through the imposition of clean energy requirements reflected in a number of clean energy certificates (CELs) that suppliers and offtakers will be required to obtain on an annual basis.

Pursuant to the Electricity Industry Law and subsequent resolutions by the Ministry of Energy, qualified offtakers and power suppliers are required to acquire CELs for at least 5 per cent of their total energy consumption during 2018. CELs are granted to clean energy generators based on their power output, and are part of the products that may be traded in the wholesale electricity market. Moreover, the Energy Reform included a new Geothermal Energy Law, aimed at creating a new framework to develop Mexico's vast geothermal resources, which have been underused for decades, mainly owing to the absence of adequate regulations.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Government policy with respect to climate change is mainly focused on, and related to, the incorporation of renewable energy sources on a larger scale. As a result, the federal government has so far promoted the development of renewable energy projects anchored by long-term power purchase agreements awarded through public bidding processes to sell power to the CFE, which in turn is used to provide electric power utility services. The effects of the new mechanisms that are contemplated in the new Electricity Industry Law (which consist mainly of requiring qualified offtakers and power suppliers to acquire certain number of clean energy certificates) are yet to be seen. Moreover, CENACE is expected to continue launching long-term auctions for the purchase of energy and CELs from renewable energy generators, as a way to further promote renewable energy sources.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Although the Market Rules contain references to electricity storage, the laws and regulation do not provide yet an adequate regulatory framework to promote or support the development of storage solutions. The Ministry of Energy and the CRE are working on developing that legal framework.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The generation of nuclear power is exclusively reserved to the Mexican state, through the CFE and therefore no private nuclear power plants are allowed in Mexico. Mexico has only one nuclear power plant, with an installed capacity of 1,610MW.

While no commitments or formal announcements have been made, the Mexican government has indicated in a number of official documents that it is, at present, evaluating the possibility of increasing the generation of nuclear power as one of the strategies to reduce greenhouse gas emissions; however, following the events in Japan of March 2011, the Mexican government has indicated that all plans regarding nuclear power plants in Mexico are being revisited.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Public utility transmission services are exclusively reserved to the state; however, the participation of private entities through different types of contracts is allowed in order to finance, install, maintain, administer, operate or expand the infrastructure necessary to provide transmission and distribution of public utility services. The associations and contracts entered into between the Mexican state and private parties for these purposes shall be awarded through competitive processes where any interested party is entitled to participate.

The state productive enterprises providing transmission and distribution services will not require any specific permit for that purpose; however, the terms and conditions for the provision of such services are subject to CRE approval. In any case, the construction of transmission lines requires environmental and municipal authorisations, as well as authorisations to cross lands, lakes, rivers or other infrastructure facilities under the jurisdiction of governmental agencies or bodies, in which case rights of way and crossing permits must be obtained. In addition, in the case of transmission or distribution lines for public utility services, a social impact assessment shall be filed with Sener, for approval of the proposed impact mitigation and management measures.

Transmission lines constructed and owned by private power generation, export or import permit-holders may only be used to transmit the power generated, exported or imported by such permit-holders, who are not allowed to provide transmission services to third parties.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

At present, the only common carrier allowed to provide public utility transmission services in Mexico is the CFE (through its separate subsidiary enterprise in charge of transmission services), under terms, conditions and rates approved by the CRE. Although specific regulations have not yet been issued, it is understood that only those eligible to participate in the wholesale market are eligible to receive power transmission or distribution services, and those power projects that were grandfathered under the Electricity Industry Law.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

In the past, there were no government incentives specifically intended to encourage the expansion of the transmission grid. The CRE made important efforts to anchor grid expansion through open-season procedures for the reservation of transmission capacity, where participants wishing to reserve capacity were required to financially guarantee their commitments with respect to the reserves capacity they have requested. These efforts resulted in some successful expansions of the grid; however, in light of the new alternatives and incentives that are now available under the new legal regime, it is unlikely that similar schemes will continue being used to promote further expansion. As mentioned above, the Electricity Industry Law provides new opportunities to allow private parties to assist the CFE in the financing, installation, maintenance, management, operation and expansion of the national transmission grid and the general distribution grids, through contracts entered with transporters and distributors (the PPP scheme may be used for this type of project). Moreover, pursuant to the recently issued Market Guidelines (which regulate the wholesale electricity market) financial transmission rights (FTRs) will be granted to market participants who pay for the expansion of the transmission and distribution grids. These FTRs, which may also be traded in the wholesale electricity market, will have a term of 30 years and will be determined based on a calculation of the improvements that the relevant expansion grants to the SEN. See also the references to upcoming bid process in 'Update and trends'.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The rates payable for power transmission services through the national electric grid and the general distribution grids are approved and supervised by the CRE, under methodologies intended to promote an efficient use of the grids, while allowing the carrier to recover adequate costs incurred in the provision of the services.

As one of the mechanisms to promote renewable energy projects, in April 2010, the CRE issued a methodology specifically applicable to determine transmission rates for projects based on renewable energy sources and efficient cogeneration projects. That methodology was aimed at promoting the use of clean technologies in the generation of power and was based on a post stamp scheme, where a fixed charge (denominated in pesos/kWh) was applicable to each level of transmission services (depending on the applicable voltage) subject to monthly inflation adjustments. However, those preferential rates will only remain applicable to those power projects that were grandfathered under the Electricity Industry Law. All other generators, importers, exporters, suppliers and offtakers contracting transmission and distribution services shall pay for those services at rates determined pursuant to the new methodology that the CRE approved on 7 September 2015. The new methodology became effective on January 2016 and is expected to remain in effect until December 2018. It is based on a post-stamp concept, with rates subject to adjustment based on inflation, exchange rate variations and the implementation of new transmission infrastructure.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

CENACE is entrusted by law with the dispatch and control of the SEN pursuant to the dispatch regulations and market rules, but transporters and distributors (which are separate state-owned enterprises) are the entities actually in charge of providing transmission and distribution services. CENACE is now independent from the CFE and other market participants, but the rules governing reliability of the transmission services are waiting to be issued.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Under Mexican law, no private power distribution networks are allowed, except in the case of small electric systems (which are systems that are not interconnected to the national electric grid but provide power utility services). Distribution grids held by state-owned enterprises (mainly CFE subsidiary enterprises) do not require a permit from the CRE), but the terms and conditions of their services are subject to CRE approval; on the other hand, the construction of power distribution grids is subject to the obtainment of environmental permits and local construction permits.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

In essence, access to the general distribution grids is regulated the same way as access to the national transmission grid. See question 10.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Not yet. Until now, only a few private entities have obtained power distribution permits, mainly for small delimitated areas, and CFE continues to be the largest, and almost only, distributor. However, distribution services are subject to the prinicples of open access and universal coverage, which would require expansions, if they are economically feasible.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The applicable rates are approved by the CRE, under methodologies intended to promote an efficient use of the grids, while allowing the distributor to recover adequate costs incurred in the provision of the services.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

The provision of power supply services to end users requires a permit from the CRE. Power supply services are classified as either: basic supply services (supply of power to small consumers), qualified supply services (supply of power to qualified (large) offtakers) and last resource supply services (back-up supply services).

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Until now, tariffs for the electric power public utility services provided by the CFE are settled by the Ministry of Finance and Public Credit (Hacienda), with the participation of Sener and the Ministry of Economy, based on the proposals made by the CFE. However, as a result of the Energy Reform, the CRE is now the agency in charge of issuing and applying the regulation of the rates for basic supply services, and approving the applicable service terms and conditions. Last resource supply services, on the other hand, are subject to maximum rates, also determined pursuant to the methodologies approved by the CRE.

Qualified supply services are subject to free competition, and are not subject to regulated rates.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Pursuant to the Electricity Industry Law, the prices for all transactions undertaken through the wholesale electricity market shall be determined by CENACE, based on the Market Rules and the offers received from the market participants. Moreover, marginal local prices shall be determined for each node and period, in accordance with the Market Rules, and those prices shall be applicable to the energy transactions on the wholesale electricity market.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Yes. Suppliers are subject to public and universal service obligations that require them to: offer their services to anyone that requests them, to the extent it is technically feasible, under efficiency, quality, reliability, continuity, safety and sustainability conditions; comply with the provisions of the Electricity Industry Law concerning social impact and sustainable development; contribute to the Electricity Universal Service Fund; and comply with the applicable clean energy and polluting emissions reduction obligations, among others.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The CRE, Sener and Hacienda determine the regulatory policy with respect to the electricity sector. However, there are also a number of consultation councils that have been created, with the participation of representatives of industry stakeholders, to opine on and participate in the determination of regulatory policies affecting the electricity sector.

23 Scope of authority

What is the scope of each regulator's authority?

The main powers given to the CRE are:

- the granting and enforcement of permits for the generation and supply of power;
- the approval of the terms and conditions for the provision of transmission and distribution services;
- the issuance of the methodology for the calculation of the rates payable for transmission and distribution services, as well as basic supply and last resource supply services; and
- approval of the Market Rules for the operation of wholesale market (except for the initial set of Market Rules, which was issued by Sener).

Sener is in charge of national energy policy and the overall planning for the SEN. Likewise, Sener is in charge of establishing the requirements and procedures related to clean energy certificates, authorising the expansion and modernisation programmes for the national electric grid and the general distribution grids and instruct transporters and distributors to execute the projects contemplated in such programmes, as well as establishing coverage obligations for the supply of power to rural communities and underdeveloped urban areas, and implement the mechanisms to direct funds to those purposes.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The CRE was created by administrative action, but was later strengthened by the promulgation of the Law of the Energy Regulatory Commission, enacted by Congress in 1995. Thereafter, as part of the Energy Reform, the scope of authority and independence of the CRE was enhanced under the Law of Coordinated Regulatory Agencies for the Energy Sector, which now governs the organisation and authority of both the National Hydrocarbons Commission, as upstream regulator,

Update and trends

CFE's Separation
On 11 January 2016, Sener issued the Terms for the Strict Legal Separation of the Federal Commission of Electricity (CFE's Separation Terms), whereby the CFE's activities shall be p the erformed on an independent and strict legal separation basis, either through state productive subsidiaries, affiliates or other business vehicle or alliance allowed under the applicable laws. As a result, the CFE shall be vertically and horizontally separated in several subsidiaries or affiliates for each of segment of the electricity industry. Despite there still being a number of entities to be created, in March 2013, the following subsidiaries were created: one for distribution, six for generation, one for basic supply services and one for transmission. Likewise, an affiliate was incorporated to act as intermediate generator, representing IPPs in the WEM, and another affiliate was created to undertake natural gas trading activities. At this point, the actual allocation of staff, assets and liabilities among the various entities is still ongoing, and lenders are providing financing for projects anchored by the CFE, as well as the CFE's contractors and suppliers, are facing some level of uncertainty about the resulting creditworthiness of each entity; nevertheless the projects remain attractive. Other market players, on the other hand, are pushing for strict separation rules to mitigate the CFE's market power as the largest generator and supplier of power, and the largest consumer of natural gas.

Clean energy obligations
Clean energy obligations are limited to the acquisition of CELs in proportion to the electricity consumed at each loading point. In this regard, Sener has determined that the CELs' obligation applicable for 2018 will be 5 per cent (the CEL's obligation for 2016 and 2017 is zero), which means that obligated entities (including power suppliers and qualified offtakers purchasing power directly from the WEM) shall acquire CELs for at least 5 per cent of the total electricity consumption of the load points they represent. For 2019, the existing draft of the notice establishing the CELs' requirements provides that a 5.9 per cent will be required.

Power auctions
Mexico's huge renewable energy potential, supported by the country's macroeconomic and political stability, continues to attract domestic and foreign investors. During the first half of 2016, CENACE held the first auction to award hedging agreements for the purchase of power, energy and CELs from clean energy sources. The purchaser is the CFE, which offered to purchase a total of approximately 6.4 million MW/h of electric energy for 15 years, approximately 6.4 million CELs per year for 20 years, and 500MW of power generation capacity per year for 15 years. There were 468 bids submitted for prequalification by 102 companies. In the end, at auction 18 sale offers were accepted, which resulted in the purchase of 5.3M of CELs, 5.4TWh of energy and zero MW of capacity, setting record low prices for solar PV technology. At the time this chapter was written, the second auction was ongoing, with offers being submitted up to mid-September.

Transmission bids
CENACE is expected to launch in the last quarter of 2016 the first of a series of bids for the development and operation of power transmission lines by private parties in association with the CFE, under the new schemes contemplated by the Electricity Industry Law. These bids are also creating large expectations, attracting the attention of both developers and potential lenders. The first bid is for a 600km transmission line from Tehuantepec, Oaxaca, to central Mexico.

and the CRE for midstream and downstream activities, including Mexico's electric power industry.

The CRE is considered to be a quasi-independent agency of Sener. It is a federal commission with revolving membership of seven commissioners appointed by the President and ratified by the Senate, subject to transparency laws.

In general terms, the CRE's resolutions, directives, norms and permits are independent and do not require the supervision or approval of a third party.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

CRE decisions are only subject to judicial review through an *amparo* proceeding. This is a special type of court proceeding wherein any person or entity in Mexico (national or foreign) may ask for judicial review in respect of acts or omissions of the government in violation of the petitioner's 'bill of rights'. An *amparo* proceeding is a combination of the common law injunction and writs of certiorari, mandamus and habeas corpus. In this type of *amparo* proceeding, the petitioner typically requests an injunction against certain governmental acts, or a mandamus (a request to the court to command the defendants, namely, the government agencies involved in the challenged act) to redress the government acts in question, because such acts were performed in violation of the petitioner's bill of rights (normally, due process of law violations). Normally, the injunction granted may be either provisional (during the *amparo* proceeding) or definitive (if the final determination of the court is that the relevant act or omission was unconstitutional). However, the CRE's resolutions are not subject to provisional injunctive relief, except in the case of resolutions whereby fines are being imposed.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

An acquisition of private generation or transmission facilities that entails the direct transfer of the assets and the relevant power generation or import permit requires the approval of the CRE and, if the transaction surpasses the monetary thresholds established under the Federal Law of Economic Competition to qualify as a reportable transaction, the approval of the Federal Economic Competition Commission (CoFeCe).

If there is no direct transfer of assets or permits, normally there are no changes to the control rules specifically applicable to businesses in the electricity sector in Mexico; thus, the main authorisation required for a change in control performed at a mezzanine level (ie, a change in control implemented through the acquisition of a participation in the company holding the relevant permit and owning the assets) would be CoFeCe's approval, which is applicable to all economic activities in general. Nevertheless, the CRE may include in its permits and authorisations provisions requiring its approval for any change in control of the permit holder. Owing to its market presence, the CFE's transfers are generally subject to CoFeCe approval.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

The approval by the CRE to transfer power generation or transmission assets and the related power generation, supply or import permit is aimed at ensuring that the new permit-holder meets all the requirements established under the applicable laws, from a legal and technical perspective, rather than an analysis of the antitrust or competitive aspects of the transaction. Accordingly, the procedure is similar in essence to that undertaken to grant a power generation, supply or import permit in which the CRE evaluates compliance with the applicable legal requirements to hold the requested permit, the technical qualifications of the facilities' operator in order to assure safety and conformity with the power generation or supply schemes in which private participation is permitted.

The CoFeCe's review of a reportable transaction is, on the other hand, aimed at analysing the possible anticompetitive effects that the transaction may have in the relevant market. Obtaining CoFeCe approval entails the filing of a data-intensive pre-merger notification report to be analysed by the CoFeCe, which normally requests the production and filing of additional information and documentation. Based on its analysis of the transaction, the CoFeCe may approve the transaction as described in the pre-merger notification report, approve

the transaction subject to compliance with certain conditions, or prohibit the transaction. Based on the applicable waiting periods, the process may take up to nine months in complex cases; however, these types of authorisations are normally obtained in approximately two to four months.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The CoFeCe is the Mexican federal agency empowered to prevent and prosecute anticompetitive practices in all economic sectors, including the electricity sector. The CoFeCe may impose sanctions on the economic agents involved upon determining the existence of a punishable conduct (such as tie-in sales, bid rigging or other sorts of monopolistic practices) that causes harm to other economic agents vertically or horizontally located.

Since its creation in 1993, the CoFeCe has been gradually developing an understanding of the energy sector and the important role this federal agency has to play in enforcing antitrust laws and regulations in a market that is, by its very nature, monopolistic, particularly with regard to the unparalleled situation of the Mexican energy industry, which involved for decades two vertically integrated monopolies controlled by the government: Pemex, in the oil, gas and basic petrochemicals sectors; and the CFE, in the electricity sector. The restructure of the energy sector calls for a more active role for the CoFeCe, assisting the regulators in the development of new competitive markets. As a result of another constitutional reform in 2013, CoFeCe has become fully independent and has a very broad authority. Moreover, as a result of the Energy Reform, Sener has been vested with very broad powers in order to ensure the separation of activities, with the authority to order the divestiture of assets and companies.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

As in other jurisdictions, Mexican law establishes a list of conducts considered to be anticompetitive per se. Under a 'rule of reason' analysis, however, the CoFeCe is empowered to prosecute and punish any anticompetitive or manipulative conduct aimed at or having the effect of damaging or impeding the competition process or free concurrence in the production, processing, distribution and marketing of products or services in the relevant market, provided the party undertaking such conduct is proven to have substantial power over the relevant market.

Sener and CRE, on the other hand, have been vested with broad powers aimed at assuring competition in the industry.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The main tool is the imposition of substantial fines by the CoFeCe. Also, the CoFeCe may require the relevant economic agent to cease any anticompetitive practice and even order the divestment of assets. Sener has also the same power (except for ordering divestments), and once such penalties have been conclusively established by the CoFeCe or Sener, the relevant injured party may use such resolution for a prima facie case for the payment of actual damages and lost profits before a Mexican court.

End users, on the other hand, are entitled to cumulatively pursue a claim before the Federal Consumer Protection Agency if power suppliers violate the Federal Law of Consumer Protection.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

As a general rule, there are no special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies except for the CFE, in which direct private participation (national or foreign) is legally barred, since this entity is exclusively controlled by the federal government; However, if the foreign investor intends to acquire more than 49 per cent of the capital of a Mexican company and such company has more than 3.6 billion pesos in assets, the prior approval of the National Commission on Foreign Investments may be required.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

There are no specific authorisations for the construction and operation of international interconnections or ties, and therefore, the authorisations are the same as the ones required to develop any transmission line; however, the Grid Code issued by the CRE provides that CENACE shall be the one determining the need to develop or reinforce international asynchronous ties between the SEN and other systems. Moreover, if they facilities cross the US-Mexico border, their construction shall be authorised by the Mexico–US International Boundaries and Waters Commission. Likewise, an authorisation by the Ministry of Finance is required in connection with the metering devices that will be used to determine the amounts of electricity being imported or exported.

大成 DENTONS LOPEZ VELARDE

Rogelio López-Velarde **rogelio.lopezvelarde@dentons.com**
Amanda Valdez **amanda.valdez@dentons.com**

Guillermo González Camarena No. 1600-6B
Col Centro de Ciudad Santa Fe
Mexico City 01210
Mexico

Tel: +52 55 3685 3333
Fax: +52 55 3685 3399
www.dentons.lopez-velarde.com

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

There are no cross-border fees applicable to cross-border electricity supply. The export and import of power by private parties requires an authorisation by the CRE. In addition, the import or export of power requires a special permit granted by the customs authorities in connection with the metering facilities used to measure the imported or exported power. Foreign power plants exclusively connected to the SEN may interconnect and inject power to the SEN under specific interconnection and dispatch rules that are different from those applicable to other foreign power plants.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

As a result of the Energy Reform, the clear separation of activities has become a predominant principle in the laws regulating the electricity industry (and the energy sector in general). The CRE and CoFeCe are required to oversee the adequate development of the market, and are granted the authority to approve the participation of affiliates in related business activities. Moreover, the CRE has been vested with the authority to issue rules and limitations for transactions among affiliates (particularly transactions between generators and affiliate power marketing companies), and rules regulating the participation of power generators (or their shareholders) in natural gas transportation or storage companies (in the understanding that such participation shall be approved by the CRE and CoFeCe). Those rules have not yet been issued, but the CRE and CoFeCe are currently working on them, along with the separation rules that will be applicable to the oil and gas midstream sector.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

Sener, the CRE and CoFeCe.

Nigeria

Babatunde Irukera and Ikem Isiekwena
SimmonsCooper Partners

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

The government's current policy is focused on achieving complete liberalisation of the electricity sector from its historic government-run structure. Nigeria's electricity sector has had a chequered history. From 1896, when electricity was first generated in Nigeria, up until 1950, the pattern of electricity development was in the form of individual electric power undertakings spread across regions and municipalities. While some of these undertakings were owned by the central government, the vast majority were owned by municipal and native authorities. In 1950, to integrate electricity power development and make it effective, the then colonial government passed the Electricity Corporation of Nigeria Ordinance No. 15 of 1950, which established the Electricity Corporation of Nigeria (the ECN). With this in place, the electricity department and all those undertakings controlled by the municipal and native authorities were subsumed under a central structure.

In 1972, the ECN and the Niger Dam Authority were merged to become the National Electric Power Authority (NEPA). From 1972 to 2005, the entire electricity sector continued in this unified structure and was run principally by the federal government-owned corporation, NEPA. This was a statutory company whose powers derived from an act of the legislature (including periodic evolution and successive amendments). The general burden of generating, transmitting, distributing and retailing electricity was statutorily the exclusive preserve of NEPA. Due to significant population growth and a lack of adequate funding, NEPA gradually became less capable of performing its functions effectively. By 1998, power generation had fallen as low as 1,700MW, even with an installed capacity of 6,000MW and a near-peak demand of about 7,000MW. Additionally, there was an estimated suppressed demand of 5,000MW being met by oil and gas exploration and production companies. The transmission and distribution networks were equally based on obsolete and inadequate infrastructure, especially in light of several developmental advances that had occurred over the years.

Addressing the significant deficit of electricity supply was at the centre of the policy that led to the introduction of the current regime. The main points of focus of the reform were to promote the policy of liberalisation, competition, and private sector-led growth. Before 2005, the legal framework for electricity in Nigeria was guided by the following legislation:

- the Electricity Act;
- the NEPA Act;
- the Energy Commission of Nigeria Act;
- the Utilities Charges Commission Act No. 104 of 1992;
- the Electricity (Amendment) Act No. 28 of 1998; and
- the NEPA (Amendment) Act No. 29 of 1998.

In 2005, the Electric Power Sector Reform Act (the EPSR Act) was enacted. The major objective of this Act was the liberalisation of the power sector through the unbundling and privatisation of NEPA and the encouragement of private enterprise in capacity development along the lines of the vertically integrated NEPA.

Major features of the EPSR Act include:

- the dissolution of NEPA by repealing the enabling statute, and the establishment of successor companies to which assets could be transferred and that could continue the activities of NEPA;
- the introduction of competition in the electricity markets during both the pre and post-privatisation periods;
- establishment of the Nigerian Electricity Regulatory Commission (NERC) as the agency responsible for regulating generation, transmission, distribution, and supply of electricity;
- provision for rural electrification through the establishment of the Rural Electrification Agency (REA); and
- stipulations for consumer protection, setting of performance standards, fixing of tariffs, etc.

Although there was some level of private-sector participation in generation before the EPSR Act, such operations were insignificant in the context of national consumption or on-grid availability, and there was no clearly defined framework for such participation. These players were known as the independent power producers (IPPs). The EPSR Act defines a phased and strategic implementation of electricity reform until an optimal capacity generation and a full competitive market is achieved. The major phases are:

- pre-transitional (a vertically integrated service structure);
- transitional (unbundled service provision);
- medium-term (limited retail competition); and
- long-term (full competitive generation and retail supply).

The Bureau of Public Enterprises, which is empowered to privatise state entities and assets, took critical steps towards the privatisation of the Power Holding Company of Nigeria (PHCN) by unbundling PHCN to 18 successor companies (six generation companies (gencos), one transmission company (transco) and 11 distribution companies (discos), resulting in private-sector participation in the generation sector and in the operation of a number of independent power plants in Nigeria.

The establishment of NERC was also part of the reform programme. NERC has commenced operations, prescribing regulations and licensing PHCN, existing private-sector operators, and new market entrants. This is a component of the medium-term phase. Overall, PHCN is still mostly responsible for the generation, transmission, distribution and sale of electricity to consumers in Nigeria.

A number of rules, regulations, codes, procedures and standards apply in the various aspects of the electricity industry. In addition to existing licence-related and consumer protection regulations, the Business Rules, Market Rules, Grid Code, Metering Code, Distribution Code and Metering Market Procedures all prescribe standards and procedures for operators in the industry. The Market Rules define the electricity trading arrangements for the wholesale electricity market; the Grid Code defines the rules for administration and operation of the transmission system, as well as technical procedures for the planning, coordination, supervision and operation of the system; and the Distribution Code is designed to facilitate efficient usage of electricity for all users of the distribution networks and competition in the generation and supply of electricity. The Metering Code is designed to ensure the financial viability of the electricity industry after unbundling by requiring a regime of modern, accurate meter systems with reliable communication facilities across the industry's production and supply chain to measure and record energy production and utilisation.

Companies to carry out the role of bulk trading in transition and liability management have been incorporated as Nigeria Bulk Electricity Trading Co plc (NBET, the bulk trader) and the Nigerian Electricity Liability Management Company (NELMCO).

Under the Water Resources Act 2004, the Minister of Water Resources is responsible for matters relating to water resources including some elements of electricity regulation for hydro-based projects.

The previous administration launched the Road Map for Power Sector Reform in 2010 (the Road Map) to fast-track the implementation of the EPSR Act. The Road Map seeks, inter alia, the strengthening of policies and institutions to attain the goals of the power sector reform, especially attracting private sector investment and efficient management, and achieving effective regulation of the sector. The Road Map is ambitious, aspiring to set up a comprehensive and realistic plan for resolving Nigeria's electric power crisis by identifying requirements to achieve stable power supply in the entire value chain from gas to generation, to transmission and distribution. The Road Map has set timelines for medium and long-term goals.

The previous administration set up the Presidential Action Committee on Power (the PACP) to establish policy and grant expedited approvals for critical decisions for the implementation arm of the PACP: the Presidential Task Force on Power (the PTFP). The PTFP supervises the day-to-day implementation of steps to restore confidence in and reform the power sector.

The announcement of the commencement of the Road Map's next crucial phase, the transitional electricity market stage for the commencement of a fully contracted electricity market mode under a robust commercial and technical regime, is currently on hold.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The first major step following the enactment of the EPSR Act was the formation of the initial successor company to NEPA: PHCN, a vertically integrated company continuing all the previous functions of NEPA. For PHCN (now defunct) to carry out its functions legally during the unbundling and sale period, it received an automatic licence for a period of 18 months. In September 2013, PHCN was unbundled into 18 successor companies as follows:

- six gencos, operating as private companies;
- one transco, the Transmission Company of Nigeria (TCN), currently wholly owned and managed by the federal government, was managed from 2012 to 2016 by Manitoba Hydro International under a concession agreement; and
- 11 discos, operating as private companies.

In addition to the six unbundled gencos are the IPPs, which currently account for an increasing portion of the market (28 IPPs have been licensed by NERC within the past three years). These IPPS have an estimated aggregate potential generation capacity of 10,200MW. During the transitional phase, a special purpose entity (SPE) created to act as a financial vehicle for stranded liabilities would also be involved in the generating subsector. NELMCO was established as the government's SPE to assume and manage extant assets, liabilities and other obligations that could not be easily transferred from PHCN to any of the successor companies, and provided investors with the confidence that they would not be responsible for unforeseen liabilities following PHCN's dissolution.

In addition, the market would be open to entry and trading arrangements, which would be based on contractual terms.

Given current forms of new generation technology and the price of gas in Nigeria, NERC determined that the lowest-cost new entrant generator is the open cycle gas turbine (OCGT) using natural gas. The OCGT form was selected because it was considered among the most efficient power plants and due to the availability of natural gas in Nigeria. All new entrants are expected to use an efficient technology benchmark for project evaluation and analysis.

In fulfilment of the requirements of EPSR for a trading licensee holding a bulk purchase and resale licence to 'engage in the purchase and resale of electrical power and ancillary services from independent power producers and from the successor generation companies', and in line with the Road Map, NBET was incorporated on 29 July 2010. NBET was established as a broker between the power producers and discos, and as a creditworthy counterparty to execute power purchase agreements (PPAs) for at least 5000MW, backed by World Bank partial risk guarantees (PRGs).

The Rural Electrification Agency (REA) is responsible for undertaking electrification of Nigeria's rural areas through both grid and off-grid modes of electrification. A substantive chief executive officer was appointed by the government after the introduction of the EPSR Act.

TCN assumes the role of a system and market operator and is responsible for the implementation of the Grid Code and the Market Rules, including custody and control of the existing national grid network. It is required to give economical despatch priority over commercial agreements. The gencos and discos enter into transmission use-of-system contracts with TCN for use of the transmission system. All end-consumers will buy from discos, which procure electricity from gencos, SPE and existing IPPs. SPE will sell energy to the discos at a uniform bulk supply tariff regulated and approved by NERC.

TCN is currently managed by the federal government following the expiration of its management contract with Manitoba in July 2016. Under the expired management contract with the federal government, Manitoba was to run the entire TCN operations, including market and system operations, and be responsible for the creation of a transmission investment fund in line with the Multi-Year Tariff Order (MYTO) projection of annual transmission investment. In addition to being responsible for the Grid Code and Market Rules, TCN also collects transmission use of systems (TUOS) from distribution companies as described below.

The Nigerian Electricity Supply Industry (NESI) is migrating from a vertically integrated monopoly based on command and control to a disaggregated industry based on arm's-length relationships as a way of promoting competition and choice for more efficient operation and service delivery. NERC is putting structures (such as the trading arrangement and the financial settlement system) in place to ensure properly defined interactions between market participants. These will guarantee the efficient and smooth functioning of the industry, as well as ensure viability and long-term sustainable development. The most important consideration in the choice of appropriate trading arrangement is choice of model (single buyer versus multiple buyers). The choice must take into account the realities of the NESI, and the need to promote competition in the medium term and beyond. In this light, NERC proposes a hybrid model trading arrangement for use during the transition stage of the NESI. The model, which combines elements of the single and multiple buyer models, has the following features:

- the purchasing entity, the bulk purchase and resale licensee NBET, buys power from IPPs that hold existing PPAs (eg, the oil majors AES, Shell and Agip);
- other power producers (the government, successor gencos and new IPPs) sell power directly to discos and eligible customers;
- NBET sells bulk power to discos and eligible customers; and
- offtakers (discos and eligible customers) purchase power from power producers and NELMCO.

NERC has also introduced vesting contracts as a regulatory tool in the market, which are agreements that impose a contractual obligation on electricity producers to produce a specified quantity of electricity at a specified price, with a similar obligation on off-takers to take the quantities at the specified price.

The counterparties to these contracts are electricity producers (such as successor gencos and IPPs) and offtakers (discos and eligible customers). In addition to providing NERC with an instrument for addressing the two problems of inadequate quantity and price-related risks, these contracts also act as tools for planning the development of a more competitive industry. The terms of vesting contracts are not as easily modified as those in typical bilateral contracts between parties; regulatory input in the process is always a mandatory requirement. It is envisaged that when the market is fully developed, vesting contracts will give way to bilateral arrangements between parties.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Generally speaking, the construction, ownership or operation of generation facilities requires a licence from NERC, issued pursuant to the EPSR Act. The only exception to this is in the case of captive generation. The Act defines captive generation as production of no more than 1MW with a distributive capacity of no more than 100kW for the exclusive use of the generator. NERC may issue generation licences to:

- successor companies formed under section 8 of the Act, designated therein as a successor generation company; or
- entities that are not successor companies, formed under section 8 and designated as an independent power producer.

This will be done upon application and payment of the requisite fees stipulated in the Nigerian Electricity Regulatory Commission (Licence and Operating Fees) Regulations 2010. Any such application shall be in the form prescribed in the NERC (Application for Licences: Generation Transmission, Systems Operations, Distribution and Trading) Regulations, 2010. The licence is for a maximum of 10 years and renewable for a further five-year term. In applying for a licence, a feasibility study of the viability of the venture is recommended. The application is evaluated by three divisions of NERC: the legal, engineering and market competition divisions.

Upon determination that all relevant information has been provided in an application, the following steps will be taken:

- the applicant will publish notices of application both in a local newspaper that is widely circulated in the area where the project is to be situated and in a newspaper with national circulation. This is to give members of the public the opportunity of raising any objections to the application;
- NERC will hold a hearing on any objection based on the published notice where it considers it necessary;
- NERC will then consider the application, taking into account submitted documents along with the proceedings of the hearing, and decide if the licence is to be granted or refused;
- if NERC intends to refuse the application, it will notify the applicant (in writing) of its intention to refuse, stating the grounds and giving the applicant an opportunity to make representations in the matter. If, after representations, NERC refuses the application, the applicant has the right to appeal against the decision; and
- if the application is granted, the applicant will pay the licence fee and is issued a licence.

There are separate regulatory requirements for captive generation. Licences for captive generation are governed by the Nigerian Electricity Regulatory Commission (Permits for Captive Generation) Regulations 2008.

In addition to the requirements under the EPSR Act, the Environmental Impact Assessment Act requires licensees to submit an environmental impact assessment report (EIAR) to the National Environmental Standards Regulatory and Enforcement Agency (NESREA). The EIAR shall give extensive consideration to the likely effect of any construction project on the environment. Another regulatory requirement is set out in the Factories Act, under which generating undertakings defined as factories are generally required to apply to the director of factories for registration within a month of commencement of business. Essentially, this Act is intended to protect all employees and other workers and professionals that are employed in factories and are exposed to possible occupational hazards.

A water licence from the Minister of Water Resources is required to undertake any hydro-electricity project. The diversion, storage, pumping or use on a commercial scale of any water is subject to regulations on the terms for such use and control by the Ministry of Water Resources. The National Inland Waterways Authority regulates inland waterways navigation, and issues a permit or licence for generation projects requiring water usage.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The overall power policy discourages vertical integration or licence cross-holding. This is essentially to secure a competitive market. Licensees are required to make their operations open to the execution of agreements with other operators for the provision of equipment to foster economic efficiency. Interconnectivity in the public interest is obligatory. There are also the ancillary requirements of operational transparency and the reference of disputes to NERC for arbitration, mediation and determination.

NERC has issued regulations regarding its business rules. These rules make it mandatory for NERC to conduct prior consultations or hearings before making any decisions that affect the rights or interests of licensees.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The EPSR Act does not make any distinction as to sources of energy or the priority to be accorded to any source. Most of Nigeria's electricity is derived from gas, thermal, and hydroelectric plants. Non-conventional or renewable energy is a key element in the overall strategy of the federal government. Beyond large hydropower, the current total contribution of renewable energy in Nigeria's electricity industry is about 35MW, composed of 30MW small hydropower and 5MW solar PV. This represents about 0.6 per cent of total nominal electricity generating capacity in the country. The federal government is making significant efforts to advance alternative and renewable energy initiatives. Some of the efforts include the work of the Nigerian Energy Commission and the Nuclear Power Regulatory Commission. Essentially, the development and deployment of renewable energy as a source of power in Nigeria can be described as a work in progress. It is anticipated that renewable energy will be complementary to electricity from traditional sources.

In 2005, the federal government adopted a detailed report outlining a 10-year Renewable Energy Policy Guideline and a proper action plan for executing the recommendations contained therein. The action plan was launched as the Renewable Energy Master Plan. A Renewable Electricity Action Programme was introduced in 2006. In 2006, the Ministry of Power published the Renewable Electricity Policy Guidelines. Regarding the generation of power, MYTO II (see question 12) specifically provides for renewable energy plants as an additional source of fuel to encourage investment.

Nigeria lies within a high sunshine belt and thus has enormous solar energy potential. The mean annual average of total solar radiation varies from about 3.5kWhm–2day-1 in the coastal latitudes to about 7kWhm–2day-1 along the semi-arid areas in the far north. On average, the country receives solar radiation at the level of about 19.8MJm–2day-1. Average sunshine hours are estimated at six hours per day. Solar radiation is fairly well distributed.

The minimum average is about 3.55kWhm–2day-1 for Katsina in January and 3.4kWhm–2day-1 for Calabar in August, and the maximum average is 8.0kWhm–2day-1 for Nguru in May. Given an average solar radiation level of about 5.5kWhm–2day-1, and the prevailing efficiencies of commercial solar-electric generators, if solar collectors or modules were used to cover 1 per cent of Nigeria's land area of 923,773 square kilometres, it would be possible to generate 1,850 x 103GWh of solar electricity per year. This is over one hundred times the current grid electricity consumption level in the country. Several pilot projects, surveys and studies are being undertaken by the Sokoto Energy Research Centre and the National Centre for Energy Research and Development.

Mapping of onshore wind resources was recently concluded, and the government has also commissioned a consultant to undertake an offshore wind resources study. The resource map shows that the country has a number of zones with viable wind speeds of up to 6.5 metres per second, which is suitable for the generation of electricity. Following this development, wind farms in the megawatt class are being planned for execution as pilot schemes all over the country.

In the past couple of years, the government completed its master plan on the utilisation of solar cooperation energy, fully financed by the

Japan International Cooperation Agency. The study has clearly articulated a long-term vision and action plan that would enable the nation to take maximum advantage of solar energy, thus creating a proper framework for private sector and community-led utilisation of solar energy. Hopefully, the medium-term projection of generating up to 5 per cent of the nation's power needs from renewable energy will be achieved through a combination of policy initiatives, investment incentives and regulatory direction.

In addition, the Nigerian National Petroleum Corporation (NNPC) has made significant strides in renewable energy initiatives. Its renewable energy programme was established to develop biofuel, ethanol and biodiesel. Through the recently established renewable energy division, the programme aims at achieving inter-sectoral links by producing these fuels in collaboration with the agricultural sector. This is expected to expand the country's energy base and create commercial opportunities for the NNPC through partnerships with the private sector, mostly in the form of joint ventures, and agencies with the requisite expertise, such as the country's various agricultural research institutes. The programme is expected to improve the agricultural sector's ability to create jobs in rural areas, maximise the country's carbon credits and attract grant funds to the NNPC, while creating an opportunity for earning foreign exchange for the country by exporting surplus products and freeing crude oil that would otherwise be used in the country. It is estimated that Nigeria will earn US$150 million annually from the biofuel initiative after it takes off.

Two kinds of alternative energy fuel will be produced under the NNPC plan: ethanol fuel and palm-oil diesel. Ethanol fuel will be derived from sugarcane and cassava. Palm-oil diesel will be derived from palm oil through a chemical process that removes glycerin, which is then mixed with any concentration of petroleum-based diesel to yield palm-oil diesel 'with little or no modification'.

The NNPC had launched feasibility studies and identified locations for plantations and plants in various zones of the country for the growth of the respective crops, with an aim to have at least two joint venture-operated plants running by 2009. The NNPC has memoranda of understanding in place with two Brazilian companies, Petrobras and Coimex, 'to leverage their experience and marketing respectively'. In February 2007, Nigeria revived talks with Venezuela's PDVSA for the transfer of technology for converting cassava to ethanol. Given that the clean development mechanism of the Kyoto Protocol obliges 15 rich countries to invest in green energy in developing countries and that Africa has largely missed out on these investments, the NNPC's renewable energy programme is set to attract grants to the NNPC.

The NNPC is already in partnership with Germany's Renewable Energy and Energy Efficiency Partnership. There is also considerable domestic interest in the NNPC's alternative fuels. The government has increased its focus on coal as a source of power, and put measures in place to explore the use of coal-powered plants by inaugurating a multi-sectoral committee. The coal deposits in Kogi and Enugu states will be utilised as primal resources for the coal-powered plants. Nigerian coal has been found to be suitable for boiler fuel, production of high calorific gas, domestic heating, briquettes, formed coke and the manufacture of a wide range of chemicals including waxes, resins, adhesives and dyes. Their characteristic properties (low sulphur and ash content and low thermoplastic properties) make these sub-bituminous coals ideal for coal-fired electric power plants.

In 2013, the European Commission announced its support for Nigeria's renewable energy policy. The newly launched Energising Access to Sustainable Energy programme aims to improve the enabling framework conditions for renewable energy and energy efficiency in Nigeria, and, in particular, with a focus on the use of renewable energies by small and medium-sized enterprises and households.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

A private bill is currently before the National Assembly proposing the establishment of a National Climate Change Commission (NCCC). The proposed NCCC is expected to undertake the implementation and national compliance with commitments under the United Nations Framework Convention on Climate Change, the Kyoto Protocol and the Marrakesh Accords.

However, the government's policy is still largely focused on increasing the installed capacity of grid electricity primarily through gas rather than any other source. In 2008, the government approved the Nigerian Gas Master Plan (the NGMP). The NGMP sets a domestic gas supply obligation with a view to utilising more of Nigeria's liquefied gas for domestic energy supply purposes. A vital recipient of the government's policy is the electricity industry.

As yet, there does not seem to be a concerted policy inculcating climate change needs on the sources of power generation, although as a matter of policy, issues regarding the environmental sustainability of capacity expansion plans are being advanced concurrently. One significant push is in the area of the reduction of private and household fuel-powered generated electricity that accounts for 17 per cent of all carbon emissions in Nigeria (second only to gas flaring).

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The Energy Commission of Nigeria (ECN) is responsible for strategic planning and coordination of national policies for the energy industry. The Energy Master Plan of 2003 in pertinent part focused on intensifying and promoting research and development activities in all areas of energy exploration, development and utilisation, including nuclear science and technology, and renewable energy. The draft National Energy Master Plan of 2014 also pays significant attention to research and development. An objective of the draft plan is to initiate and promote research and development activities that are applications-oriented and market-driven. The draft plan includes action plans for execution. In addition to the Master Plan, the ECN also enacted the National Renewable Energy and Energy Efficiency Policy (NREEEP) approved in April 2015. The dominant objective of the NREEEP is to promote the development of energy storage technologies and energy efficiency programmes.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The National Nuclear Power Road Map, which is a broad policy document for the development of nuclear power, has been developed and approved by the federal government. The government also recently introduced a policy document called the Technical Framework for the Deployment of Nuclear Power Plants for Electricity Generation in Nigeria. The technical framework is a three-phase plan aimed at positioning Nigeria to generate electricity from nuclear power plants in about 10 years' time. The phases include workforce training and infrastructure development; design certification, regulatory and licensing approvals; and construction and start-up. The Nigerian Atomic Energy Commission recently announced the selection of four sites across the country for the location of nuclear power plants. The target for commencement of operations is 2020. Also the commission is creating a programme that will address negative perceptions about nuclear energy among Nigerians.

A draft bill for the implementation of the National Nuclear Power Programme has been developed, with technical input from the International Atomic Energy Agency. Currently, procedures for the licensing of nuclear power facilities are being developed by the Nigerian Nuclear Regulatory Authority; a draft regulation for nuclear power plant site licensing has been developed and is being reviewed.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

The construction, ownership or operation of transmission facilities is feasible only upon acquiring the requisite regulatory consent and licence from NERC. In this regard, the EPSR Act prescribes single-firm participation. The only entity that qualifies for this licence is the

successor transco, which is also responsible for obtaining the systems operator licence. TCN currently performs the role of transmission service provider (TSP) (it constructs and maintains the grid infrastructure), system operator and market operator. TCN may require NESREA approval to expand its grid infrastructure.

The application for a transmission licence shall conform with NERC (Application for Licences: Generation Transmission, Systems Operations, Distribution and Trading) Regulations 2010 (the NERC Licence Regulations). Such licence is for a maximum length of 10 years and is renewable for a further five-year term.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Under the Grid Code, all the gencos and discos (users) are eligible to obtain transmission services from TCN. This is, however, subject to the basis of the operation, terms and conditions as specified under the Grid Code and any transmission use-of-system contracts with TCN for use of the transmission system.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

In July 2010, the government announced the award of a US$3.5 billion contract for the construction of a national super grid to address the power transmission challenges. The new 700kV SuperGrid, which should be completed in four years, is designed to transport electric power across vast distances, which the existing 330/132kV grid cannot do. The project will be funded as a federal asset, with additional financing from private investors and international finance and development agencies.

Upon completion, the SuperGrid, which will run along the same route as the existing 330/132kV grid, should address Nigeria's future energy challenges, including transition to more sustainable energy sources, reduction of power loss per transmitted megawatt and improving power voltage profiles across the country.

There are initial proposals by the government to support critical suppliers in the electricity chain either through direct credit enhancements or through PRGs. The government's current preference is for the World Bank to grant the PRGs.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

TCN prescribes the terms for the provision of transmission services. However, the rates for transmission services are prescribed by NERC. Pursuant to the EPSR Act, NERC is responsible for creating the relevant tariff methodology and ensuring that it accomplishes the following:

- full cost recovery, plus a reasonable return on investment;
- promotion of technology and market efficiency through incentives;
- fairness and openness to consumers; and
- reduction or elimination of cross-subsidies.

In 2012, NERC issued the MYTO for the determination of charges and tariffs for electricity generation, transmission and retail tariffs for the period running from 1 June 2012 to 31 May 2017 (the MYTO-2 Tariff Orders). This replaced the previously issued MYTO valid from 1 July 2008 to 30 June 2013. In 2015, NERC reviewed the MYTO for distribution to address the increase in gas prices and exchange rates and to amend the level of ATC&C losses components approved for Discos.

MYTO II for generation

Pricing

The principle adopted in the area of electricity generation is the long-run marginal cost method (LRMC). This is applied either by box costing (costing by proxy) or by individual LRMC. In addition, there is development of feed-in tariffs for investors in power generation to encourage investment in the power sector. The LRMC is benchmarked on the price of imported coal to encourage local production of coal for coal-fired power plants, which makes it cost effective.

PPAs

PPAs will have to be entered into by generating companies with the PHCN successors before they can contract with NBET for the generation of power. This would determine the pricing of the electricity to be distributed to the transmission and distribution companies.

Technical assumptions

MYTO II made some technical assumptions that generation price would be based on efficient new entrant life cycle costs. As a means of encouraging investment, NERC has allowed coal-fire plants, hydro plants and renewable energy plants as sources of fuel. The considerations to determine price have been reviewed by MYTO II to include a capacity factor of 65 per cent, a marginal loss factor of 8.05 per cent and heat rate/sent-out efficiency of 32 per cent. The construction period for a plant was reviewed from two to three years, with plant life projected to 20 years and plant availability at 95 per cent.

Generation and load projection

This was reviewed from the previous benchmarks of MYTO (which were not met, causing disequilibrium) to even higher but realistic goals for power generation from the national grid from 30,715MW for 2012 to much higher figures for subsequent years.

Economic and financial assumptions are similar to those below for MYTO II for transmission.

The assumptions include an inflation rate of 13 per cent and an exchange rate of the naira to the US dollar for the next five years, which is subject to a yearly increment of 1 per cent by the Central Bank of Nigeria (the CBN) and biannual review. The weighted average cost of capital was also assumed, with the variables being equally assumed by a standard formula. The variables include the risk-free rate, cost of debt, betas and gearing.

The asset valuation and depreciation method (based on the depreciated optimised replacement cost) also exists to determine the valuation and depreciation of assets to be used by the generation plants, which MYTO II also modified.

Generation tariffs for various other fuel sources are also set in MYTO II.

MYTO II for transmission

NERC has established a new transmission order, Multi-Year Tariff Order (MYTO) 2015 for the Transmission Company of Nigeria (TCN) for the period running from 1 January 2016 to 31 December 2024 (the tariff order).

Pricing

The New Order maintained the use of building blocks approach as a regulatory method to set TUOS charges. These building blocks are operation and maintenance, return on capital and depreciation. The Tariff Order introduces the TUOS charges to be paid by market participants to TCN. These charges are the regulatory charge, the system operation (SO) charge, market operation charge and payment for ancillary services.

The TUOS charge is paid for the administration, management and regulation of the electricity market. The charges are to be reviewed biannually, and a major review will be carried out in 2024. The minor review applies retroactively, taking into account changes (gains or losses) that occurred within the minor review period in adjusting TCN's tariffs biannually. There is also a connection charge, which is a one-off charge for new generators connecting to a transmission network, which varies according to the location of generators. Lastly, there is a loss factor called the marginal loss factor (MLF) for generation so that generators provide for transmission losses that may occur from year to year. The MLF is calculated by estimating the losses associated with injecting an additional or marginal unit of electrical energy at a particular point.

In addition to the pricing system, the federal government would also provide a form of subsidy for the tariff classes to reduce the burden of the cost on consumers, as well as act as an incentive to the distribution companies to encourage continued investment in Nigeria. The independent power plants are expected to contribute to infrastructure development by constructing transmission or spur lines if they are

further than 1 kilometre from the grid. The IPP can then recoup the construction cost separately from the generation tariff by deductions from the connection charge paid to the TCN. The building block approach previously existing for transmission was maintained in MYTO II.

Economic and financial assumptions

MYTO 2015 made a number of economic assumptions as the basis of the Tariff Order. The assumptions include an inflation rate of 8.76 per cent for the next five years subject to biannual review. The assumed exchange rate of the naira to the US dollar for the next five years is 198.97, which is subject to a yearly increment of 1 per cent by the CBN and biannual review. The Weighted Average Cost of Capital (WACC) assumed in the MYTO II Transmission order was also maintained which has variables being equally assumed by a standard formula. The asset valuation and depreciation method also exists to determine the valuation and depreciation of assets over time.

A transmission company can request the biannual review from NERC. NERC considers that a material change in the tariff would be plus or minus 5 per cent.

The effective date of MYTO 2015 for commencement was 1 February 2016. NERC now holds TCN accountable for service improvements in relation to annual projected generation capacity and service standards. These standards include:

- penalty on TCN for failure to deliver allocated energy to the discos due to TCN's Network constraints and where a disco does not take its allocation for any reason other than SO's instruction, the disco shall compensate TCN for attributable loss in revenue; and
- full Supervisory Control and Data Acquisition communication system in 12 months of tariff approval.

TCN is to submit annual for NERC's approval the following before the commencement of each financial year based on their capital expenditure budget:

- achieving specific service improvement objectives by locations in reliving immediate to long-term grid constraints;
- evidence of consultation with customer groups (discos and gencos) in developing TCN's investment plan and specific projects tailored towards addressing specific disco or genco needs;
- evidence of alignment of the investment plan with generation adequacy and planned load projections;
- justifications for cost estimates used in deriving the planned investment programme and relevant benchmarks against which the procurement plans can be evaluated;
- evidence of TCN's capability to raise the required financing to fund planned investment programme in a timely manner;
- evidence of TCN's procurement and project management capabilities to enable efficient delivery of planned investment programme and related penalties for delays in delivering of projects; and
- evidence that TCN's planned investment programme will not result in gold-plating or the creation of stranded assets in the network.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Responsibility for the reliability of the transmission grid lies with a single entity regarded as the system operator. Under the EPSR Act, TCN carries out the functions of the system operator. The Act also recognises that, when the electricity market is fully developed, it may be prudent that the system operator evolve into an independent body separate from TCN. In spite of this fusion of duties, TCN is required to obtain a systems operation licence from NERC that authorises it to carry out systems operations in the electricity market. See question 22.

Essentially, the Grid Code, which sets out the handling of the day-to-day operating procedures and principles regarding the transmission system, is implemented by TCN. Under the Grid Code, TCN functions are bifurcated regarding network and system operation activities.

First, as TSP, it shall:

- admit users in accordance with the Market Rules;
- evaluate and accept grid connections;
- ensure proper metering at all connection points; and
- obtain necessary information from users of transmission networks to enable it to perform adequate planning and development of the transmission network.

Secondly, as system operator, it shall:

- dispatch generating units in accordance with the Grid Code at least cost;
- procure ancillary services and recover the costs of ancillary services;
- handle power system emergencies and restore the power system;
- perform demand forecasting;
- coordinate generation and transmission outages;
- supervise compliance with, and enforce the Grid Code and Market Rules;
- test and monitor users' equipment to ensure standards;
- report planned or scheduled actions such as system maintenance or unexpected actions to NERC and users; and
- outline the procedure for conducting systems tests pertaining to the network.

NERC has issued a specific tariff order on transmission pricing that sets out TUOS charges, among other things.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Like the other segments of the electricity market, any company intending to construct a distribution network must obtain the requisite approval and licence from NERC. The applicable rules are contained in the NERC Licence Regulations. The licence is for a maximum period of 10 years and renewable for a further five-year term. The licence has the following obligations:

- connection of customers for the purpose of receiving supply of electricity;
- installation, maintenance and reading of meters;
- billing and connection; and
- where a licensee has a trading licence in addition to the distribution licence, the providing of electricity to its customers in accordance with the terms of the trading licence (the tenure of trading licences are similar to distribution licences).

Other relevant authorities and agencies include NESREA.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Access to the distribution grid is open and equal to all end-consumers and trading licensees. There is a congruent accessibility of supply granted to discos and IPPs. The Distribution Code sets out elaborate requirements regarding access. With respect to access on the distribution grid, the Distribution Code specifies elaborate rules and requirements split into the following segments:

- the Distribution Planning and Connection Code, containing technical and design criteria, procedures to be followed by the discos in planning and development of the distribution system, and connection conditions specifying the technical, design and operational criteria to be complied with by any user connected or seeking connection with the disco;
- the Distribution Operation Code, containing the day-to-day operating procedures and principles governing the development, operation and maintenance of effective, well-coordinated and functional distribution networks for the electricity sector in Nigeria;
- the Construction and Maintenance Code, containing guidelines for construction and maintenance of the distribution system; and
- the Data Registration Code, containing the schedule and templates for the data to be interchanged among discos and users.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

The emphases of the National Energy Policy 2003 as it relates to energy utilisation are to engage intensively in the development of electric power, and to promote private sector participation in the electricity subsector with the objective of attracting investment capital for development and providing electricity to all state capitals, local government headquarters and major towns by 2010. As part of the strategies, import duties on generation, transmission and distribution materials will be reduced, and appropriate incentives will be made available to entrepreneurs. While particular legislation creating incentives for investments in the sector is currently lacking, incentives under other laws are applicable.

Under the Industrial Development (Income Tax relief) Act, pioneer status incentives are granted to companies that qualify. The incentives include:

- a three-year tax holiday period with a possible extension for two additional years (usually a five-year tax holiday is granted ab initio);
- dividends distributed to shareholders out of pioneer profits are tax exempt;
- qualifying capital expenditure during the tax relief period is treated as having been incurred on the first day following the end of the period; and
- loss incurred during the tax relief period is treated also as having been incurred after the tax relief period and can be offset after the period.

By virtue of the Industrial Development (Additional List of Pioneer Industries) Notice No. SI 11, 2008, the list of pioneer industries was expanded to include Utility Services industry. The Notice specifically includes 'independent power generation utilising gas, coal and renewable energy sources' as a pioneer product.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

NERC determines the applicable rates or terms for the provision of distribution services. It is guided by MYTO (see question 12).

MYTO 2015 for distribution of electricity

There are major differences in the distribution of electricity in MYTO 2015 from MYTO II as each disco has its specific MYTO. Major changes include the reinstatement of the collection cost component of verified ATC&C loss value in end-user tariffs. The approved percentages differ among discos. MYTO 2015 is based on a 10-year tariff plan which allows discos to recover revenue within the 10-year period. Also, the fixed charge components of the tariff have been removed by rebalancing it to ensure a cost-reflective energy charge.

Further, on distribution, in MYTO 2015 there was an increase in the number of customer classes, from between 14 to 18 classes based on the metering capacity in the various discos. The processes for connection and disconnection of consumers are already contained in the Connection and Disconnection Procedures for Electricity Services 2007.

Economic and financial assumptions

MYTO 2015 made a number of economic assumptions as the basis of the Tariff Order, which are similar to those contained in the MYTO 2015 Order on Transmission. The assumptions include an inflation rate of 8.3 per cent and an exchange rate of the naira to the US dollar for the next five years, which is subject to a premium of 1 per cent above the CBN rate and biannual review; the WACC was also assumed, with the variables being equally assumed by a standard formula.

Generation capacity projections

These were revised from MYTO II to a higher percentage in MYTO 2015 for the period 2016–2017, even though the earlier projections of MYTO II were not met.

Allocation

The allocation of power distribution became necessary due to the inadequacy of generation and transmission. MYTO 2015 sets out a table for the efficient and equitable allocation of the distribution of power among consumers. The table acts as a fair, transparent and reasonable basis to ensure proper distribution of electricity by distribution companies. This protects the consumers from being at the mercy of distribution firms.

In exercise of the powers conferred upon it by section 32(1)(d) and (2)(c) of the Electric Power Sector Reform Act, and of all other powers enabling it in that respect, NERC issued a notice of the proposed establishment of a methodology for estimated billing and connection fees, and modalities for disclosure of information from the distribution companies to customers. This seeks to ensure that power distribution companies carry out proper checks on the meters of consumers and calculate fees based on the actual amount of money spent or at least an accurate estimate of the actual power used by consumers. Furthermore, the methodologies used by distribution companies for estimating customers' usages are to be approved by NERC. In addition, NERC recently ordered that distribution companies stop the mass disconnection of electricity supply to communities, villages, local government areas and estates premised on purported non-payment of electricity bills.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Sale of electricity is subject to a trading licence issued by NERC. This may be in accordance with conditions as NERC deems appropriate. There is also a temporary bulk purchase and resale licence. It empowers the licensee to purchase electrical power and ancillary services from IPPs and gencos for the purpose of resale to other licensees or eligible customers. NERC grants such approval.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

See questions 12 and 17 on MYTO. Retail tariffs reflect the costs of the whole supply chain for the NESI, from generation and transmission, distribution metering and to billing to the final consumer.

Retailing costs are brought into the building blocks framework as ongoing operation and administration costs and added to the costs of distribution companies to provide an overall cost of distribution or retailing. The capital expenditure and operation and maintenance allowance included in the tariff calculation includes an allowance for additional meters and improvements in metering, billing, revenue collection and human capacity building. As a consequence, the tariff calculation also includes rates of losses that reduce each year of the tariff order.

End-trading of power is also subject to the applicable rules under the Nigerian Electricity Regulatory Commission's Meter Reading, Cash Collections and Credit Management for Electricity Supplies Regulations 2007.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

See question 17.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Although there are no express requirements in the EPSR Act for trading licensees to observe public service considerations, this forms an essential part of all licences issued by NERC. In addition, NERC has by its rule-making authority promulgated a consumer bill of rights known as Customer Complaints Handling: Standards and Procedure. Also NERC issued a public notice informing customers of their rights in order to ensure quality service delivery.

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

Prior to the power reforms and enactment of the EPSR Act, the Federal Ministry of Power and Steel served as a regulator of the power sector. Pursuant to part 111 of the EPSR Act, NERC is established as an independent regulator over the power sector and is vested with authority to interpret and implement the national policy for the sector. The Ministry's role is now restricted to general overall government policy direction. TCN's role is significant, but limited to monitoring and ensuring observance of the Grid Code and Market Rules. TCN is also a licensee of NERC and subject to its regulatory oversight. The discos also administer the Distribution Code.

23 Scope of authority

What is the scope of each regulator's authority?

The EPSR Act gives NERC broad powers to carry out its regulatory functions and only subjects its decisions and processes to the Minister of Power in very limited circumstances. These powers include:

- creating, promoting and monitoring market structures;
- securing optimal capacity utilisation;
- ensuring adequate access and supply;
- establishing and promoting competition;
- determining tariffs and ensuring fairness to both operators and consumers;
- monitoring safety, security, reliability and quality of service; and
- making relevant reports to the necessary arms of government.

NERC also has an important role in handling consumer complaints and disputes, where it acts in a quasi-judicial capacity.

TCN implements the Grid Code and the Market Rules, which include scheduling, commitment, dispatch, coordination and congestion management; payment settlement; and capacity planning and procurement.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

NERC was established by the EPSR Act as a body corporate with perpetual succession and a common seal. Structurally, NERC has a chair and vice chair appointed from among seven commissioners. NERC has six divisions, each headed by a commissioner:

- legal support and licensing;
- engineering, safety and standards;
- market competition and rates;
- finance and support services;
- government and consumer affairs; and
- research and development.

The terms of the commissioners, like those of NERC, are statutory and not subject to intervention by the government. NERC's independence appears inviolate as a matter of law.

The system operator shall operate under a licence granted by NERC.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Where any question of law arises from a decision or order of NERC, it may, on its own initiative or upon the request of any person affected by the decision, refer the question of law to the Federal High Court. This shall be stated in the form of a special case and filed with the registrar of the Federal High Court.

In addition, any person aggrieved by a decision of NERC may seek additional review before the Commission in the first instance. There is judicial review of final decisions of NERC by the Federal High Court, and additional appellate rights from the Federal High Court in the normal course of judicial review under the Constitution to the Court of Appeal and, ultimately, the Supreme Court.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

There is more than one agency that would ordinarily receive a merger referral or notice. Under the recently enacted Investments and Securities Act 2007 (ISA), approval must be sought from the Securities and Exchange Commission (SEC) for intermediate and large mergers, determined by an intermittent threshold valuation. For small mergers, notification is voluntary. In addition, under the EPSR Act, any affiliation, merger, acquisition or arrangement that contemplates or involves the transfer or ownership of interest in or by a company that is a licensee of NERC must first be approved by NERC in writing. The EPSR Act is particularly attentive to cross-holdings or ownership among licensees and mandates applicants for licences to disclose interest in any other licensee where such holding meets the minimum statutory threshold (currently 10 per cent).

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Under ISA, a party to a medium-size or large merger is required to notify SEC of that merger in a prescribed form. In the case of a medium-size or large merger, the primary acquiring company and the primary target company shall each provide a copy of the notice to the following persons: the registered trade union that represents a majority of the employees of that company and the employees concerned where there are no trade unions. The time lines for notification regarding small and medium-sized mergers are similar.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

Until the Competition Bill is passed into law, NERC is solely responsible for enforcing competition in the electricity sector. It has the specific responsibility of ensuring that abuse of market power is prevented or mitigated. The EPSR Act grants robust and extensive enforcement authority to NERC to discharge this function. In the event that the anticompetitive behaviour satisfies the elements of a financial crime, it may become subject to investigation and prosecution by the Economic and Financial Crimes Commission.

With respect to mergers and other business combinations, ISA grants SEC certain responsibilities in averting and punishing anticompetitive conduct.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Under the EPSR Act, the basic test to determine anticompetitive conduct is considered in the context of market power, exclusivity, tying (the practice of making the sale of one service or good conditional on the purchase of a second distinctive service or good) or disparate treatment. Major indicators are:

- the ability of a seller or group of sellers to maintain prices above a competitive level; and
- the ability to maintain stable prices while reducing the quality of product or service provided for a significant period.

Under ISA, whenever required to consider a merger, SEC initially determines whether the merger is likely to substantially prevent or lessen competition by evaluating some relevant factors. These include the

Update and trends

NERC has recently made amendments to relevant regulations to accommodate and promote investment in renewable energy sector. NERC plans to include an attractive renewable energy feed-in tariff and a regulation that ensures local electricity distribution companies (discos) source up to 50 per cent of their power from renewable sources. Another adjustment is the long-term cost recovery cycle, which would serve as an incentive for investors. In this light, the NERC passed a regulation in December 2015 to regulate the feed-in tariff for renewable energy. This regulation targets at least 1,000 megawatts (MW) of electricity from renewables by 2018, and has also allotted respective volumes of renewable energy procurement to Ikeja, Ibadan, Eko, Kaduna and Kano discos.

In addition, NERC enacted the Regulations on the National Content Development for the Power Sector 2014. Nigerian content is the quantum of composite value added to or created in the Nigerian economy by systematic development of capacity and capabilities through the deliberate utilisation of Nigerian human and material resources and services in the Nigerian Electricity Supply Industry. All licensees are required to have the development of Nigerian content as a key component in their philosophy. The Act requires that all licensees give first consideration to qualified Nigerian companies for the supply of goods and works, and for the provision of services.

In 2015, NERC also passed the Nigerian Electricity Regulatory Commission (NERC) Regulations for the Investment in Electricity Networks which stipulates the procedure for investing in electricity networks in Nigeria. The objective of the Regulations is to create strong incentives to encourage TCN and the discos to make appropriate and sustainable investments in capacity expansion. NERC also enacted the Nigerian Electricity Supply and Installation Standards Regulations in 2015 to regulate engineering designs, installations, commissioning and maintenance of electric power systems in the Nigerian Electricity supply industry.

strength of competition in the relevant market and the probability that the emerging company after the merger will behave competitively in that market. Other factors are:

- the actual and potential level of import competition in the market;
- the ease of entry into the market, including tariff and regulatory barriers;
- the level or trend of concentration and history of collusion in the market;
- the degree of countervailing power in the market;
- the dynamic characteristics of the market, including growth, innovation and product differentiation;
- the nature and extent of vertical integration in the market;
- whether the business or part of the business of a party to the merger or proposed merger has failed or is likely to fail; and
- whether the merger will result in the removal of an effective competitor.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

NERC has the authority to do any of the following in respect of mitigating or preventing anticompetitive conduct:

- investigate or request information from the licensees;
- undertake inquiries; and
- establish or contract with an independent entity to provide monitoring services.

In addition, it can issue cease-and-desist orders to discontinue certain behaviour, impose penalties, levy fines and make any other orders consistent with discharging its role as the regulator.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies. On the contrary, there are several incentives for foreign direct investment in the electricity sector.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

To construct and operate interconnectors, a transmission licence is required under the Act. A transmission licensee is authorised to carry on the construction, operation and maintenance of transmission grids or interconnectors. NERC has enacted regulations governing the application procedure, documentation, fees and requirements in the Application for License (Generation, Transmission, System Operations, Distribution and Trading) Regulation.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

The members of the Economic Community of West African States (ECOWAS) committed themselves in 1999 to set up a regional electricity market calledWest African Power Pool. This framework of exchanges aims to promote the realisation of regional investments, both in terms of energy production and of interconnection and grid systems. It also aims to set up a general regulatory framework for regional energy exchanges. ECOWAS comprises the sovereign states of Benin, Burkina Faso, Gambia, Ghana, Guinea, Guinea-Bissau, the Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal and Togo. Individually, each country has peculiarity in the reforms of the electricity subsector, and hence the operators and institutions vary widely. As electricity exchanges take place across boundaries, there are also multinational companies involved in the process of service provision, as well as ownership of infrastructure.

The implementation of a regional energy market was solidified by a number of arrangements agreed upon by the ECOWAS member states:

- the definition of a general institutional and legislative framework by the ECOWAS Energy Protocol, which entered into force in 2006 after ratification by nine member states;
- the adoption of a master plan for the development of power energy generation facilities and the interconnection of the member states' electricity grids (the first programme was adopted in 1999 and revised in 2005);
- the development of a regional regulatory framework for the regional power sector prior to the establishment of a regional regulatory body;
- setting-up of the WAPP secretariat as a specialised institution of ECOWAS and adoption of its articles of agreements; and
- the creation of an organising authority for the realisation of the West African Gas Pipeline (WAGP) project (February 2003).

To realise the ideals of the above decisions, the organisation of the sector is such that the following institutions are in place:

- the WAPP, with an information and coordination centre, now operational;
- the regional regulatory body (now being established);
- the WAGP with an operator, WAPCo, and a regulator, WAGPA; and
- the WAPP Information and Coordination Centre took over the former ECOWAS Energy Observatory and serves as an information, monitoring and early-warning system on the state of the energy sectors in the region.

Since 1999, the interconnection between member states has made remarkable progress, leading to two interconnected subsystems of three and seven countries respectively. The current organisation of the market is based on heterogeneous subgroups as follows:

- The Burkina Faso–Ghana–Ivory Coast–Togo–Benin–Nigeria–Niger subgroup consists of five power subsystems managed by separate

companies (SONABEL, CIE, VRA, CEB, PHCN and Nigelec) that have bilateral contracts between them and a wheeling contract to enable effective exchanges between CEB and CIE. The exchanges on the Côte d'Ivoire–Benin axis foresee storage possibilities by using hydropower storage capacity. Each country is an owner and controls its own national system. The Nigeria–Benin link was commissioned in February 2007 and there are plans to develop a wheeling power from Nigeria to Ghana.

- The Organisation de Mise en Valeur du Fleuve Sénégal operates a common power system (hydroelectric dam and transmission line) interconnecting the three member countries (Mali, Mauritania and Senegal) and serves mainly to share output from the hydroelectric station.

The rest of the member states are on standalone electricity grids. The planning horizon of 2007 to 2011 contemplated the strengthening and upkeep of the transmission network, the starting of additional national markets and further progress in the opening up of cross-border transactions. It is expected that the introduction and articulation of competition between 2012 and 2016 will further establish the regional market. In May 2016, the WAPP signed a grant agreement to support the Nigeria–Benin Interconnector Reinforcement Project. This project will ensure stable integration of the national electricity networks in the ECOWAS region and facilitate the accessibility to economic energy resources to all member states of the region.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Under the EPSR Act, all licensees are obliged to obtain the written consent of NERC with respect to any affiliation with any other licensee.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

NERC enforces the restrictions. Sanctions for non-compliance range from monetary penalties to prohibition orders, or ultimately to the withdrawal of a licence.

SIMMONSCOOPER PARTNERS

Babatunde Irukera **tunde.irukera@scp-law.com**
Ikem Isiekwena **ikem.isiekwena@scp-law.com**

9th Floor, Fortune Towers
27/29 Adeyemo Alakija Street
Victoria Island
Lagos
Nigeria

Tel: +234 1 461 4017
Fax: +234 1 461 4018
www.scp-law.com

Panama

Erika Villarreal Z, José A Brenes and Ixalondra Chee Chong
Anzola Robles & Asociados

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

In 1998 Panama restructured its electricity sector. A year later, the state-owned electricity entity (IRHE), which controlled the generation, transmission and distribution of electricity in Panama, was privatised. As part of the restructuring process, the state invited private investment participation in the areas of generation and distribution, but retained full control of the transmission infrastructure and services. The state also created a regulatory entity to supervise the operation of the sector. Policymaking authorities for the electricity sector were assigned to the National Secretariat of Energy, a quasi-executive cabinet office created in 2006.

The legal framework of the electricity sector comprises:

- Law No. 6 of 3 February 1997, as amended, that created the regulatory and institutional framework for the electricity market and the rules for generating, transmitting and distributing electricity (Law 6);
- Law No. 26 of 29 January 1996, as amended, that created the regulatory entity, the National Authority of Public Services (ASEP); and
- Executive-Decree No. 279 of 14 November 2006, and Law 43 of 25 April 2011 as amended, that created and reorganised the National Secretariat of Energy, an office under the aegis of the executive branch responsible for designing and implementing the government's policies and strategies for the electricity and oil and gas sectors.

ASEP supervises the electricity market and primarily:

- issues concessions, licences and other authorisations to generation companies (generators) and distribution companies (discos);
- develops rules and principles for generating, transmitting, distributing and selling electricity; and
- ensures sector compliance.

In 2012, the government implemented changes to the electricity market system (the New Rules) aimed at reducing electricity rates for consumers and increasing generation capacity – primarily with the installation of renewable energy projects, or projects that will diversify the local generation matrix, at present divided almost evenly into hydro and thermo generation plants.

The New Rules introduced changes to Law 6 and to part of ASEP's regulatory framework. In particular, ASEP amended the Commercial Rules that regulate the wholesale market and the Purchasing Rules that regulate mandatory competitive auctions to purchase capacity and energy from generators (auctions) and Law 6 by allowing special auctions:

- based on the type of technology of the generator;
- for new projects only; or
- based on other special characteristics.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Panama has organised its electricity sector into three main areas: generation, distribution and transmission.

Generation

Generators must enter the market through a concession or a licence granted by ASEP. Hydro and geothermal generators must obtain a concession. All other technologies must obtain a licence. Generators can sell their power through:

- power purchase agreements (PPAs) that are subscribed with discos after being awarded through auctions;
- PPAs freely negotiated with other generators or large unregulated consumers (LUCs). An LUC is a consumer that exceeds 100kW per month and can purchase its power directly from generators, discos or the large consumer basket (LCB);
- the LCB, a collection of all electricity requirements from LUCs managed by the state-owned transmission company (ETESA); or
- the spot market.

After the privatisation process of 1998, the state has retained a non-controlling participation in four hydro generators, and full control of a thermal/solar generator.

Distribution

Discos must operate under a concession granted by ASEP. Discos operate by selling power to regulated consumers and LUCs. In Panama, there are three discos that must keep open access to their grids for all generators and LUCs, subject only to payment of tolls and connection charges. Discos participate in the National Interconnected System (NIS). The NIS requires discos to enter into PPAs to supply 100 per cent of their estimated maximum regulated demand. After the privatisation process of 1998, the state has retained a non-controlling participation in the three discos operating in Panama.

Transmission

ETESA owns all transmission assets as well as the concession for transmission of electricity throughout Panama. ETESA is also responsible for the NIS. In 2005, ASEP granted another transmission concession to Empresa Propietaria de la Red (EPR). EPR is a company incorporated under the laws of Panama to interconnect the Central American electricity market pursuant to the tenets of the Central American Electrical Interconnection System (SIEPAC) treaty. Interconexión Eléctrica Colombia-Panama (IECA), a company incorporated under the laws of Panama to interconnect the Panamanian and Colombian electricity markets, has also requested a transmission concession to ASEP. ETESA has 12.5 per cent ownership in EPR and 50 per cent ownership in IECA.

Only discos licensed by ASEP may advertise the provision of electricity to consumers. Any other intermediary is forbidden from buying and reselling electricity to consumers. The exceptions are generators that market and sell electricity to LUCs.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

According to Law 6, generation facilities may operate under a concession or a licence issued by ASEP.

Concession

ASEP awards concessions after completing an auction process. When ASEP identifies a possible hydro or geothermal project or a third party requests a concession, ASEP must start an auction process to allow all interested parties to participate. After completing the auction process, ASEP awards the concession to the candidate with the highest bid and for a period that may not exceed 50 years. After expiry, the concession may be renewed once for another 50-year term.

Licence

A generator requires a licence to construct and exploit any generation plant other than those subject to a concession regime. Applicants must file a licence request with ASEP. If the licence application is approved, ASEP will issue the licence for a maximum term of 40 years. After expiry, the licence may be renewed for another 40-year term.

Companies competing for a concession or applying for a licence must also have an environmental impact study of the project duly approved by the Ministry of Environment (MoE), a Water Concession issued by the MoE, for hydro projects, an interconnection approval from ETESA and must also have successfully completed a test run of the plant directed by the National Dispatch Centre (CND). This is a division within ETESA that plans, supervises and controls the integrated operation of the NIS and ensures the NIS's safe, integrated and reliable operation.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Law 6 promotes a policy of free access to the NIS. Access to the NIS requires each generator to subscribe to a transmission contract with ETESA. The transmission contract will govern the relationship between the generator and ETESA and affords the generator the right to connect to the transmission grid and facilities owned and operated by ETESA for a fee.

Connection to the NIS requires the generator to accept and comply with NIS Operating Rules and the Technical Service Quality Rules, including all system fees charged by ETESA, which are set and vary according to the area.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Approximately 61 per cent of electricity in Panama is generated by hydroelectric plants. Some of these plants were built before 1997, when the electricity sector was still owned and operated exclusively by the state, and in the absence of any special incentives. Rather, their construction was predicated on a government policy directed at using water resources that are abundant almost year round and that are not subject to cost surges or variations.

After 1998, when the government designed and implemented a privatisation programme for the electricity sector, private capital played a leading role in the development and construction of new thermoelectric plants. Though the electricity sector underwent significant legislative changes in 1997 and 1998, very few provisions dealt with or encouraged the development and use of renewable generation sources. Among those few was a provision of Law 6 that concedes a 5 per cent price differential over the price offered in auctions by generators that use a renewable and alternative energy source.

The first integrated and notable effort to promote generation of clean and renewable energy came to life with the adoption of Law No. 45 of 2004 (Law No. 45). Law No. 45 and its regulations target hydro, wind, biofuel and solar energy development. Law No. 45 is primarily a tax-laden body of benefits that exempts generators from:

- import tax, custom duties, fees, contributions, encumbrances, VAT on the importation of equipment, machinery, materials, spare parts, as well as on the tools and equipment to construct, operate and maintain a generation plant; and
- up to 25 per cent of income tax for new project developments or for increasing the generation capacity of an extant plant. The amount of income tax that may be credited will be measured by the amount of carbon dioxide emissions that are reduced annually. The income tax benefit is effective for the first 10 years, counted from the time the project commences commercial operations.

In 2011, the government approved Law 44 of 5 April 2011 (Law 44), as regulated, which creates special auctions for wind generators only, as well as tax exemptions for all wind generation companies, as follows:

- import tax, custom duties, fees, contributions, encumbrances, VAT on the importation of equipment, machinery, materials, spare parts, as well as on the tools and equipment to construct, operate and maintain a wind generation plant. This exemption also applies when importing wind generation equipment to be sold in Panama; and
- 15 years of exemption from all national taxes to companies manufacturing equipment in Panama for wind generation plants.

Owing to these incentives and government policies allowing for specific auctions for wind power PPAs, wind projects now account for 4.1 per cent of energy generation.

Also in 2011, the government approved Law 42 of 20 April 2011 (Law 42) that establishes the national bio fuels policy, regulates the biomass-based energy generation, and grants fiscal credits to companies that purchase bio ethanol and bio diesel made with local products.

In 2012, the government approved Law 43 of 9 August 2012 that amends Law 6 and creates special auctions:

- based on the type of technology;
- for future projects only; or
- based on special characteristics that respond to the government's energy policy.

The government also approved Law 41 of 2 August 2012 (Law 41) that:

- promotes the development of generation projects using natural gas; and
- creates the following tax exemptions for projects using natural gas:
  - exemption of import tax regarding equipment and spare parts to construct, operate and maintain a power plant using natural gas; and
  - application of the accelerated depreciation method to the equipment of power plants using natural gas.

The government also approved Law 37 of 10 June 2013 (Law 37), which establishes incentives for the construction, operation and maintenance of solar power generation plants. Law 37 creates the following tax exemptions for companies involved in the construction, operation or maintenance of solar power generation plants:

- import tax, custom duties, VAT on the importation of equipment, machinery, materials, spare parts, tools and equipment to construct, operate and maintain a solar power generation plant;
- tax credit up to 5 per cent applicable to income tax in connection with the total direct investment on solar power generation plants already built or under construction; and
- application of an accelerated depreciation method to the equipment of power plants using solar energy.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

As outlined in the preceding question, Law 6, Law No. 45, Law 44, Law 42, Law 41 and Law 37 make up the entire body of legislative efforts aimed at promoting electricity generation from renewable and alternative sources.

Despite these initiatives, energy consumption levels have not experienced a significant variation, with a new single-day consumption record set at 1,618MW of capacity on April 2016. Current generation capacity in Panama stands at 2,783.21MW.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

No. The Panamanian government has not issued rules supporting electricity storage, or research and development of storage solutions.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

No. Panama has not implemented provisions or measures to encourage or discourage development of nuclear power plants. There are no nuclear power plants in operation in Panama at present.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

In Panama, ETESA, a government-owned and run entity, has full ownership and management of the NIS. Only ETESA can operate the national transmission network.

As mentioned in question 2, and as part of SIEPAC, ASEP granted a transmission concession to EPR to develop, operate and maintain a transmission line that will interconnect Central America. ETESA owns 12.5 per cent of the shares in EPR.

Similarly, on 1 August 2008, the Panamanian government signed a Memorandum of Understanding with Colombia to develop the technical and regulatory framework that will govern electrical interconnection between both countries. ETESA and the transmission company of Colombia, Interconexión Electrica SA (ISA), formed IECA to develop the Panama–Colombia interconnection project. Both countries meet periodically to complete the programme to design and construct the interconnection project. In 2012, Panama and Colombia agreed on, and approved, the operation rules and dispatch rules that will regulate the exchanges of energy between both countries. Panama and Colombia scheduled the auction to assign the economic rights of the transmission line for June 2012; however, the said auction was cancelled and a new date has not been set yet. In July 2014, the government announced that Panama was going to continue with the interconnection project with Colombia; and that the interconnection project will transport up to 400MW, reducing the capacity of the line from 600MW as originally envisaged. In September 2015, Panama and Colombia commenced environmental consultations and reviews in connection with the interconnection project; and set June 2016 as the deadline to solve all environmental matters. However, IECA put in a request to ASEP, and ASEP authorised the extension of the term to solve the environmental matters until September 2018.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Law 6 provides for open access to the transmission grid subject only to the payment of a connection fee and a use fee to ETESA. To connect to the transmission grid, the applicant must file a request with ETESA.

The request must include:

- a technical description of the interconnection structure;
- the estimated start-up date;
- how much energy the applicant expects to use or generate for the four-year period following interconnection;
- a technical report on the effect of the new interconnection over the transmission grid; and
- the applicable environmental study.

Generators and discos must comply with Transmission Regulations and pay a tariff that covers interconnection and transmission charges. ASEP formulates the criteria to set and adjust the transmission tariffs.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

As mentioned in question 9, the transmission grid is currently controlled by ETESA, a company wholly owned by the government; hence, the expansion of the transmission grid rests primarily on government development plans and sponsorship.

The Transmission Regulations adopted by ASEP in 2009 as amended, requires ETESA to elaborate a plan for the expansion of the NIS. The expansion plan needs the approval of the National Secretariat of Energy. In March 2016, ASEP approved the latest plan filed by ETESA.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

ASEP is the authority that fixes the terms and rates for the provision of transmission services. Resolution No. JD-5216 of 14 April 2005 as amended, adopted the extant transmission regulations.

Transmission regulations that, among other principles, set the current transmission rates will remain in force until 30 June 2017. Rates associated with the access and use of transmission lines must cover the investment, operation and maintenance costs of the NIS and allow for reasonable profit. ASEP has defined as reasonable profit a profit that does not differ by more than two points from the annual interest rate of a US Treasury 30-year bond, plus a seven-point business-risk premium. Rates must also attend the foreseeable growth in transmission traffic, and ensure the reliable, continuous and outstanding development of the NIS. Recently, the government rejected a proposal to change the concept of reasonable profit and reduce it to a profit that does not differ by more than two points from the annual interest rate of a US Treasury 30-year bond, plus a five-point business-risk premium.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

ETESA is the entity that controls the transmission grid. The CND, as explained in question 3, is a unit of ETESA, responsible for planning, supervising and managing the NIS and for ensuring its safe, integrated and reliable operation. Generators must comply with the transmission schedules set by the CND. Generators may only deviate from transmission schedules in cases of unforeseeable maintenance or repair work to transmission lines or interconnection units or when there is an event of clear and conclusive force majeure. The CND may request authorisation to ASEP for the compulsory disconnection of any generator or disco that does not comply with CND guidelines.

The Planning Unit, an administrative department within ETESA, is responsible for researching, studying and forecasting the power requirements of the entire country. The Planning Unit is also responsible for recommending options and alternatives to satisfy such power requirements, including the development of alternative sources of energy and for designing and implementing programmes to conserve and optimise the use of energy.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

To construct and operate a distribution network, a company must apply for a distribution concession. ASEP grants concessions to distribute

electricity and the Comptroller General must approve said concessions. ASEP can grant distribution concessions for a maximum of 15 years.

Further, as outlined in question 3, companies applying for any concession, including a distribution concession, must have an environmental impact study duly approved by the MoE.

In February 2013 ASEP published the terms of reference for the auction of 51 per cent of the shares of the discos. On 9 August 2013 only the current owners of the shares filed proposals. Through Resolution AN No. 6457-Elec, ASEP awarded the auction to the current holder of the shares of the existing distribution companies. The current distribution concessions will expire in October 2028.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Law 6 requires discos to provide open access to the distribution grid. Access to the grid is governed by the applicable laws, regulations and resolutions of ASEP and by an agreement subscribed to by the discos.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Yes. Every four years, ASEP approves a tariff regime prepared by discos that includes, the investment that discos estimate will make to maintain and expand the distribution grid, provide public lighting services, and meet energy supply needs that clients may have, including rural electrification in certain areas of the country. This provides, with efficient costs, the basis to determine the tariffs that discos charge to regulated customers.

ASEP also includes in the tariff regime certain expansion projects that must be executed by discos and included as part of its tariffs. If discos do not execute said projects, ASEP may fine them, and reduce the distribution tariffs that discos charge to their clients in the following tariff period.

And finally, Law 6 and concession contracts require discos to provide service and extend the grid to serve clients that are within 100 meters of existing distribution infrastructure.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Resolution No. JD-5863 of 2006, as amended, sets the terms for the distribution and sale of electricity. Said resolution also provides the formula used to determine distribution rates. The government issued new procedures to determine rates applicable for the distribution and commercialisation of electricity for the period 2014–2018.

Discos must submit to ASEP a list of rates that are applicable to regulated consumers and the rates charged for the use of distribution networks. ASEP must approve those rates. When approving the proposed rates, ASEP considers the real costs of the service and the area of distribution.

Discos must obtain long-term contracts to cover 100 per cent of the capacity and power requirements of their regulated consumer base.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

As outlined in question 3, all generators require either a concession or a licence issued by ASEP, to build and operate a generation facility.

After obtaining a concession or licence, generators can participate in the wholesale market in Panama by selling their output through:

- PPAs. PPAs must be awarded through auctions summoned and presided over by ETESA. ETESA establishes reference prices for each auction and generators compete for the long-term or short-term contract on the basis of capacity and prices. ETESA awards the PPA to the bidders offering the lowest monomic price. Monomic price is defined as the combination of the prices for energy and capacity, expressed in terms of dollars per MW. Once ETESA selects the winning bid, ASEP must approve the selection. The auction process is completed with the subscription of a PPA between the disco and the generator that submits the lowest conforming bid. As indicated in question 5, ETESA can organise special auctions based on the type of technology;
- PPAs freely negotiated with other generators;
- PPAS freely negotiated with LUCs. According to the New Rules, Generators may also sell capacity and energy to LUCs using the LCB. The LCB is an auction system that promotes a basket of energy from generators to LUCs managed by ETESA; or
- the spot market, on an hourly basis. The spot market allows generators to sell to discos, LUCs, other generators and foreign markets. The New Rules only allow generators to sell into the spot market if the generators have complied with their obligations to participate in all auctions called by ASEP to purchase and sell power or energy, with their available capacity. On Septermber 2015, ASEP amended the formula to calculate the price of energy in the spot market. The new formula establishes that the price of energy in the spot market will be calculated based on the last generator called to dispatch energy, without considering the fuel source or any security restrictions.

As discussed in question 2, discos require a concession issued by ASEP to operate and to sell power to consumers. Additionally, discos must subscribe long-term PPAs to cover 100 per cent of the capacity and energy requirements of regulated consumers.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

In Panama, ASEP has the authority to enact and amend the rules that govern power sales from generators to the wholesale market. The CND is responsible for implementing these rules. Said rules set the market criteria for the exchange and sale of power, including the criteria for setting tariffs. These rules and tariff criteria are reviewed every four years.

Tariffs charged by discos to final consumers are classified according to consumption and voltage. Discos must set tariffs based on a formula fixed by ASEP that allows for a reasonable return on investment after distribution costs are covered. Accepted distribution costs are management, operation and maintenance expenses, as well as standard losses and the depreciation that an efficient disco would incur within the respective concession area.

Tariffs to final consumers at present include a fuel differential subsidy that is paid by the government to discos to compensate for higher fuel prices.

Other requirements regarding power sales are outlined in question 16.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Question 18 outlines the options that generators have to sell power. The applicable rates will be contingent on the particular option, as follows:

- competitive PPAs – the rates in PPAs are the result of the auction. ETESA formulates reference prices for each auction and generators compete for the long-term or short-term PPAs on the basis of capacity and prices;
- PPAs with other generators or LUCs – rates in these PPAs are freely negotiated between the parties;
- the spot market – the CND calculates the price with the marginal cost of short-term generation; and
- LCB – ETESA calculates power rates in the LCB from the average of all the power offered by generators and each generator's price. The total average will be the power rate in the LCB. After ETESA calculates the price for the LCB, the LUC can decide if they will purchase electricity from the LCB or if they prefer to purchase directly from discos or generators.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Electricity is considered a public service obligation in Panama. Extant legislation provides that power generation, transmission, distribution and commercialisation of electricity must satisfy basic collective needs on a permanent basis. However, Panama's electricity regulatory system also considers financial viability and free competition as basic elements of the electricity market.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The National Secretariat of Energy is the authority that sets and oversees policy within the electricity sector. Similarly, ASEP develops rules and principles applicable to the electricity sector.

23 Scope of authority

What is the scope of each regulator's authority?

The following entities have authority over the Panamanian electricity market:

- the National Secretariat of Energy, primarily responsible for setting policy and developing electricity sector strategy and planning, supervising and ensuring policy compliance, and recommending sector legislation to the legislative branch and to ASEP;
- ASEP is the market regulator and enforcement agent. ASEP is primarily entrusted with issuing concessions, licences and other authorisations to generators and discos; developing rules and principles for the generation, transmission, distribution and sale of electricity; and ensuring sector compliance;
- the CND, a department of the state-owned transmission company ETESA, which is responsible for planning, supervising and controlling the integrated operation of the NIS and managing the wholesale electricity market;
- ETESA, a government-owned entity that publishes, prepares and oversees auctions and evaluates and adjudicates PPAs following ASEP regulations;
- the ETESA Planning Unit, an administrative unit of ETESA, which prepares the national electricity plan and the national reference expansion plan; and
- the MoE, the environmental authority that approves environmental impact studies for generators and discos, grants water concessions for certain electricity projects, and ensures compliance with environmental rules in the electricity market.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

Market regulators in Panama are:

- the National Secretariat of Energy – Law 43 of 5 April 2011, reorganised the National Secretariat of Energy. It is a quasi-cabinet office connected and answerable to the executive branch. It has indirect connection to the regulated business, since the National Secretariat of Energy has power to advise and suggest changes and regulations to ASEP and to the National Assembly. The President appoints the Secretary presiding over the National Secretariat of Energy;
- ASEP – Law No. 26 of 29 January 1996, as amended, created ASEP as an independent entity, to regulate and oversee the electricity market, the telecommunications market and the water sector. Though the executive branch appoints the regulator, its appointment requires the approval of the legislative branch. However, from 1997, when ASEP was created, each government elected to serve a five-year term on the executive branch has enjoyed concurrent majority and control of the legislative branch, limiting the amount of independence that ASEP was intended to have from the executive branch;
- CND and ETESA – as explained in question 3, the CND is a unit of ETESA, which is the state-owned transmission company. As a state-owned entity, the CND and ETESA answer to the executive branch and the National Secretariat of Energy; and
- the MoE – Law 41 of 1998 created the National Environmental Authority as an independent government entity; it was amended by Law 8 of 2015, which reorganised ANAM into the MoE. The MoE is not under the supervision of ASEP or the Secretary of Energy. It is a ministry that is part of the executive branch, with its minister being appointed by the President.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

ASEP is presided over by its administrator. ASEP also has three directors – one for the electricity and water sector, another for the telecoms, radio and television sectors and one for customer service – who oversee their respective areas and are answerable to the administrator. Any decision issued by an ASEP officer may be challenged through two administrative recourses: reconsideration and appeal. Both proceedings must be filed and resolved within ASEP as follows:

- resolutions of any of ASEP's directors may be challenged by filing a reconsideration request with the specific director or an appeal with the administrator, or both; and
- resolutions issued by the administrator of ASEP may be challenged by filing a reconsideration request with the administrator.

All the foregoing reconsiderations or appeals may be challenged further by filing an extraordinary recourse with the Third Chamber of the Supreme Court.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The Antitrust and Consumer Protection Authority (ACODECO) has the authority to approve or block mergers, changes in control, or acquisition of assets involving the electricity sector. It may also block a merger while in progress or after it has been completed if considered against Law 45 of 31 October 2007 governing antitrust and consumer protection (Law 45).

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

In Panama, parties intending to engage in a transaction may voluntarily submit it to ACODECO for prior verification.

Depending on the complexity of the case, ACODECO may take up to 60 days to review the transaction and issue its opinion. If the 60-day period has lapsed without ACODECO's pronunciation, the proposed merger or acquisition may be completed.

Similarly, ACODECO has the authority to initiate an investigation within three years of the occurrence of any economic concentration. ACODECO may decide to oppose the economic concentration by filing a court claim seeking a partial or total suspension of the merger or acquisition and may also request the court to suspend the effects of the transaction until the case is solved by means of a precautionary measure.

Update and trends

In March 2016, the Panamanian government issued the National Energy Plan for 2015–2050, after the National Secretariat of Energy held public hearings to discuss the plan with interested parties and market participants. The plan, among other things, sets guidelines to promote new power generation sources and renewable and alternative energy sources; and reduce pollution caused by the use of hydrocarbons and hydrocarbon by-products in energy production.

In July 2016, ASEP eliminated a 500kW cap on clients who want to meet their energy requirements with renewable energy generators.

In August 2016, the government enacted Law 38, which clarifies that the tax exemptions included in Law 37 are not exclusive for construction companies but all individuals or companies acquiring equipment to construct, operate or maintain a solar power generation plant.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

ACODECO is the institution with authority to prevent and prosecute anticompetitive practices. Antitrust cases are tried before commercial courts.

However, Law 6 entitles ASEP to prevent potential anticompetitive practices within the electricity sector. Accordingly, ASEP has discretion to issue directives and regulations to maintain fair competition within the electricity sector. Nonetheless, ASEP must seek the opinion of ACODECO before adopting or issuing any antitrust or discriminatory directives or regulations. ASEP may also commence antitrust investigations by notifying ACODECO of any violations, and may assist ACODECO when investigating and verifying anticompetitive practices within the electricity sector.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Law No. 45 forbids any act, contract or practice that may limit, diminish, damage, obstruct or harm competition and the free market in the production, processing, distribution, supply and commercialisation of goods and services.

Similarly, Law 6 empowers ASEP to intervene whenever it finds an abusive dominant position in the market that causes harm to regulated consumers or to any agents within the electricity market.

Law 6 also expressly outlines four types of antitrust behaviour:

- vertical or horizontal concentrations carried out in generation or distribution activities, causing the reduction or obstruction of competition and free concurrency of electricity market agents;
- any event or transaction that diminishes, affects or obstructs competition and the free market, such as company mergers, direct or indirect acquisition of control in another company or companies, acquisition of assets from any company carrying out activities in the electricity sector, or any other legal mechanism used to concentrate corporations, associations, shares or assets in general, between competitors, suppliers, clients, shareholders or any other economic agent;
- any event that hampers an LUC from negotiating a PPA; and
- any attempt at price fixing between generators and discos or among them.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

As outlined in question 28, ACODECO has the authority to prevent, prosecute and penalise anticompetitive practices. ACODECO may commence independent administrative proceedings or initiate an administrative review following a third-party request. Accordingly, ACODECO has the authority to impose administrative fines of up to US$1 million if ACODECO finds that consumer rights or antitrust laws have been breached.

ACODECO may also file claims in the courts of commerce to prevent or remedy economic concentrations, antitrust practices and violations of individual or collective consumer rights.

Consumers may also access commercial courts to seek redress for antitrust transgressions or to suspend antitrust practices. Commercial courts may in turn suspend any transaction or practice that may violate the rights of consumers and antitrust laws, impose precautionary measures, or award financial compensation and remedies to affected consumers.

Consumers may also seek retribution in criminal court, by filing a criminal complaint. The Attorney General's Office can also independently start criminal inquiries. Successful criminal actions for anticompetitive and manipulative practices may result in imprisonment of one to six years in the case of antitrust violations; and imprisonment of up to 18 months for unfair violations of competition laws.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There is no special requirement or limitation in the electricity sector for foreign companies in Panama. Law 6 establishes that local or foreign private companies, or companies of combined public and private capital, may participate in the electricity sector.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

As mentioned in question 9, the transmission grid is currently controlled by ETESA, and its obligations include the construction and operation of interconnectors. However, market participants, such as generators and discos can construct and operate interconnection assets to the national grid. According to Resolution 1244 of 10 February 1999 (Resolution 1244), market participants interested in constructing and operating local interconnectors require a transmission concession issued by ASEP. ASEP requires the following to issue a transmission concession: A request document with (i) a map showing the location and technical characteristics of the project; (ii) an NIS diagram; (iii) a list of generators in the market with their main characteristics; (iv) copy of PPAs subscribed by the electricity market participants; (v) description of constituted and required easements for the project; and (vi) the certification issued by MoE approving the project.

Once ASEP receives the transmission concession request, ASEP will prepare an auction, and publish the terms of reference of the auction in two national newspapers, for 30 calendar days. Interested bidders are only able to file their proposals during the publication period. If ASEP does not receive an offer from another bidder, ASEP will grant the transmission concession to the company that initially filed the transmission concession request. However, if ASEP receives an offer from one or more bidders, ASEP will grant the transmission concession to the bidder that filed the best offer.

The auction process does not only apply to transmission companies operating before the issuance of the Resolution 1244, or construction companies that are in charge of constructing the transmission line or substations on behalf of ETESA.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Cross-border electricity can be supplied via the NIS or any cross-border transmission networks through PPAs with foreign generators or discos, subject to ASEP's rules and regulations, or through short-term transfers undertaken by ETESA.

Any generator may export capacity, energy or both if it has available capacity or energy that has not been committed to other agents

and if the CND does not require its capacity, energy or both for the local market.

International electricity transfers are exempted from all import and export taxes or fees.

The electricity system in Panama is interconnected with Central America, through SIEPAC. SIEPAC became fully operative in September 2015. As mentioned in question 9, Panama and Colombia are planning and developing an interconnection line between both countries.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Law 6 imposes certain limits on vertical and horizontal ownership within the electricity sector. These limitations are as follows:

- generators and their shareholders cannot participate, directly or indirectly, in the control of discos and cannot request new concessions if, by obtaining such concessions, they would account, directly or indirectly, for more than 25 per cent of the electric power consumption in the national market. The executive branch, with the prior favourable opinion of ASEP, may increase said percentage when it considers that such an increase is necessary based on market conditions; and
- discos and their shareholders cannot directly or indirectly control generators when the aggregate generation capacity of the respective disco exceeds 15 per cent of total demand within its respective concession area and cannot request new concessions if, on doing so, they would serve, directly or indirectly, more than 50 per cent of the total number of customers in the national market. The executive branch, with the prior favourable opinion of ASEP, may increase said percentage if it considers it necessary to allow the expansion of the zone of influence or the expansion of the electricity system as a whole.

However, the following exceptions apply:

- if the same company can generate, transmit and distribute if the company operates within an independent system. Law 6 defines independent systems as those that have a demand that does not exceed 50MW and, in the case of discos, a generation capacity that does not exceed 15 per cent of total generation within the distribution concession area;
- for co-generators and auto-generators that sell within the NIS; and
- for generators that sell their power directly to any LUCs.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

ASEP has oversight and ACODECO has enforcement authority over generators or discos that fail to comply with the vertical and horizontal ownership restrictions listed in question 34.

Whenever a transaction or a company oversteps antitrust or consumer protection laws, ACODECO has sole enforcement authority either through administrative court proceedings or commercial and criminal court proceedings, as outlined in question 30.

AR&A
ANZOLA ROBLES & ASOCIADOS
ABOGADOS | ATTORNEYS

Erika Villarreal Z **evillarreal@anzolaw.net**
José A Brenes **jbrenes@anzolaw.net**
Ixalondra Chee Chong **ichee@anzolaw.net**

Credicorp Bank Plaza, 26th Floor
Nicanor de Obarrio Ave
50th Street
PO Box 0832-2325
Panama

Tel: +507 2 63 0003 / +507 2 63 4224
Fax: +507 2 63 0006 / +507 2 63 4194
www.anzolaw.net

Philippines

Patricia AO Bunye
Cruz Marcelo & Tenefrancia

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

The government policy and legislative framework for the electricity sector are embodied in, among other laws, the Department of Energy Act of 1992 (Republic Act No. 7638), the Electric Power Industry Reform Act of 2001 (Republic Act No. 9136 or the EPIRA) and the Renewable Energy Act of 2008 (Republic Act No. 9513), as well as in executive orders issued by the President of the Philippines. Such laws, in turn, are implemented through rules and regulations and other administrative issuances of the Department of Energy (DOE) and the Energy Regulatory Commission (ERC).

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The Philippine power industry is divided into four major sectors: generation, transmission, distribution, and supply. Generation used to be a monopoly of the National Power Corporation (NPC) until the issuance of Executive Order No. 215, which opened the generation sector to private investors. At present, a number of independent power producers (IPP) generate and sell electricity to the NPC and other customers.

Pursuant to the EPIRA, the electrical transmission functions of the NPC have been assumed by the National Transmission Corporation (TRANSCO), a corporation previously wholly owned by the Power Sector Assets and Liabilities Management Corporation, a government-owned and controlled corporation that has taken ownership of all existing NPC generation assets, liabilities, IPP contracts, real estate and all other disposable assets. In 2009, TRANSCO was privatised and taken over by the National Grid Corporation of the Philippines (NGCP). TRANSCO, however, remains the owner of the transmission assets.

Distribution of electricity at its usable voltage to end consumers is performed by investor-owned electric distribution utilities, notably the Manila Electric Company (Meralco), a few local government-owned utilities and numerous electric cooperatives that sell to households, as well as commercial and industrial enterprises located within their franchise areas at retail rates regulated by the ERC.

The supply of electricity to end users in the contestable market requires a licence from the ERC, except for the supply of electricity by distribution utilities within their franchise areas and persons authorised to supply electricity within their respective economic zones. A contestable market refers to electricity end users who have a choice of a supplier of electricity, as may be determined by the ERC in accordance with the EPIRA.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

A generation company refers to a person or entity authorised by the ERC to operate facilities used in the generation of electricity. To engage in the generation of electricity as a new generation company, one must obtain a certificate of compliance (COC) from the ERC before actual commercial operations to operate facilities for the production of electricity (generation facilities). To secure a COC, a new generation company must submit documentary evidence that it is authorised to conduct business in the Philippines. Thus, it must be registered as such with the Securities and Exchange Commission.

A COC issued in favour of the owner or operator of the generation facilities shall include all the generation units situated in one contiguous area, which are in operation at the time of issuance. For modular generating facilities located in a contiguous area, one COC shall be issued for each generating unit. Further, only a single COC shall be issued in favour of a generation company owning a power barge even if it consists of several generating units. However, for generation facilities consisting of several generating units that are installed and commissioned on different dates within a span of 24 months, individual COCs shall in the meantime be issued for each generating unit. A consolidated COC shall then be issued after inspection of the last generating unit of the generation facility.

A generation company operating a renewable energy plant eligible to access the feed-in-tariff system shall indicate in its COC application its intention to operate under the feed-in-tariff system. This generation company shall be allowed to operate and be entitled to payment of the feed-in-tariff only upon the issuance of a COC explicitly indicating feed-in-tariff eligibility (FIT-eligible COC). A FIT-eligible COC may only be issued upon the issuance of the appropriate certificate of endorsement for feed-in-tariff eligibility by the DOE.

Pending the approval of the COC application, no generation company shall operate its generation facility unless a provisional authority to operate (PAO) is issued by the ERC. The PAO shall be issued in the form of a notification to the applicant and shall be valid for a period of six months from issuance thereof. The six-month validity period shall be included in the five-year term of the COC that may be issued by the ERC for such generation facilities.

It is also required to comply with the technical, financial and environmental standards specified in the Rules and Regulations to Implement the EPIRA (EPIRA IRR). It is likewise required to comply with, among other regulations, the following provisions of the EPIRA IRR:

- rule 9, section 4, on membership criteria in the Wholesale Electricity Spot Market (WESM);
- rule 11 on cross-ownership, market abuse and anticompetitive behaviour; and
- rule 29 on benefits to host communities.

Furthermore, constructing a generation facility, which is an infrastructure project, requires an environmental compliance certificate (ECC) from the Department of Environment and Natural Resources (DENR). Moreover, depending on the local government unit where the generation facility will be constructed, there are licences that are required to be secured from the local government having jurisdiction over the area where the generation facility will be constructed. Finally, depending on whether the generation facility is located within the ancestral domain of indigenous cultural communities or indigenous peoples, a certification precondition or certificate of non-overlap as issued by the National Commission on Indigenous Peoples is required.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The Philippine Grid Code (PGC), issued by the ERC, establishes and documents the basic rules, requirements, procedures and standards that govern the operation, maintenance and development of the high-voltage backbone transmission system in the Philippines (grid). It identifies the obligations of three key independent functional groups: the grid owner, system operator, and market operator. These functional groups and all users of the grid must comply with all the provisions of the PGC. The PGC is intended to be used along with the market rules of the WESM to ensure the safe, reliable and efficient operation of the grid.

The PGC specifies, among other matters, the minimum technical, design and operational criteria and the procedures to be complied with by any person or entity that uses the grid and its related facilities (user) who is connected or seeking connection to the grid and the minimum technical, design and operational criteria of the grid owner at the connection site with users. It also presents a unified listing of all the data required by the system operator from users and by users from the grid owner.

The PGC also established a Grid Management Committee (GMC), which is the mechanism through which the industry participants and end users may participate in the decision and policymaking as regards the operation, maintenance and development of the grid.

Meanwhile, other responsibilities of the Transmission Provider and the functions of the System Operator are found in the Revised Rules, Terms and Conditions for the provision of Open Access Transmission Service (OATS Rules). The OATS Rules are based on the EPIRA IRR, the PGC and the WESM Rules.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Yes; the Renewable Energy Act of 2008 provides for general incentives for developers of renewable energy, such as:

- income tax holiday;
- duty-free importation of machinery, equipment and material actually, directly and exclusively used in renewable energy facilities;
- special realty tax rates on equipment and machinery;
- application of net operating loss carry-over;
- reduced corporate tax rate;
- adoption of accelerated depreciation system for tax purposes;
- zero per cent value added tax (VAT) rate;
- cash incentive to renewable energy developers for missionary electrification;
- tax exemption of carbon credits;
- tax credit on domestic capital equipment and services; and
- tax rebates and exemption from the universal charge.

Aside from these tax incentives, the Renewable Energy Act of 2008 also mandates the adoption of the feed-in tariff system for electricity produced from wind, solar, ocean, run-of-river hydropower and biomass. Such a system ensures a steady return of investment to producers in the form of a fixed tariff to be paid to renewable energy developers on a fixed rate per kilowatt hour for a given period, which should not be less than 12 years. This is pursuant to the Renewable Portfolio Standards policy of the law which requires electric power industry participants to source an agreed portion of their energy supply from eligible renewable energy resources. The Renewable Energy Act of 2008 also establishes a net-metering programme, which refers to a system, appropriate for distributed generation, in which a distribution grid user has a two-way connection to the grid, is only charged for his or her net electricity consumption and is credited for any overall contribution to the electricity grid. It also provides for a green energy option whereby end users can choose renewable energy resources as their source of energy.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

The Philippines has enacted two major laws, the Renewable Energy Act of 2008 and the Climate Change Act of 2009 (Republic Act No. 9729,). The former promotes the use of solar, hydro, geothermal, wind, biomass and ocean energy as sources of electricity in the country to reduce dependence on fossil fuels, while the latter focuses on establishing a framework strategy on climate change and integrating it in all government policies, plans and programmes. However, owing to the feed-in tariff system provided for under the Renewable Energy Act of 2008, the cost to consumers is expected to remain high. The ERC approved on 27 July 2012 the initial feed-in tariffs for renewable energy sources, specifically, run-of-river hydro, biomass, solar and wind power. On 30 April 2014, the DOE issued a Certification to increase the installation target for solar energy generation under the feed-in tariff system from 50MW to 500MW. Due to the increased installation target, the ERC approved Resolution No. 063, Series of 2015, lowering the feed-in-tariff rate from 9.68 pesos/kWh to 8.69 pesos/kWh for operational solar power producers after the first 50MW have been reached. With respect to wind power, the initial installation target of 200MW was also increased to 400MW on 7 April 2015 by the DOE, which was due to a finding that the total capacity of wind power plants built and commissioned during the year 2015 already exceeded the said initial installation target. Thus, the ERC approved Resolution No. 14, Series of 2015, lowering the feed-in-tariff rate from 8.53 pesos/kWh to 7.40 pesos/kWh and resolved that three wind power projects for a total of 144MW are entitled to the lower rate. The feed-in tariff for ocean thermal energy conversion resources, however, has been deferred for further study and data gathering.

On 26 February 2016, Republic Act No. 10745 lapsed into law. It amended the Biofuels Act of 2006 (Republic Act No. 9367) by allowing natural gas power generating plants to use neat diesel as an alternative fuel in case of shortage of natural gas supplies.

Several bills have been filed and are currently pending in the 17th Congress (25 July 2016–2019), with the common goal of initiating and promoting the use and development of renewable energy resources. For instance, a bill promoting the reduction of electricity rates through the utilisation of the government share in the discovery and development of indigenous sources of energy for the purpose of lowering the cost of electricity was filed on 26 July 2016 and is now pending with the Committee on Energy. Other recently filed bills include bills institutionalising energy efficiency and conservation and granting incentives to energy efficiency and conservation projects, a bill requiring all government and non-government offices and establishments to adopt policies for energy conservation, and a bill requiring the use of energy-efficient lighting products. Bills proposing the creation of a Philippine Solar Initiative Commission and the establishment of a Solar Energy Development Authority were re-filed in the 17th Congress and have been pending since 1 August 2016.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

On 18 May 2015, the ERC adopted the GMC's recommendation of classifying the Battery Energy Storage System (BESS) as a new source of Frequency Control Ancillary Services. The ERC further resolved to exempt BESS from the conduct of the System Impact Study (SIS), subject to the recommended siting and capacities for Luzon, Visayas and Mindanao grids and provided that the capacity of the BESS will not exceed the required frequency regulating reserve in a particular location. However, the exemption of the BESS from the conduct of the SIS was without prejudice to the required performance tests to be conducted by the NGCP.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The Philippine government has not adopted a clear policy with respect to the creation, development, and operation of nuclear power plants in the country after former president Corazon C Aquino ordered the closure of the Bataan Nuclear Power Plant in 1986 for safety reasons. In 2009, the DOE, together with the Department of Science and Technology, created a joint task force to study the feasibility of utilising nuclear energy as an alternative source of electric power. The draft of the Philippine Medium Term Development Plan for 2011–2016 provides for the formulation of a nuclear power programme. President Rodrigo R Duterte has expressed interest in reviving the Bataan Nuclear Power Plant in light of the growing power crisis in the Philippines, particularly in Mindanao.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

No person or entity other than the NGCP is authorised to construct or operate transmission networks in the Philippines. The exclusive right to operate, manage and maintain, including the right to construct, install, finance, manage, improve, expand, operate, maintain, rehabilitate, repair and refurbish the present nationwide transmission system of the Philippines was granted to the NGCP by virtue of a legislative franchise. The same franchise prohibits the transfer or lease of the right to construct or operate the Philippine transmission system to any other person or entity.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Any user seeking connection to the grid is eligible, provided they comply with the requirements. The PGC states that a new connection to the grid requires a connection agreement with the grid owner prior to actual connection to the grid. The connection agreement functions to establish the asset boundary, define the responsibilities at the asset boundary, contain the provision on applicable charges, and allow the transmission customer to remain connected in order to continually avail of the services. The new user also needs to secure from the grid owner a five-year statement of the Transmission Development Plan (TDP). Moreover, the OATS Rules provides for the responsibilities accepted by transmission customers as a condition of receiving transmission service.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Currently, the government does not provide for any incentives encouraging the expansion of the grid.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The ERC determines power transmission rates. It regulates the NGCP, the sole transmission service provider, under performance-based ratemaking (PBR), a form of utility regulation that strengthens the financial incentives to lower rates or lower costs. The ERC can use revenue cap, price cap or hybrid cap. The PBR methodology is outlined in the Rules for Setting Transmission Wheeling Rates.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The NGCP acts as the system operator of the nationwide electrical transmission and sub-transmission system. It shall provide open and non-discriminatory access to its system to all electricity users and ensure and maintain the reliability, adequacy, security, stability and integrity of the Grid in accordance with the standards set in the PGC and the Distribution Code. The NGCP shall improve and expand its transmission facilities, consistent with the TDP and the PGC. Lastly, it shall provide Central Dispatch to all generation facilities and loads connected to the transmission system in accordance with the dispatch schedule submitted by the market operator.

The NGCP's function as the Transmission Service Provider involves the transmission of electricity in response to system and market demands as follows:

- from generator connection points to distribution network connection points and the direct connection points of a number of large end users; and
- between the three major regions of the Philippines, namely Luzon, Visayas and Mindanao, thereby increasing reliability and reducing the overall cost of generation nationally.

For business management purposes, the NGCP's obligations can be grouped into six key service areas described as follows:

- system operations: managing the national power grid, dispatching generation and managing the system, including the arrangement for ancillary services;
- network reliability: providing the appropriate levels of network reliability in accordance with the reliability requirements set forth in the PGC;
- connection service: the NGCP's obligations, primarily to customers and prospective customers (for example, generators, distributors and large end users) to provide effective, timely and efficient connection services, including metering and relevant services;
- safety: the NGCP's obligations, primarily to its stakeholders (for example, staff, other electricity industry employees and the community) to deliver its services with appropriate priority given to human safety;
- environmental: the NGCP's obligations, primarily to its stakeholders (for example, the community and government) to deliver services in an environmentally responsible manner; and
- the WESM: the NGCP's obligations in relation to the operation and development of the electricity market, by way of the provision of efficient and effective transmission services.

In addition, the NGCP continues to operate a significant set of sub-transmission services from high-voltage delivery points to end users. These sub-transmission assets have been offered for sale to the distribution utilities in compliance with the requirement of the EPIRA.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

The distribution of electricity to end users is a regulated common carrier business requiring a national franchise. Distribution of electric power to all end users may be undertaken by private distribution utilities, electric cooperatives, local government units presently undertaking this function, and other duly authorised entities, subject to regulation by the ERC. The power to grant franchises to persons engaged in the transmission and distribution of electricity is vested exclusively in the Congress of the Philippines. A Certificate of Public Convenience and Necessity is subsequently issued by the ERC.

To construct a distribution network, the distribution utility will have to apply for approval with the ERC and secure the necessary permits from the appropriate local government units, the ECC from the DENR and the permit by the Department of Public Works and Highways for the excavation or roadworks on national highways. Electricity cooperatives are electricity distribution utilities organised either as non-stock,

non-profit cooperatives or stock cooperatives. The former is governed by the National Electrification Administration Decree (Presidential Decree No. 269, Series of 1973, as amended) and the latter by the Philippine Cooperative Code (Republic Act No. 6938, as amended). Regardless of type, the National Electrification Administration (NEA) shall have the authority over the electricity cooperatives to require submission of reportorial requirements as may be necessary relative to their operations as electricity distribution utilities.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

End users, distribution utilities, or generators, including retail electricity suppliers applying on behalf of an end user in the Contestable Market, may apply for a connection to the distribution system.

An applicant for a connection to, or for modification to an existing connection with, a distribution utility should secure a connection agreement with the distribution utility in accordance with the Amended Distribution Services and Open Access Rules and the Distribution Code. If the applicant is not the owner of the premises whose energy supply is sought to be connected or modified, he or she is required to submit an undertaking from the owner of the premises that the said owner is jointly and severally liable with the applicant for any unpaid regular monthly bills incurred by the applicant, but not exceeding two months. However, the undertaking is not required if the owner of the premises is a mass housing developer and the subject housing unit is covered by a contract to sell and is part of the inventory of the said developer whereby the consumer-buyer is still amortising the same. Further, users seeking connection to the distribution system or modification of an existing connection shall ensure that their equipment can operate reliably and safely within the limits specified by the ERC.

Consistent with the policy of non-discrimination, the distribution utility has to process all requests involving connections in a timely manner and cannot give preference or discriminate between different connection customers or connection applicants, subject to any reasonable or justifiable exceptions as may be approved by the ERC. If the applicant is an end user in a captive market, the distribution utility has the obligation to serve that customer subject to the execution of a standard form of agreement and compliance with relevant ERC issuances. The distribution utility may disapprove an application for connection or a modification of an existing connection to the distribution system if it is determined through the distribution impact studies that the proposed connection or modification will result in the degradation of the distribution system.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

The EPIRA created the Small Power Utilities Group (SPUG), which is a functional unit of the NPC in pursuance of its missionary electrification function. The SPUG is responsible for providing power generation and its associated power delivery systems in areas that are not connected to the transmission system. The sources of funds for the missionary electrification function of the SPUG are the revenues from sales in the missionary areas and from the Universal Charge to be collected from all electricity end users as determined by the ERC. The SPUG may also source funds from appropriations from Congress, the utilisation of private capital, multilateral aids or grants, Official Development Assistance Funds and others.

Expansion of the distribution network is likewise encouraged by the benefits accorded to electricity cooperatives. Electricity cooperatives registered with the Cooperative Development Authority are entitled to congressional allocations, grants, subsidiaries and other financial assistance for rural electrification which can be coursed through the DOE, the Cooperative Development Authority and/or local government units. Further, electricity cooperatives can avail of the financial services and technical assistance provided by the government financial institutions and technical development agencies on terms respecting their independence as autonomous cooperatives. The Philippine Cooperative Code of 2008 provides that duly registered cooperatives under the same Code, which do not transact any business with non-members or the general public, are exempt from any taxes and fees imposed under the internal revenue laws and other tax laws. Cooperatives that transact with non-members may also be exempt, depending on whether their accumulated reserves and undivided net savings are not more than 10 million Philippine pesos.

The National Electrification Administration Reform Act of 2013 (Republic Act No. 10531) grants incentives to electric cooperatives which comply with the standards set by the NEA, namely: (i) entitlement to congressional allocations, grants subsidies and other financial assistance for rural electrification; (ii) to receive all subsidies, grants and other assistance which shall form part of the donated capital and fund of electric cooperatives, and such shall not be sold, traded or divided into share holdings at any time; and (iii) to avail of preferential rights granted to cooperatives under the Local Government Code of 1991 (Republic Act No. 7160).

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The ERC determines distribution service rates. Every distribution utility is strictly governed in its charges by the schedule of rates prescribed by the ERC and cannot alter or in any manner modify the same without prior authority of the ERC.

The Distribution Wheeling Charge is the cost or charge regulated by the ERC for the use of a distribution system and the utilisation of related services. The Rules for Setting Distribution Wheeling Rates set a price cap for each regulated entity to allow them to recover efficient expenditures only and provide an appropriate return to investors in the regulated distribution systems. In addition, built-in incentives exist to further improve the efficiency of operating and capital expenditures, as well as network and service performance levels that are expected to result in lower electricity rates in the long term. The price cap is computed by considering several factors such as the previous year's price per unit of electricity, the performance incentive factor, the index of change in consumer prices, the correction for revenue over or under recovery in the previous year, the efficiency factor, which imputes efficiencies in both operating and capital expenses, and the correction for taxes over or under recovery in the previous year.

On 17 July 2013, the ERC passed Resolution No. 14, Series of 2013, entitled A Resolution Adopting a Pro-Forma Distribution Wheeling Services Agreement between a Retail Electricity Supplier (RES) and a Distribution Utility Upon Retail Competition and Open Access (RCOA) to facilitate a smooth transition to a regime in which RCOA is already in place, thereby allowing contestable customers the opportunity to evaluate the RCOA within a reasonable period prior to its commercial operations and to enable the said customers to ease into the retail market.

On 29 March 2016, the ERC issued Resolution No. 16, Series of 2016, entitled A Resolution Instituting The Policy in the Computation of Generation Charges Relative to Wholesale Electricity Spot Market (WESM) Tradings Participated in by Distribution Utilities (DUs). Therein, the ERC adopts the policy wherein all the gains that the distribution utilities obtain from selling to the WESM, as well as the excess kWh sold back to the WESM, shall be reflected as deduction from the WESM generation cost and kWh purchased; while the losses incurred both in monetary and the corresponding excess kWh sold back to the WESM due to trading of contracts shall be borne by the distribution utilities as a result of the participation in electricity market trading.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Distribution utilities and electricity cooperatives (as distribution utilities), RES and entities participating in the WESM may engage in the sale of power to customers.

Generally, all suppliers of electricity to the contestable market have to acquire a RES licence from the ERC, except for distribution utilities and electric cooperatives with franchises from the Congress of

the Philippines with respect to their existing franchise areas. The following may obtain a RES licence to become a supplier:

- generation companies or affiliates thereof;
- affiliates of distribution utilities with respect to the latter's contestable market within or outside its franchise area, subject to restrictions imposed by the ERC on market share limits and the conduct of business activities;
- retail aggregators;
- IPP administrators; and
- any other person authorised by the ERC to engage in the selling, brokering or marketing of electricity to the contestable market.

In Resolution No. 05, Series of 2016, the ERC adopted the rules governing the issuance of RES licences, which are valid for a term of five years, renewable at the end of every term. It shall be non-transferable and subject to revocation by the ERC for any violations of the law or rules.

On 12 May 2016, the ERC issued Resolution No. 11, Series of 2016, providing that no distribution utility may engage in the supply of electricity to end users in the contestable market unless the supply is made in its capacity as Supplier of Last Resort. Further, within three years from its effectivity, all local RES shall wind down their business, while existing retail supply contracts entered into with their contestable customers shall remain valid until their respective expiration, subject to the winding-down period. However, the implementation and enforcement of the foregoing Resolution, among other issuances, was restrained by the Regional Trial Court.

Finally, electricity suppliers participating in the WESM are required to register with the WESM Market Operator in order to be able to inject or withdraw electricity from the grid. This is accomplished by the approval of an application for registration accompanied by payment of the registration fee.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Yes, power sales are subject to VAT. A universal charge, fixed and approved by the ERC for the recovery of stranded debts, contract costs of the NPC and stranded contract costs of eligible contracts of distribution companies is also imposed. It is a non-bypassable charge passed on and collected on a monthly basis from all electricity end users. Also levied is a lifeline rate, which refers to the subsidised rate given to low-income captive market end users who cannot afford to pay at full cost. Likewise, a feed-in-tariff allowance is charged to all electricity consumers to share in the cost of the feed-in-tariff. The electricity rates are likewise unbundled between transmission and generation rates, reflecting the respective costs of each service.

After public hearings, the ERC determines, fixes and approves the Transmission and Distribution Wheeling Charges, and Retail Rates. It also fixes and regulates the rates and charges imposed by Distribution Utilities on their captive markets as well as the universal charge.

Electricity suppliers of renewable energy are subject to incentives such as zero-rated VAT. Under the EPIRA, the President of the Philippines reduces royalties, returns and taxes collected for the exploitation of all indigenous sources of energy, such as natural gas and geothermal steam, to effect parity of tax treatment with existing rates for imported coal, crude oil, bunker fuel and other imported fuels.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

The rates are determined by the Philippine Electric Market Corporation (PEMC) via trading through the WESM, which is a venue where electricity made by power-producing companies is centrally coordinated and traded like any other commodity, and prices are driven by the law of supply and demand.

As a wholesale market, it is open to distributors, directly connected customers, large users, and supply aggregators. As a spot market, electricity is traded on a real time basis or 'on the spot'.

The DOE has formulated the detailed rules for the WESM jointly with the electricity power industry participants. The rules provide the mechanism for determining the price of electricity not covered by bilateral contracts between sellers and purchasers of electricity. Customer nodes are grouped into customer pricing zones. All customers within a customer pricing zone face the same price for electricity consumed.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The supply sector is a business affected by public interest. Its operation for supply to end users in the contestable market requires a licence from the ERC. Electricity suppliers, where applicable, have to functionally and structurally unbundle their supply business activities and rates from its generation and distribution business, if any. They have to identify and segregate the components of their supplier charges; and comply with all the WESM rules and any reporting requirements prescribed by the ERC for monitoring purposes. Breach of the WESM rules carries the penalty of sanctions from the PEMC Board of Directors, without prejudice to the authority of the ERC to impose the fines and penalties under the EPIRA. Electricity suppliers are also subject to the rules and regulations concerning abuse of market power, cartelisation and other anticompetitive or discriminatory behaviour.

To protect the interest of end users in the contestable market by ensuring the provision of continuous supply of electricity in the event that the RES is unable to continue providing service, the ERC promulgated the Rules for the Supplier of Last Resort for the Contestable Market on 21 June 2006, providing for Suppliers of Last Resort (SOLR) to back up the supply of electricity. For a distribution utility to serve as SOLR, it must have the capability to participate in the WESM.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The DOE is given broad powers to formulate such rules and regulations as may be necessary to implement the objectives of the EPIRA and exercise such other powers as may be necessary or incidental to attain its objectives.

The ERC is the independent, quasi-judicial body created under the EPIRA with the mandate to promote competition, encourage market development, ensure customer choice and penalise abuse of market power in the restructured electricity industry. Under the EPIRA, the ERC is mandated to act on applications for cost recovery and return on demand-side management projects, as well as to establish and enforce a methodology for setting transmission and distribution wheeling and retail rates for the captive market of a distribution utility, taking into account all relevant considerations, including the efficiency or inefficiency of regulated entities. In addition, it also has the specific mandate to monitor the activities in the generation and supply of electric power industry with the end view of promoting free market competition and ensuring that the allocation or pass through of bulk purchase cost by distributors is transparent and non-discriminatory.

The House of Representatives is also given the power to revoke any franchise or privilege granted to a party violating the provisions of the EPIRA, upon recommendation of the DOE or the ERC, or both.

The Joint Congressional Power Commission, composed of 14 members with the Chairmen of the Committee on Energy of the Senate and the House of Representatives and six additional members from each House to be designated by the Senate President and the Speaker of the House of Representatives, was constituted to: set the guidelines and ensure the proper implementation of the EPIRA; ensure transparency on the conduct of public bidding procedures; review and evaluate the performance of industry participants; submit periodic reports to the President; determine inherent weaknesses in the law and recommend necessary remedial legislation or executive measures; and such other duties as may be necessary to attain its objectives. Its existence was mandated for a period of 10 years from the EPIRA becoming effective in 2001. On 21 June 2011, the President of the Philippines approved a joint resolution passed by members of the House of Representatives and the Senate, extending the existence of the Joint Congressional Power Commission for another 10 years from 26 June 2011 to ensure that the goals and objectives of EPIRA and the Renewable Energy Act of 2008 are fully achieved.

In March 2013, the DOE created the Contingency Committee for the Mindanao Power Situation (CCM) to formulate, develop and recommend to the DOE Secretary a plan to address the Mindanao Power Situation. The CCM is composed of representatives from the DOE, NEA and NPC.

In May 2014, pursuant to Department Order No. DO2014-05-0009, a Task Force was created to study ways in reducing the price of electricity. It is in charge of evaluating the current breakdown of electricity and identifying the factors which affect them. In addition, it shall also conduct multi-sectoral public consultations nationwide to present their findings and ways to help reduce the price of electricity and ensure its sufficiency.

23 Scope of authority

What is the scope of each regulator's authority?

The DOE has, among other matters, the responsibility to:

- formulate policies for the planning and implementation of a comprehensive programme for the efficient supply and economical use of energy consistent with the national economic plan and with policies on environmental protection and ecological balance;
- provide a mechanism for the integration, rationalisation and coordination of the various energy programmes of the government;
- develop and update the existing Philippine Energy Plan;
- prepare and update, annually, a power development programme;
- exercise supervision and control over all government activities relative to energy projects; and
- establish and administer programmes for the exploration, transportation, marketing, distribution, utilisation, conservation, stockpiling and storage of energy resources of all forms.

On the other hand, the ERC is mandated to promote competition, encourage market development, ensure customer choice and penalise abuse of market power in the restructured electricity industry. In appropriate cases, the ERC may also issue cease and desist orders after due notice and hearing. Some of its specific powers and functions are to:

- promulgate and enforce rules and regulations in connection with the regulation of the electric power industry;
- amend or revoke, after due notice and hearing, the authority to operate of any person or entity that fails to comply with the law and its rules and regulations;
- determine, fix and approve transmission and distribution wheeling charges and retail rates;
- act on applications for cost recovery and return on demand side managment;
- monitor activities in the generation and supply of the electric power industry and impose fines or penalties for any non-compliance with or breach of the EPIRA and its IRR;
- set the criteria for eligibility and authorise eligible distribution companies, distribution utilities, suppliers, IPP administrators, end users and other entities authorised by them in accordance with the law for membership in the WESM;
- act on applications for or modifications of certificates of public convenience and necessity, licences or permits of franchised electric utilities in accordance with law, and revoke, review and modify such in appropriate cases; and
- have original and exclusive jurisdiction over all cases contesting rates, fees, fines and penalties imposed in the exercise of its powers, functions and responsibilities, and over all cases involving disputes between and among participants or players in the energy sector.

While the Cooperative Development Authority has the power to register stock electric cooperatives, the NEA has supervisory powers over all electric cooperatives. The NEA is mandated to strengthen electricity cooperatives, help them become economically viable and prepare them for the implementation of retail competition and open access. Hence, NEA is authorised and empowered to:

- supervise the management and operations of all electricity cooperatives;
- exercise step-in rights to take over operations in cases of ailing cooperatives;
- provide institutional, financial and technical assistance to electricity cooperatives;
- pursue the total electrification of the country through the electricity cooperatives;
- ensure economic and financial viability and operation of all electricity cooperatives;
- restructure ailing electricity cooperatives;
- develop, set and enforce institutional and governance standards for the efficient operation of electricity cooperatives;
- formulate and impose administrative sanctions and penalties, and file criminal cases against those who violate Presidential Decree No. 269, as amended;
- serve as guarantor to qualified electricity cooperatives in their transactions with various parties;
- grant loans to electricity cooperatives;
- exercise primary and exclusive jurisdiction in the adjudication of complaints against electricity cooperative officers, election disputes and all matters relating to the effective implementation of Presidential Decree No. 269, as amended;
- issue orders, rules and regulations to conduct investigations, referenda and similar actions on all matters affecting the electricity cooperatives;
- issue preventive or disciplinary measures or to take any other remedial measures to attain the objectives of Presidential Decree No. 269, as amended;
- as a quasi-judicial agency, deputise local law enforcement agencies to enforce or implement its orders or decisions, with the power to cite in contempt any party or witness to any case before it for contumacious conduct; and
- require the submission of reportorial requirements relative to the operations of electricity cooperatives as electricity distribution utilities.

As stated in question 22, the House of Representatives has the power to revoke a franchise or privilege granted to a party that has violated the EPIRA.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The DOE is a government agency established by Congress under Republic Act No. 7638. It is under the supervision and control of the Office of the President.

The ERC was likewise created by Congress under the EPIRA as an independent, quasi-judicial regulatory body.

Considering, however, that both the DOE and the ERC are government agencies, the same are not totally independent of the government since the decisions of the secretary of the DOE and the chairman of the ERC may be subject to review and modification by the President of the Philippines. However, as both the DOE and the ERC are the agencies that implement laws and monitor compliance by participants in the electricity industry, they remain independent from the businesses that they regulate.

The PEMC is a corporation created upon the initiative of the DOE to be the governance arm of the WESM. Its 15-person board comprises representatives from the various sectors of the electric power industry (ie, the PEMC; the NGCP; generation, distribution and supply sectors); and independent directors. It is chaired by the Secretary of the DOE, who also appoints members of the PEMC board, until such time that the PEMC transitions into an independent market operator. As the PEMC board is composed primarily of both representatives of regulated businesses and government officials, it may be considered as not totally independent of either.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

All actions and decisions rendered by the DOE and the ERC are subject to review. In particular, the decisions or orders of the DOE and

the ERC may be appealed to the Office of the President, and thereafter brought before the Court of Appeals by filing a verified petition for review under rule 43 of the Rules of Court on the ground of errors in judgment. If the Court of Appeals renders an unfavourable decision, such decision may be appealed to the Supreme Court via a petition for review on certiorari.

On the other hand, under section 46 of the EPIRA, cases decided by the ERC involving questions of fact are directly appealable to the Court of Appeals under rule 43 of the Rules of Court. Decisions by the ERC involving questions of law may be directly appealed to the Supreme Court via a petition for review on certiorari.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The ERC is the agency granted the authority to enforce and promote true market competition, to encourage market development and customer choice, and to monitor, penalise and prevent harmful monopoly, any abuse of market power, anticompetitive or unduly discriminatory act or behaviour by any electric power industry participant.

Pursuant to the policy of the state to enhance the flow of private capital and to broaden the ownership base of the power generation, transmission and distribution sectors, the ERC now requires generation companies and distribution utilities that are not publicly listed to offer and sell to the public a portion not less than 15 per cent of their common shares of stock. If the authorised common shares of the stock of a generation company or distribution utility are already fully subscribed, then said companies must increase their shares of stock by 15 per cent or sell or divest 15 per cent of its subscribed capital stock to comply with the requirement of law on public offer and sale.

In addition, the EPIRA mandates that the holdings of persons, natural or juridical, including directors, officers, stockholders and related interests in a distribution utility and their respective holding companies shall not exceed 25 per cent of the voting shares of stock unless the utility or the company holding the shares or its controlling stockholders are already listed on the Philippine Stock Exchange.

The Philippine Competition Act (Republic Act No. 10667), which was signed into law by the then-President Benigno S Aquino III on 21 July 2015, likewise granted the Philippine Competition Commission (PCC) the power to review mergers and acquisitions, including those of public utilities. In general, parties to a merger or acquisition with a transaction value of more than 1 billion Philippine pesos are prohibited from consummating their agreement until 30 days have lapsed from notifying the PCC. Any agreement consummated in violation of the foregoing is void, and shall subject the parties thereto to an administrative fine of 1 to 5 per cent of the transaction value. The Implementing Rules and Regulations of the Philippine Competition Act (Philippine Competition Act IRR) provide that a favourable recommendation by a government agency with a competition mandate shall give rise to a disputable presumption that the proposed merger or acquisition does not violate the Philippine Competition Act.

The PCC likewise has the original and primary jurisdiction in the enforcement and regulation of all competition-related issues; however, the sector regulators shall be consulted and afforded reasonable opportunity to submit its own opinion and recommendation on the matter before the PCC makes a decision on any case.

Furthermore, the PCC has the power to intervene or participate in administrative and regulatory proceedings requiring consideration of the provisions of the Philippine Competition Act that are initiated by the ERC. The transmission and distribution sectors are considered as public utilities. However, a favourable or no-objection ruling of the PCC shall not be construed as dispensing of the requirement for a favourable recommendation from the appropriate government agency.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

A corporation may apply with the ERC for clearance to be allowed to merge with another corporation. The ERC shall grant the application if it determines that the merger will not or is not likely to have the effect of substantially lessening competition in a market. Where the ERC has granted an application for a clearance, the grantee must not directly or indirectly acquire the shares or assets, or undertake the merger or consolidation, until the expiry of the period ending 60 days after the proposed merger has been made public, or such shorter period as permitted by the ERC.

A corporation may likewise apply with the ERC for an authorisation to merge or consolidate with another corporation, which merger or consolidation would result in lessening competition in the market. The ERC shall grant the application if it determines that the acquisition, merger or consolidation will result or is likely to result in a benefit to the public that would outweigh the detriment to the public caused by the lessening of competition that would result.

No clearance or authorisation will be issued if the merger was made before the ERC decides on the application for clearance. The clearance or authorisation comes into force on the day it is issued and expires after 12 months, or on such date that the ERC determines.

Similarly, the Philippine Competition Act prohibits mergers and acquisitions that substantially prevent, restrict or lessen competition in the relevant market. In the Philippine Competition Act IRR, parties to a merger or acquisition that satisfy the thresholds for compulsory notification are required to notify the PCC before the execution of the definitive agreements relating to the transaction.

As stated in question 26, the Philippine Competition Act prohibits parties to a merger or acquisition wherein the value of the transaction exceeds 1 billion Philippine pesos from consummating their agreement until 30 days after providing notification to the PCC. After determination by the PCC that all the relevant requirements for the said notification have been submitted, the PCC shall issue a notice to the parties that the notification is sufficient for purposes of commencing Phase 1 review. Once the notice has been issued, the abovementioned 30-day waiting period commences. After the Phase 1 review, the PCC determines whether there is a need for a more comprehensive and detailed analysis of the merger or acquisition under a Phase 2 review. If the PCC determines that a Phase 2 review is necessary, it shall request other information or documents relevant to its further review. Upon receipt by the parties of the said request, the 30-day waiting period is extended for an additional 60 days, but the total period of review shall not exceed 90 days. Ultimately, the PCC shall decide on the legality of the merger or acquisition agreement and it may either approve or prohibit the implementation of such agreement. Note, however, that when the 30-day waiting period (extendible for an additional 60 days but not exceeding 90 days for the Phase 2 review) has expired and no decision has been promulgated by the PCC, the merger or acquisition agreement is deemed approved and the parties may proceed to implement or consummate it.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The ERC is the government agency that monitors and penalises abuse of power, cartelisation, and anticompetitive or discriminatory behaviour by any electric power industry participant.

While the main deterrent to anticompetitive practices is the regulation by the ERC of acquisitions and mergers among corporations engaged in the power sector, the ERC is also given other powers and functions to promote competition and encourage market development. These powers include the authority to monitor agreements entered with price-fixing provisions, to determine and penalise misuse of market power and other unfair trade practices, and to issue orders controlling the price of electricity goods, among other matters. Pursuant to this, the ERC issued Resolution No. 11, Series of 2016,

imposing restrictions on the operations of distribution utilities and RES in the competitive retail electricity market.

Under the Philippine Competition Act, the PCC has the original and primary jurisdiction in the enforcement and regulation of all competition-related issues. The PCC has the sole and exclusive authority to conduct fact-finding or preliminary inquiry for the enforcement of the Philippine Competition Act. The Regional Trial Court has the original jurisdiction to decide on all criminal and civil cases involving violations of the Philippine Competition Act and other competition-related laws. The sector regulators shall, however, be consulted and afforded reasonable opportunity to submit their own opinion and recommendation on the matter before the PCC makes a decision on any case.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Under the Competition Rules and Complaint Procedures issued by the ERC, anticompetitive practices include, but are not limited to:

- entering into agreements with provisions that would have, or would be likely to have, the effect of substantially lessening competition, or with provisions on price-fixing;
- misuse of market power;
- acquisitions, mergers and consolidations that would have, or would be likely to have, the effect of substantially lessening competition;
- cross-subsidisation;
- cartelisation; and
- other unfair trade practices detrimental to the encouragement and protection of contestable markets.

Moreover, in determining whether a provision of an agreement, arrangement or understanding, or an acquisition, merger or consolidation, has or is likely to have, or would have, or would likely have, the effect of substantially lessening competition in a market, the following factors, among others, shall be taken into account:

- the level of concentration in the market;
- the nature and effect of barriers to entry to the market;
- the degree of countervailing power in the market;
- the dynamic characteristics of the market, including growth, innovation and product differentiation;
- the nature and extent of vertical integration in the market; and
- the behaviour of competitors in the market.

The Philippine Competition Act seeks to level the playing field by prohibiting anticompetitive behaviour. The latter consists of anticompetitive agreements, abuses of dominant positions, and mergers and acquisitions that limit, prevent, and restrict competition. According to the principal author of the Philippine Competition Act, market competition should be promoted in order to provide benefits to consumers through more choices at lower prices. The ultimate objective is to protect consumer welfare, advance domestic and international trade and economic development.

Anticompetitive agreements such as, restricting competition as to price, components thereof or other terms of trade as well fixing price at an auction or in any form of bidding are per se prohibited. Agreements between or among competitors that have the object or effect of substantially preventing, restricting or lessening competition are likewise prohibited. On the other hand, abuse of dominant position consists of engaging in conduct that would substantially prevent, restrict or lessen competition. This includes selling goods or services below cost with the object of driving competition out of the relevant market, imposing barriers to entry or committing acts that prevent competitors from growing within the market in an anticompetitive manner, making a transaction subject to acceptance by the other parties of other obligations that have no connection with the transactions and setting prices or other terms and conditions that discriminate unreasonably between customers or sellers of the same goods or services. Lastly, merger or acquisition agreements that substantially prevent, restrict or lessen competition in the relevant market or in the market for goods or services are also prohibited.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The law mandates the ERC to promulgate rules that prohibit anticompetitive behaviour and abuse in the market of power. Pursuant thereto, the ERC has the following powers and functions to preclude or remedy anticompetitive practices:

- grant or withhold clearance for agreements or arrangements, acquisitions, mergers and consolidations, as well as revoke or amend any clearance granted;
- grant or withhold authorisations to make agreements or arrangements, give effect to an agreement, arrangement or understanding, acquisitions, mergers and consolidations that would or might have the effect of substantially lessening competition in the market, or contain price-fixing provisions, as well as revoke or amend any clearance granted;
- require documents and information relating to matters that constitute or may constitute anticompetitive practices and compliance with clearance conditions and ERC orders;
- compel submission of data by market operators according to a monitoring protocol;
- impose penalties and fines;
- issue the following orders:
  - cease-and-desist orders;
  - orders requiring the commission of acts to rectify any violation or mitigate the consequences of anticompetitive practices;
  - orders fixing or controlling the price at which violators may supply or acquire electricity or goods or services related to the same;
  - orders revoking or modifying a certificate of public convenience and necessity, licence or permit granted to the violator; and
  - orders requiring violators to dispose assets or shares in the capital stock of a corporation within such period (not exceeding 12 months from the date of the order) as determined by the ERC; and
- investigate matters that may constitute anticompetitive practices.

Moreover, the PCC, which has original and primary jurisdiction over the enforcement and implementation of the provisions of the Philippine Competition Act, is authorised to:

- conduct inquiry, investigate, and hear and decide on cases involving any violation of the Philippine Competition Act and other existing competition laws motu proprio or upon receipt of a verified complaint from an interested party or upon referral by the concerned regulatory agency and institute the appropriate civil or criminal proceedings;
- review proposed mergers and acquisitions, determine thresholds for notification, determine the requirements and procedures for notification, and upon exercise of its powers to review, prohibit mergers and acquisitions that will substantially prevent, restrict or lessen competition in the relevant market;
- monitor and undertake consultation with stakeholders and affected agencies for the purpose of understanding market behaviour;
- upon finding, based on substantial evidence, that an entity has entered into an anticompetitive agreement or has abused its dominant position after due notice and hearing, stop or redress the same, by applying remedies, such as, but not limited to, issuance of injunctions, requirement of divestment and disgorgement of excess profits under such reasonable parameters that shall be prescribed by the Philippine Competition Act IRR;
- conduct administrative proceedings, impose sanctions, fines or penalties for any noncompliance with or breach of the Philippine Competition Act and its IRR and punish for contempt;
- issue subpoena duces tecum and subpoena ad testificandum to require the production of books, records or other documents or data which relate to any matter relevant to the investigation and personal appearance before the Commission, summon witnesses, administer oaths and issue interim orders such as show cause orders and cease and desist orders after due notice and hearing in accordance with the Philippine Competition Act IRR;

Update and trends

In order to ensure transparency in the distribution utilities' supply procurement and to elicit the best price offers and other Power Supply Agreement (PSA) terms and conditions from suppliers, the ERC and the DOE approved the issuance of a Joint Resolution embodying their agreement that the ERC shall issue the appropriate regulations requiring the distribution utilities to undertake a Competitive Selection Process (CSP) for the PSAs they will enter into for the supply to their captive markets. Thus, Resolution No. 13, Series of 2015 was promulgated by the ERC on 20 October 2015.

On 13 June 2016, Manila Electric Co. (Meralco) secured a 20-day TRO, enjoining the DOE and ERC from implementing the new RCOA rules. Meralco claimed that the RCOA rules were not in accordance with the EPIRA and its IRR. Meralco claimed that recent issuances of DOE and ERC related to RCOA rules will stop its local RES, MPower, from operating and will limit the power of choice of consumers. While the ERC elevated the Regional Trial Court's Order before the Supreme Court, the 20-day TRO lapsed. Despite the foregoing, it appears that the ERC voluntarily suspended the enforcement of the Resolution out of respect for the judiciary.

- upon order of the court, undertake inspections of business premises and other offices, land and vehicles, as used by the entity, where it reasonably suspects that relevant books, tax records or other documents which relate to any matter relevant to the investigation are kept, in order to prevent the removal, concealment, tampering with, or destruction of the books, records or other documents;
- issue adjustment or divestiture orders including orders for corporate reorganisation or divestment in the manner and under such terms and conditions as may be prescribed in the Philippine Competition Act IRR;
- deputise any and all enforcement agencies of the government or enlist the aid and support of any private institution, corporation, entity or association, in the implementation of its powers and functions;
- monitor compliance by the person or entities concerned with the cease and desist order or consent judgment;
- issue advisory opinions and guidelines on competition matters for the effective enforcement of the Philippine Competition Act and submit annual and special reports to Congress, including proposed legislation for the regulation of commerce, trade, or industry;
- monitor and analyse the practice of competition in markets that affect the Philippine economy; implement and oversee measures to promote transparency and accountability; and ensure that prohibitions and requirements of competition laws are adhered to;
- conduct, publish, and disseminate studies and reports on anticompetitive conduct and agreements to inform and guide the industry and consumers;
- intervene or participate in administrative and regulatory proceedings requiring consideration of the provisions of the Philippine Competition Act that are initiated by government agencies such as the Securities and Exchange Commission, the ERC and the National Telecommunications Commission;
- assist the National Economic and Development Authority, in consultation with relevant agencies and sectors, in the preparation and formulation of a national competition policy;
- act as the official representative of the Philippine government in international competition matters;
- promote capacity building and the sharing of best practices with other competition-related bodies; and
- advocate pro-competitive policies of the government.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

The generation and supply sectors are not considered public utilities and are not subject to foreign ownership limitations.

Notwithstanding this general rule, the DOE currently awards service/operating contracts involving the exploration, development, production and utilisation of renewable energy and hybrid systems only to citizens of the Philippines or to corporations or associations at least 60 per cent of whose capital are owned by such citizens. Under SEC Memorandum Circular No. 8, Series of 2013, for purposes of determining compliance with the nationality restrictions, the required percentage of Filipino ownership shall be applied to both the total number of outstanding shares of stock entitled to vote in the election of directors and the total number of outstanding shares of stock, whether or not entitled to vote in the election of directors. Renewable energy contracts involving geothermal energy in the nature of a financial or technical assistance agreement, however, remain open to foreign applicants.

On the other hand, participants in the transmission and distribution sectors are considered public utilities and must obtain franchises from either Congress or the DOE. In this regard, the Philippine Constitution provides that the award of franchises, certificates, or any forms of authorisation for the operation of a public utility shall be limited to citizens of the Philippines or to corporations or associations at least 60 per cent of whose capital are owned by such citizens. It must be noted, however, that this limitation applies only to the operation and management of public utilities, not to ownership of the equipment involved. Thus, it is possible for a wholly foreign-owned corporation to own, for instance, transmission lines and substation facilities, and for the operation and management of the same to belong to another constitutionally qualified corporation.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Projects for the construction and operation of interconnectors between the major island grids of the Philippines by the NGCP must be submitted for approval by the ERC. It is submitted that the construction and operation of international interconnectors must also be approved by the ERC.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

There are no rules yet on cross-border electricity supply or cross-border electricity purchases. Nevertheless, the Philippines is a signatory to the 2007 Memorandum of Understanding on the ASEAN Power Grid which aims to strengthen efforts in the implementation of the proposed ASEAN Power Grid through cross-border electricity interconnection of ASEAN member economies. According to the NGCP, efforts are being undertaken to accomplish a transmission development plan to prepare the Philippines for power interconnection with the ASEAN power grid in the coming years. It has currently filed for a provisional authority with the ERC to conduct a feasibility study for the interconnection project.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The following restrictions exist under the EPIRA:

- no company or related group can own, operate or control more than 30 per cent of the installed generating capacity of a grid or 25 per cent of the national installed generating capacity, or both. 'Related group' includes a person's business interests, including its subsidiaries, affiliates, directors or officers or any of their relatives by consanguinity or affinity, legitimate or common law, within the fourth civil degree;
- no distribution utility is allowed to source from bilateral power supply contracts more than 50 per cent of its total demand from an associated firm engaged in generation. An associated firm with respect to another entity refers to any person who, alone or together with any other person, directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such entity; and

- for the first five years from the establishment of the WESM, no distribution utility shall source more than 90 per cent of its total demand from bilateral power supply contracts.

Exceptions from these limitations shall be allowed for isolated grids that are not connected to the high voltage transmission system. Any restriction on ownership or control between or within sectors of the electricity industry may be imposed by the ERC only insofar as the enforcement of the restrictions under the EPIRA is concerned.

The ERC has issued the Resolution Adopting the Guidelines for the Code of Conduct for Competitive Retail Market Participants that provides for specific restrictions on the transactions between distribution utilities and their local RES, as well as their affiliated RES. A RES is any person or entity licensed to sell, broker, market or aggregate electricity to end users in the contestable market. A local RES is the non-regulated business segment of the distribution utilities catering to the contestable market in its franchise area, and does not require a licence to operate.

The ERC issued Resolution No. 11, Series of 2016, which provides the following restrictions on the retail electricity market:

- no distribution utility is allowed to engage in the supply of electricity to end users in the contestable market unless such supply is made in its capacity as a supplier of last resort;
- all local RES shall wind down their business within three years from effectivity of the resolution;
- no RES shall be allowed to supply more than 30 per cent of the total average monthly peak demand of all contestable customers Competitive Retail Electricity Market; and
- no RES shall be allowed to transact more than 50 per cent of the total energy transactions of its supply business, with its affiliate contestable customers.

In an Order dated 13 June 2016, the Regional Trial Court issued a 20-day temporary restraining order (TRO), enjoining the DOE and ERC from implementing the Resolution, among others. The ERC questioned the Order of the Regional Trial Court via a petition for certiorari and prohibition with the Supreme Court. The 20-day TRO lapsed, but the foregoing notwithstanding, it appears that the ERC voluntarily suspended the enforcement of the Resolution out of respect for the judiciary.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

The ERC is charged with enforcing these restrictions. In this regard, the ERC may impose administrative sanctions without prejudice to the filing of a criminal action, if warranted. For violation or non-compliance with the EPIRA or its IRR, the ERC may impose a fine or penalty from 50,000 to 50 million Philippine pesos. The ERC, along with the DOE, may also recommend to Congress the revocation of the franchise or privilege granted to any party in violation of the EPIRA.

The regular courts may impose a penalty of imprisonment, or a fine ranging from 10,000 to 10 million Philippine pesos, or both, to any person who is found guilty of engaging in anticompetitive behaviour including, but not limited to, cross-subsidisation, price or market manipulation, or other unfair trade practices detrimental to the encouragement and protection of contestable markets, such as engaging in prohibited transactions between electricity utilities and their affiliates mentioned above. The members of the board of directors of juridical entities in violation of the EPIRA may be fined an amount not exceeding double the amount of damages caused by the offender or by imprisonment of one year or two years, or both, at the discretion of the court. This applies to board members of juridical entities who knowingly, or by neglect, allow the commission or omission under the law.

If the offender is a government official or employee, he or she shall, in addition, be dismissed from the government service with prejudice to reinstatement and with perpetual or temporary disqualification from holding any elective or appointive office. If the offender is an alien, he or she may, in addition to the penalties prescribed, be deported without further proceedings after serving any sentence.

The Philippine Competition Act likewise prohibits anticompetitive agreements that have the object or effect of substantially preventing, restricting or lessening competition. Agreements, however, which contribute to improving the production or distribution of goods and services or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefits, may not necessarily be deemed a violation of the Philippine Competition Act.

CRUZ MARCELO & TENEFRANCIA

Patricia AO Bunye **po.bunye@cruzmarcelo.com**

9th, 10th, 11th and 12th Floors, One Orion
Block 33, Lot 1, 11th Avenue cor University Parkway
Bonifacio Global City, Taguig City
Metro Manila 1634
Philippines

Tel: +63 2 8105858
Fax: +63 2 8103838
www.cruzmarcelo.com

Poland

Tomasz Chmal

White & Case M Studniarek i Wspólnicy – Kancelaria Prawna sp.k.

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Government policy
The main objectives of government policy for the electricity market have been set out in the Energy Policy 2030 adopted in 2009 by the Council of Ministers. There are six areas identified as a priority.

Improving energy efficiency
Within the objective of improving energy efficiency, on the basis of Energy Policy 2030, the support system based on 'white certificates' was implemented Furthermore the government policy focuses of the development of high-efficiency cogeneration and provides support to investments in energy conservation.

Increased security of fuel and energy
This objective envisages a further increase in fuel security and energy based on national resources, mainly coal and lignite. At the same time the government plans to develop the cross-border connections enabling the importation of energy.

Diversification of electricity generation with introduction of nuclear power
In recent years, in accordance with the Energy Policy 2030, the legal framework for the construction and operation of nuclear power plants has been adopted. The first Polish nuclear power plant is to be constructed in Poland in the coming years.

Development of Renewable Energy Sources (RES), including biofuels
The Energy Policy 2030 set the objective of a 15 per cent share of RES in final energy consumption by 2020.

Development of competitive fuel and energy markets
In this area, the main objective is to counteract excessive price increases and the protection of vulnerable customers by active regulatory involvement of the President of the Energy Regulatory Office.

Reduction of impact of energy on environment
In order to achieve the environmental objectives, the Energy Policy 2030 highlighted methods for reducing emissions of CO_2, SO_2 and NOx, without the need to introduce significant changes in the structure of production. It is also planned to support the development of carbon capture and storage (CCS) technology, as well as the implementation of obligations under the new ETS Directive.

On 16 November 2015, a new Polish government was appointed. The new government established a new Ministry of Energy that replaced the Ministry of Economy in terms of responsibility for state energy policy and also took over responsibility for supervision of state-owned energy and coal companies (except for electricity and gas TSOs). The electricity TSO is supervised by the secretary of state at the Chancellery of the Prime Minister of Poland, who is also the government's plenipotentiary for strategic energy infrastructure affairs.

Legislative framework
The main piece of legislation governing the electricity sector in Poland is the Energy Law Act, consistent with EU regulations on energy market. The Energy Law Act specifies rules for the provision of fuel and energy, duties of the Energy Regulatory Office (ERO), rules for concessions and energy tariffs, rules for power equipment, installations networks, and rules for the exploitation thereof. Other important regulations for the electricity sector are included in the Renewable Energy Sources Act, Energy Efficiency Act and various regulations issued by the Minister of Economy (now Minister of Energy) regarding the calculation of tariffs, transmission and distribution networks. The electricity sector is also influenced by the Geological and Mining Law Act, which specifies requirements for carrying out geological works, the rules applicable to mining operations and extracting minerals from deposits and requirements for the protection of mineral deposits and groundwater.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

The economic structure of the energy sector and the degree of market concentration has primarily been shaped by the horizontal and vertical consolidation of the electricity market by companies belonging to the State Treasury, which was a result of the implementation of government policy in 2006. A direct result of the consolidation was the emergence of the four state-owned energy capital groups operating through subsidiaries in the generation, distribution and supply markets: PGE, Tauron, Enea and Energa.

The structure and mechanisms concerning the functioning of the market do not differ from those which have developed in most other European countries. Market participants have broad access to various electricity sales options and access to information regarding volumes and prices at which electricity is sold and contracted for the wholesale market.

Generation
Poland currently operates 19 power plants producing electricity from lignite and hard coal, which together produce more than 80 per cent of the energy consumed in Poland. Additionally, energy is produced from renewable energy sources and CHP. In Poland over 50 CHP power plants currently in operation are located in large urban areas and over 160 operating CHP power plants are located in the vicinity of industrial plants.

Transmission and distribution
Transmission networks with a voltage of 220kV and 400kV are maintained by the Polish Power Grid Company (PSE SA), a 100 per cent state-owned company, which is the owner and the sole operator of the transmission grid.

Distribution networks with a voltage of 230V to 110kV are owned and operated by distribution system operators (DSO) whose networks are directly connected to the transmission network. As of 2015, there were 170 DSOs operating in Poland, and among them, five large DSOs belonging to vertically integrated undertakings. As these five DSOs are parts of vertically integrated undertakings they are subject to an obligation to separate distribution activities from generation operations or

other economic activities of a vertically integrated undertaking (as a result of unbundling requirements).

Crucial for the distribution market is the independence of operators and the equal access rights available to all market participants. The independence of the DSOs is guaranteed by unbundling and the Compliance Programme, which specify the obligations of operators in order to ensure non-discriminatory treatment of the users of the system.

Sale

Total consumption of electricity in Poland as well as domestic electricity production in 2015 was over 161TWh. Exported electricity exceeded imported electricity by 334GWh only. Electricity generators (with certain exceptions) are under the obligation to sell no less than 15 per cent of electricity generated through power exchanges in Poland.

Currently, the market is divided into three main segments.

Commodity market

Energy trading on the Polish Power Exchange (PPE) is mainly a Day-Ahead Market. The PPE also operates the Commodity Derivatives Market for Electricity, as well as the CO2 Emission Allowance Market. Commodity market PPE is a major trading platform. The total volume traded in 2015 was over 186TWh.

Contracts

Energy trading on the contract market is based on bilateral agreements concluded between energy producers and energy companies and customers. The volume of electricity traded through bilateral transactions in 2015 was over 58TWh.

Balancing market

The balancing market is a specific area of the energy market, on which the differences between the transactions made between market participants and the actual demand for electricity are balanced.

There are over 17 million electricity customers in Poland, out of which 14.5 million are household customers.

The highest share in electricity sales to final customers is held by incumbents who remained, after unbundling, as a party to sale and distribution agreements with customers. They also perform the function of designated sellers for household customers who did not elect a new supplier. In 2015, there were five designated sellers and more than 100 alternative trading companies actively engaged in the sale of electricity to end users.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The construction or extension of a generation facility falls under the general requirements of the investment process and will require an environmental decision and administrative permits for localisation, construction and usage. A separate legislative framework is envisaged for nuclear power plants.

The generation of electricity, except for generation in (i) conventional energy installations of the capacity below 50MW, (ii) certain small RES installations, and (iii) agricultural biogas plants or generation of energy solely from agricultural biogas in cogeneration or solely from biofuels, requires a concession for the production of electricity issued by the President of the ERO. A concession is issued for the period up to 50 years.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

A (transmission/distribution) system operator is obliged to conclude an agreement for connection with entities requesting connection on equal terms, provided that the interconnection is technically and economically possible and the applicant meets the interconnection conditions specified by the grid operator. In order to be connected to the grid an applicant must complete an application form, provide technical data and pay the relevant interconnection fee. RES installation benefit from priority access to the grid.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Until 1 July 2016, all RES installations, regardless of their capacity or type of renewable technology used, were eligible for support in the form of mandatory purchases of energy by obligated suppliers and green certificates and the obligation of certain market participants to either purchase green certificates in amounts corresponding to a given percentage of their energy sales, consumption or trading, or to pay a substitute fee.

The new support regime which entered into force on 1 July 2016, foresees a gradual departure from support system based on green certificates and mandatory RES energy purchases and a switch to the auctioning system in which RES installations bid to receive support in the form of guaranteed prices for predetermined amounts of energy generated each year. The new renewable energy support scheme provides for preferential support mechanisms for RES technologies using local resources (biomass) and ensuring the stability of the grid (especially co-combustion of biomass) to the detriment of the development of certain other technologies (such as wind and solar energy technologies).

Poland established also a support scheme for CHP technologies based on tradable certificates of origin and an obligation of certain market participants to either purchase such certificates in amounts corresponding to a given percentage of their energy sales, consumption or trading, or to pay a substitute fee. The scheme is to expire in at the end of 2018. Discussions on possible extensions of the support scheme are ongoing; the new scheme is, however, likely to take the form of auctions.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

In line with the EU regulations, the Polish government has set a target of a 20 per cent reduction in C02 emissions by 2020 and at least 40 per cent by 2030, which will impact the market, as most of the energy is currently generated by coal and lignite power plants.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Electricity storage installations are just being developed in Poland. The Energy Efficiency Act indirectly provides that storage facilities should be promoted in order to increase energy efficiency. The Ministry of Development and the Ministry of Energy intend to promote the development of storage facilities, including, among others, as part of the e-mobility programme. The Polish Chamber of Energy Storage, a non-governmental organisation, was created in order to promote electricity storage installations.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The Energy Policy 2030 envisages the construction of the first nuclear power plant. The details on the support scheme for nuclear power plants have not yet been revealed. Various models of the 'contracts for difference' are currently the subject of discussion.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

The construction of transmission networks falls under the Act on special rules for the preparation and implementation of strategic investments in transmission networks. The Act is an implementation of EU Regulation No. 347/2013 and is intended to facilitate and accelerate the construction of transmission networks of strategic importance. The Act applies to 23 high-voltage lines of 400kV listed in the Annex to the Act. The Act provides for, among other things, the possibility of expropriating property for the planned grids and a compensation mechanism. Remaining investments not included in the Annex to the Act will fall under general requirements for the investment process.

A transmission concession issued by the President of the ERO is required for the operation of a transmission network.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

On the basis of the Third Party Access (TPA) rules implemented into Polish law, transmission system operators must provide equal access to any interested final off-takers or energy trading undertakings. In order to benefit from energy transmission services an interested entity has to be interconnected with the grid and sign a transmission services agreement. An applicant has the right to be interconnected with the transmission network if technical and economic conditions for such connection exist and if the applicant meets grid connection requirements specified by the grid operator. The grid connection conditions are determined by the network operator on the basis of the Instruction on the Traffic and Operation of the Transmission Network approved by the President of the ERO and then forwarded to the applicant along with the draft connection agreement.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

As mentioned above, the Polish parliament adopted the Act on Special Rules for the Preparation and Implementation of Strategic Investments in Transmission Networks, simplifying the development of the transmission system. Moreover, many transmission grids are supported by the EU as Projects of Common Interest.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The transmission system operator, operating under the conditions of a natural monopoly, is obliged to submit cost-based tariffs with rates for transmission services to the President of the ERO for approval. Terms and conditions regarding the provision of transmission services are set out in the industry code (Instruction on Traffic and Operation of Transmission Network) and in transmission agreements with the TSO.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The President of the ERO supervises the functioning of the transmission network, sets the technical standards, and approves tariffs. The TSO is under a duty to develop and maintain an efficient, coordinated and secure system for the electrical transmission network.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

The construction or distribution networks will fall under the general requirements of the investment process and will require an environmental decision and administrative permits for localisation, construction and usage. As distribution networks are considered public interest investments, they fall under special location rules.

A distribution concession issued by the president of the ERO is required for the operation and maintenance of a distribution network.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

On the basis of the TPA rule, distribution system operators must provide equal access to any interested final off-takers or energy trading undertakings. In order to benefit from energy transmission services an interested entity has to be interconnected with the grid and sign a distribution services agreement. An applicant has the right to be interconnected with a distribution network if technical and economic conditions for such connection exist and if the applicant meets grid connection requirements specified by the grid operator. The grid connection conditions are determined based on the Instruction on the Traffic and Operation of the Distribution Network approved by the President of the ERO and then forwarded to the applicant along with the draft connection agreement.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

DSOs are required to prepare and provide their five-year plans for network development to the President of the ERO for approval. The plans should be updated. The scope of expansion is subject to discussion between the DSO and the President of the ERO.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Rates for provision of distribution services are regulated. Distribution system operators, as companies operating under the conditions of a natural monopoly, are obliged to prepare and submit such rates to the President of the ERO for approval.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

Wholesale or retail trading of electric energy, except for trading through an installation with voltage of less than 1kV being owned by the recipient of energy, and electricity trading carried out on the Polish Power Exchange, requires a trade concession. Concessions are granted by the President of the ERO. An applicant for a concession has to prove, among other things, the technical and financial capability to perform the economic activity.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

As a rule, the electricity tariff has to be approved by the President of the ERO. The President may, however, exempt the seller from the obligation to submit tariffs for approval, if he finds that it operates in a competitive environment. Currently, most vendors selling electricity to household consumers are required to submit tariffs for approval – wholesale and industrial customers are already released from such obligation.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

In 2008, sellers were released from the obligation to have tariffs for sales to industrial customers and for wholesale.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

In accordance with the Energy Law Act, the consumer has the right to access to a distribution network, to receive electricity in a continuous and reliable manner, to non-discriminatory treatment, and to the choice of a supplier. The supply of electricity may be withheld only in limited cases listed in the Energy Law Act.

Moreover, the President of the ERO selects in tenders a special category of energy sellers who are obliged to provide energy and distribution (transmission) services to end users that do not benefit from the right to choose the supplier based on complex agreements.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

On a governmental level, the Minister of Energy is responsible for setting general energy policy, strategic priorities, the policy statement, as well as for the implementation of legislation. Also, the Ministry of Environment influences the electricity market by leading climate and environmental policy.

The main regulatory body is the President of the ERO, responsible for regulation in the energy sector, as well as the promotion of competition. The activities undertaken by the President of the ERO are aimed at meeting the goals set out by the Parliament, especially in the field of ensuring energy security, the economic and rational use of fuels and energy, the development of competition, counteracting negative effects of natural monopolies, as well as fulfilling obligations resulting from international agreements.

Within the scope of national nuclear safety and radiological protection, the regulatory body is the President of the Polish Atomic Agency (PAA). Currently, the President of the PAA is supervising the preparation of the investment process aiming at the construction of the first Polish nuclear power plant.

Moreover, as the biggest energy companies are at least partially state-owned, Minister of Treasury sets ownership policy for their operation and development and may exercise its ownership rights.

23 Scope of authority

What is the scope of each regulator's authority?

The Energy Law Act sets out the principal objective and general duties of the President of the ERO. The President of the ERO is responsible for the regulation of the electricity sector within Poland by, inter alia, granting and withdrawing licences, approving and controlling the application of tariffs, appointing transmission, distribution, storage and LNG systems operators, as well as combined system operators, controlling the fulfilment of obligations to sell electricity through the power exchange, and obligations with respect to purchases of energy generated from RES and in co-generation.

Under the Atomic Law Act, the main tasks of the President of the PAA include exercising regulatory control and supervision over the activities leading to actual or potential ionising radiation exposure of humans and the environment.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The President of the ERO is a central administrative body, established by the Energy Law Act as the main regulatory body for the gas, fuel and electricity markets. The President of the ERO is appointed by the Prime Minister after open and competitive recruitment, his mandate lasts five years and he can be reelected only once. The President of the ERO may be dismissed from office by the Prime Minister only under conditions exhaustively listed in the Energy Law Act. The position of the President of the ERO was designed as a regulator with the aim of promoting competition for the benefit of consumers.

The President of the PAA is also a central administrative body, established by the Atomic Law Act. The President of the PAA is also appointed by the Prime Minister after open and competitive recruitment, on the motion of the Minister of Environment. The Minister of Environment supervises the activities of the President of the PAA. The President of the PAA may be dismissed from office by the Prime Minister at any time.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Decisions of the President of the ERO may be challenged before a special branch of the District Court in Warsaw – the Court for Competition and Consumer Protection. Decisions of the President of the PAA may be challenged to an administrative court.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

European Commision
The EU Commission has the authority to review mergers in the electricity sector with a 'community dimension' under Regulation 139/2004 on the control of concentrations between undertakings (OJ 2004 L24/1) (Merger Regulation). The question of a 'community dimension' is determined by reference to two sets of thresholds set out in the Merger Regulation.

President of the Office of Competition and Consumer Protection
Pursuant to the Act on competition and consumer protection, the participants in the planned transaction are obligated to obtain prior clearance of the President of the Office of Competition and Consumer Protection (OCCP), if their turnover in the year preceding the application exceeded €1 billion worldwide or €50 million in Poland.

The notification to the President of the OCCP is obligatory, unless it is excluded due to the potentially insignificant impact of the planned transaction on the market, which relates to cases where the turnover of the target enterprise did not exceed the equivalent of €10 million in Poland in any of the two financial years preceding the notification or if the merger involves entities belonging to one capital group. It is also possible that a merger or acquisition is cleared subject to certain terms and conditions, for example, the resale of a part of assets. Moreover, the Act exceptionally allows clearing a transaction leading to a significant lessening of competition if it simultaneously contributes to economic development or technical progress or has a favourable impact on the economy.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

European Commission
Under the Merger Regulation, the Commission must complete its initial assessment (Phase I investigations) within 25 working days from the working day following the date of receipt of the notification (or receipt of complete information, if later). The period is increased to 35 working days if the Commission receives a request from a member state for the proposed merger to be referred back to the national competition authority or if the undertakings concerned offer commitments

to ensure the merger will not impede competition. From the Phase I investigations, the Commission may:

- find the merger does not fall within the ambit of the Merger Regulation and thus it has no jurisdiction (the parties should then consider if notification to the national authority);
- find it has jurisdiction, but the proposed merger does not raise serious doubts as to its compatibility with the common market; or
- initiate proceedings and conduct an in-depth investigation (Phase II investigations) if it considers that the proposed merger raises serious doubts as to its compatibility with the internal market.

If the Commission commences Phase II investigations, it must make a decision within 90 working days of the date on which such investigations are initiated. The period may be increased to 105 working days if the undertakings concerned offer commitments to ensure that the merger will not obstruct competition. Upon the conclusion of Phase II investigations, the Commission may clear the concentration (subject to certain conditions) or declare the concentration incompatible with the internal market.

It should be noted that, given the complexity of mergers in the energy sector, pre-notification to the Commission is advisable, and such pre-notification can add to the timetable generally.

President of the Office of Competition and Consumer Protection

Transactions that do not raise significant competition issues are reviewed in Phase I within one month from commencement. More complex transactions are reviewed in Phase II within an additional four-month period. If the waiting period expires without any response from the President, the transaction is deemed approved. The above-mentioned time limits do not start until all undertakings concerned file their notifications. The time limits do not include the periods necessary to perfect the notification or supplement necessary information, or the time until the fee is paid.

The notifying parties must refrain from carrying out the transaction until they obtain a decision of the President of the OCCP, or until the deadline for a ruling on the matter.

As part of the proceedings leading up to the issuance of a decision permitting the concentration, the President of the OCCP will examine whether the concentration will significantly limit competition in the market. The authority may only issue a decision prohibiting the concentration if the concentration would significantly limit competition, meaning more specifically the creation or strengthening of a dominant position in the market. If the planned transaction raises serious concerns under competition law, the authority may establish conditions that must be fulfilled by the parties in order to obtain consent to the concentration.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

On the EU level, the European Commission can enforce articles 101 and 102 of the Treaty on the Functioning of the European Union (TFEU). On the national level, the President of the OCCP has the general authority to investigate and prosecute anticompetitive behavior set out in the Act on Competition and Consumer Protection or the relevant provisions of the TFEU. The President of the OCCP may act as long as the Energy Law Act does not explicitly reserve certain powers to the President of the ERO. In matters regulated by specific provisions of the Energy Law, the President of the ERO is the entity responsible for the development of competition in the energy market.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

The Act on Competition and Consumer Protection prohibits agreements between undertakings that are intended to or which have the effect of preventing, restricting or distorting competition within Poland and may affect trade within Poland. Certain agreements may be exempt if they yield benefits that outweigh any anticompetitive effects, or if they fall within one of the categories of agreements that benefit from a block exemption. Article 101 TFEU contains the same restrictions as the Act on Competition and Consumer Protection, except it applies to agreements that have an EU-wide impact. The TFEU also contains several exemptions to article 101, including block exemptions.

The Act on Competition and Consumer Protection prohibits any conduct that amounts to an abuse of a dominant position on the relevant market. Similarly, article 102 TFEU prohibits abuse of a dominant position as applied to trade between EU member states. In order to assess whether an undertaking enjoys a dominant position, it will be necessary to identify the product and geographical market, and assess the relevant undertaking's position within that market. Very broadly, there is a presumption of a dominant position if an undertaking has over 40 per cent of the market share.

Any agreement that falls within the ambit of the Act on Competition and Consumer Protection or article 101 or any legal action that amounts to the abuse of dominant position is void and unenforceable.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The President of the OCCP or the Commission may take certain actions if an undertaking has intentionally or negligently breached competition rules. If an undertaking has breached article 101 TFEU or relevant provisions of the Act on Competition and Consumer Protection, it may be fined up to 10 per cent of its worldwide group turnover and be ordered to cease the operation of an anticompetitive agreement. Any anticompetitive agreement made in contravention of Article 101 TFEU or the relevant provisions of the Act on Competition and Consumer Protection void and unenforceable. If an undertaking has breached article 102 TFEU or the relevant provisions of the Act on competition and consumer protection, it may be fined up to 10 percent of its worldwide group turnover and be ordered to cease or modify its conduct. The Commission and the President of the OCCP may impose structural or behavioural remedies that are proportionate to the anti-competitive behaviour. The President of the OCCP may impose a fine of up to 2 million zloty on a managing person who intentionally permitted the entrepreneur to breach the prohibition of the anticompetitive agreements.

Pursuant to the Act on Competition and Consumer Protection, the President of the OCCP may impose a fine of up to 10 per cent of revenues from the previous year, if an enterprise, even unintentionally, carries out a merger or acquisition without obtaining the President's prior consent. Furthermore, if a merger is proved to have been anti-competitive, structural sanctions may also be applied. The President of the OCCP is also authorised to fine persons exercising managerial functions (up to the amount of 50 times average monthly salary that fail to notify the concentration to the President of the OCCP.

Under the Energy Law Act, the President of the ERO may impose a fine of up to 15 per cent of revenues from the previous year in case of anticompetitive practices or in case of a breach of other duties imposed by the regulator.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

As the biggest Polish energy companies are at least partially state-owned, restrictions on acquisitions are imposed by the Act on Special Rights of the Minister of Treasury in certain companies operating in the electricity, petroleum and gas fuels industry. On its basis, the Minister of the Treasury is able to withhold the acquisition of shares in a particular company, in situations where there is a risk of a breach of national security. An electricity TSO must remain 100 per cent state-owned entity.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

The construction of interconnections will fall under the general requirements of the investment process, including an environmental decision and permits for localisation, construction and usage.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Cross-border supply is regulated under the general requirements of the electricity market set out in the Energy Law Act and the industry codes (as the Instruction on the Traffic and Operation of the Transmission Network approved by the President of the ERO). Interconnectors must provide non-discriminatory access in accordance with European legislation and the TPA rule.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The unbundling rule required by EU energy law, based on the separation of functioning at the legal, financial and operational level, was also codified in the Energy Law Act. The extent of such separation varies depending on the nature of the company – the regulations are different for TSO, DSO and storage system operators.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

Under the Energy Law Act, the President of the ERO can impose financial penalties up to 15 per cent of revenues from the previous year.

WHITE & CASE

Tomasz Chmal **tchmal@whitecase.com**

ul Marszałkowska 142
00-061 Warsaw
Poland

Tel: +48 22 50 50 100
Fax: +48 22 50 50 400
www.whitecase.com

Portugal

António Vicente Marques
AVM Advogados

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Following EU policy, electricity regulation in Portugal has suffered several changes as regards the liberalisation and unbundling process of the electricity sector. It is also worth noting that common rules for the internal market in electricity are established in EU Directives 96/92/CE, 2003/54/EC and 2009/72/CE, which have been transposed by the member states. Since its accession to the EU in 1986 Portugal has been transposing these directives and following EU ruling in this matter, in order to create a free competitive market in electricity. A number of laws have led to this transformation, including Decree-Law No. 29/2006, of 15 February 2006, as amended and republished by Decree-Law No. 215-A/2012, of 8 October 2012 and by the Decree-Law No. 178/15 of 27 August 2015, which sets the basis of the national electrical system (SEN), and Decree-Law No. 172/2006, of 23 August 2006, as amended and republished by Decree-Law No. 215-B/2012, of 8 October 2012 and by Law no. 7-A/2016 of 30 March 2016, which governs the SEN and provides the legal regime for the production, transport, distribution and commercialisation of electricity, as well as the switching of electricity suppliers.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

In Portugal, the electricity market and the SEN are currently organised into four groups:

- Production – Decree-Law No. 172/2006 provides the ordinary regime of electricity production from article 4 to 33-C (Chapter II) and a special regime of electricity production from article 33-D to 33-Z (Chapter III). Under the ordinary regime, the production of electricity depends on the issue of a licence by the competent authorities. The special regime (under which licensing is not always mandatory) covers, for example, cogeneration, micro and mini-production, and is associated with government incentives to production by renewable resources.
- Transport – there is a transmission network which is regulated by Order No. 596/2010 of 30 July. This activity is exercised in an exclusivity regime and the entity that is in charge of the transmission network has a considerable number of duties defined in article 24 of Decree-Law No. 29/2006, such as forecasting the necessary level of reserves to ensure the supply in the short and medium term or ensure the long-term capacity of the national transmission network, contributing to the sustainability of supply.
- Distribution – the national distribution network is separate from the low-voltage grid. In respect of the first, an exclusivity regime is legally provided. As to the second, there is the possibility for competent municipal authorities to enter into contracts with private entities to grant them distribution licences.
- Marketing and supply – Decree-Law No. 29/2006 provides open access to electricity commercialisation activity, only requiring prior registration. After obtaining a licence, the supplier can buy and sell electricity to provide it to end-customers or other agents by entering into bilateral contracts. Article 43 of this legislation specifically provides that the commercialisation activity must be deemed separate from the other activities.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The production of electricity is exercised in an open regime. However, it is worth noting that the competent administrative authorities must issue a licence in order to authorise such production. Article 6 of Decree-Law No. 172/2006 encompasses the general criteria that these authorities must take into consideration to be granted a licence. They include:

- the potential contribution for the realisation of energy policy aims, especially regarding the promotion of supply;
- production technology, bearing in mind its contribution to the aims of the environment policy and to the flexibility of the operation of the electrical system;
- the specific characteristics of the applicant, namely its technical, economic and financial capacity; and
- the existence of conditions for connection to the public network, appropriate to the management of its electricity reception capacity.

The special regime for private consumption and small production units, however, provides different access rules for production. For example, according to Decree-Law No. 153/2014 of 20 October, any legal or natural person is permitted to have a production unit as long as:

- they have an electrical energy utilisation installation with effective energy consumption and, if that installation is connected to the public service power grid, are part of an electricity purchase agreement with a supplier;
- the connected load is less than or equal to 100 per cent of that agreed in the purchase agreement;
- the installed capacity of the production unit is not higher than double the connection capacity (in case of production units for private consumption); and
- in case of small production units, the power used in the installation is equal to or higher than 50 per cent of the power produced in the respective unit.

Ordinance No. 14/2015 of 23 January, as amended by Ordinance 60-E/2015 of 2 March 2015, provides complementary information on the procedures to be adopted as to the exploitation of private consumption units.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

Small producers that generate any form of renewable energy from small units by using a single production technology and that have a total capacity for connection to the grid equal or inferior to 250kW may totally sell the energy they produce by connecting to the grid. According to article 7 of Decree-Law No. 153/2014 of 20 October 2014, these small producers are entitled to enter into sales agreements

regarding the full amount of energy produced by their units, provided that certain conditions are met (for instance, the producer must hold a definitive certificate issued by the competent authorities, pay the costs related to the electricity meters, hold a civil liability insurance policy, pay a monthly compensation, etc).

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The government's policy of encouraging the use of renewable energy has grown in importance owing to the country's dependence on fossil fuels. Therefore, environmental and sustainability policies have been developed to raise awareness among the Portuguese population. The National Plan for Energy Efficiency 2016 (as a short-term goal) and the National Plan for Renewable Energy 2020 (as a medium-term goal), both approved by Council of Ministers Resolution No. 20/2013, aim to comply with EU objectives as they are defined in the Renewable Energies Directive (Directive 2009/28/CE), establishing that, at national level, it is necessary to streamline resources. Statistics point to an increase in dependence on energy and, therefore, several targets have been set in relation to renewable energy; among others, it is aimed that renewable energy constitutes, at least, 35 per cent of the energy consumption in 2020 and the generation of 60 per cent of end-use electricity consumption in 2020.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Climate change has not been forgotten in Portuguese legal policies; there are currently several provisions related to this matter. For example, article 6 of Decree-Law No. 172/2006 provides that the potential contribution for the formalisation of environmental policies, namely those that derive from the Kyoto Protocol, and the control of emissions of acidifying substances, are some of the criteria that must be taken into account when the competent authorities are considering granting an electricity production licence. Further, this legislation follows the idea that, notwithstanding public commitment to the provision of energy supply services, these must be rationalised and take into consideration environmental protection, namely through energy efficiency and through the promotion of renewable energy.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The Portuguese regulatory framework does not regulate extensively the matter of electricity storage (except for specific situations such as pumping in hydroelectric power stations or self-consumption production), but reference must be made to the REStable Project – Improvement of Renewables-based System Services Through Better Interaction of European Control Zones, of which INES TEC is the only Portuguese partner. The main goal of this project is to improve and develop services based upon renewable energies and energy storage systems.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

As far as we are aware, there are currently no government plans regarding the creation of nuclear projects. Portugal does not have any nuclear capacity, therefore there is no policy regarding its implementation.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

As stated in question 2, transmission activity takes place in an exclusive regime, determined by a public tender, unless it is attributed to an entity that is under the effective control of the Portuguese state, by a concession contract entered into between the competent entity in charge and such entity (this contract is subject to special rules of public procurement). The operator or concessionaire is also subject to certification, in order to evaluate the compliance of the previously mentioned conditions of legal and financial independence. The authority responsible for this certification is the Electricity Sector Regulatory Entity (ERSE), which must also follow up such compliance. Notwithstanding this, the ERSE certification is effective only after issuance of an opinion, in accordance with article 3 of Regulation (EC) No. 714/2009 of 13 July 2009 by the European Commission, once ERSE has notified it and provided all the relevant information. The services provided by the concessionaire must always respect the established standards of the Services Quality Regulation (Regulation No. 455/2013 of 30 October 2013).

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

As stated above, no entity besides the one to which the licence is granted may have access to the transmission network. Therefore, the requirements to accede to the transmission network are the same as the above mentioned: there is a public tender, which is carried out and appreciated according to certain criteria and that establishes certain obligations for the concessionaire in exchange for this exclusivity.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Bearing in mind that the transmission network is not liberalised (being, therefore, part of the regulated market), the expansion of the network is not accessible for private entities – this is the reason why the government has not yet been tempted to create incentives (such as tax benefits) for its expansion. However, the concessionaire must develop, on a regular basis, a plan detailing the development and investment of the transmission network.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The concession agreement provides most of the conditions and terms for the transmission of electricity. ERSE, however, has an important role in this matter by the issuance of several regulations that are currently available to the public. For example: the Transport Network Regulation, the Tariff Regulation, the Regulation of Access to the Networks and Interconnections and the Network Operation Regulation. Other requirements or standards may also be found in general electricity legislation, such as Decree-Law No. 29/2006 or Decree-Law No. 172/2006.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The main entity responsible for ensuring the reliability of the transmission network is ERSE, as referred to in article 25-A of Decree-Law No. 29/2006. ERSE is a public legal entity, with administrative and financial autonomy, which aims to protect consumers (especially the most vulnerable consumers) on issues such as prices, service quality and access to information, reliability of the supply and promotion

of the competition between the agents of the liberalised market. Its articles of association are provided in Decree-Law No. 97/2002 of 12 April 2002, as amended by Decree-Law No. 84/2013 of 25 June 2013. ERSE must prepare and issue the Tariff Regulation, as well as review it. Periodically, and bearing in mind the opinion of Commerce and Competition entities, ERSE must also establish the values and prices to be applied. Among other powers and responsibilities, ERSE can still determine that the concessionaire must indemnify the consumers if, under certain circumstances, the quality standards are not fulfilled.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

As stated in question 2, the national distribution network is separate from the low voltage grid. As to the first, there is an exclusivity regime legally provided. As to the second, there is a possibility of competent municipal authorities entering into contracts with private entities in order to grant them distribution licences.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

No other entity besides the one to whom a licence is granted (the concessionaire) may have access to the distribution network. Therefore, the requirements to accede to the distribution network are the same as those above for the transmission network: in the national distribution network there is exclusivity, and, therefore, the concessionaire is under certain obligations in exchange for this exclusivity. These obligations include ensuring the network's reliability over the long term, in order to attend to reasonable requests for electricity distribution, and ensuring the planning, construction and management of the network, to allow access to third parties and efficiently manage the facilities.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Within the scope of the Decree Law 29/2006, of 15 February 2006, it is guaranteed the planning, construction and the management of the grid, in order to allow the access to third parties and the management of the installations in an efficient way. Note that article 41 provides also an obligation to the operators of distribution grids to elaborate, every two years, the planning of development and investment for the next five years, based on the technical characterisation of the grid and the actual offer and demand, after consulting interested parties.

It should also be highlighted that, according to article 125 of Regulation No. 551/2014, 15 December 2014 (Tariff Regulation), the incentive to the investment in the 'smart grid' intends to stimulate the grid distribution operator to carry out pilot projects and investments in distribution grids on the context of the 'smart grid' concept, with the objective of reducing the costs of exploration in the company and the capture of other benefits quantifiable from the perspective of other agents of the National Electric System, namely for consumers. This incentive is applicable to the operator in Portuguese mainland, according to article 94. Further, article 127 of this diploma states that the distribution grid operator on the Portuguese mainland must communicate to ERSE (yearly, until 1 May) the necessary information in order to determine the incentive to the investment in smart grid. After the application for each project regarding smart grid is validated and accepted by ERSE, information referring to the benefits must be updated, by the operator, every two years, until 1 May (other studies conducted by the company or by external entities with the purpose to evidence and quantify the benefits can be gathered). Additional rules determined by ERSE itself must be followed within this procedure.

Finally, it must be noted that Decree Law No. 50/2010, of 20 May 2010, creates the Energetic Efficiency Fund (FEE), established on the National Plan of Action towards Energetic Efficiency (PNAEE). The FEE has as an objective to finance the programmes and measures provided in the PNAEE, which are included in the attachment to the Council of Ministers Resolution No. 80/2008, 20 of May 2008, and provide the support to actions that have as main goal energy efficiency regarding behaviours, tax and incentives and financing.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

The concession agreement provides most of the conditions and terms of the distribution of electricity. ERSE, however, has an important role in this matter, by the issuance of several regulations that are currently available for public access, for example, the Distribution Network Regulation; the Tariff Regulation; the Regulation of Access to the Networks and Interconnections; and The Network Operation Regulation. Other requirements or standards may also be found in electricity general legislation, such as Decree-Law No. 29/2006 or Decree Law No. 172/2006.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

According to article 42 of Decree Law No. 29/2006, electricity commercialisation is free, but requires a previous registration of the agent. This activity is considered by law as the purchase and sell of electricity, for commercial purposes, to final customers or other agents, through bilateral agreements or organised markets. Energy traders have specific obligations, such as to:

- present energy supply proposals to every customers that request for it according to the Commercial Relations Regulation, respecting, however, the principles of competition law;
- cooperate with the promotion of the energy efficiency and demand management; and
- provide all necessary information to customers, namely in relation to the most appropriate offers regarding their consumption profile. The registration procedure requires that the applicant present some information, such as an authorisation of disclosure or a statement regarding its ability to exercise the commercialisation activity.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

The supplier establishes a price for the electricity, to which is added a regulated tariff for access to the network. The rules applicable to the criteria and methods for determining tariffs and prices for electric energy to be provided by the entities, as well as to the definition of the regulated tariffs and respective structure, calculation process and determination of tariffs, allowed profits, procedures, its amendment and publishing and entities' obligations, are currently provided in Regulation No. 551/2014 of 10 December 2014. Decree Law No. 138-A/2010 of 28 December 2010, as amended by Law No. 7-A/2016 of 30 March 2016, also created a social tariff for the supply of electric energy to the most economically vulnerable consumers, which consists in a discount determined by ERSE.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

This is a liberalised market, being subject to the rules of supply and demand. In this context, note the existence of MIBEL, a daily market where the electricity is negotiated. The market price is determined through a process whereby the supply and demand offers are organised on an hourly basis.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

According to Decree-Law No. 29/2006, energy suppliers must, for instance:

- supply electricity to grids in order to supplying their customers just the way it was planned and complying with the applicable legislation;
- cooperate in the promotion of energy efficiency policies and in the promotion of the demand management policies according to the applicable legislation;
- issue detailed invoices, as legally required;
- not discriminate between customers and to be geared to commercial transparency;
- keep a record of all commercial operations, complying with the legal obligations for the maintenance of databases, for a minimum period of five years, and being subject to audit, according to the Commercial Relations Regulation;
- provide information to the authorities on the consumption and tariffs of the different customer categories, notwithstanding their secrecy duties; and
- keep the technical, legal and financial ability to the performance of their functions.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The following are some of the authorities with regulatory powers within the electricity sector: ERSE, the State Energy Department, the Portuguese Environmental Agency, the Competition Authority and the Ministry of Environment, Spatial Planning and Energy.

23 Scope of authority

What is the scope of each regulator's authority?

ERSE is a public legal entity with administrative and financial autonomy, which aims to protect consumers (especially the most vulnerable consumers) in respect of issues such as prices, service quality and access to information, reliability of the supply and promotion of the competition between the agents of the liberalised market. Its articles of association are provided in Decree-Law No. 97/2002 of 12 April 2002. The State Energy Department belongs to the Public Administration and aims to contribute to the energy and geological resources policy's definition, promotion and evaluation, bearing in mind sustainable development and guarantee of supply. The Portuguese Environmental Agency is a public institute within the ambit of the Ministry of the Environment, Territory Management and Energy, whose mission is to propose, develop and monitor, in an integrated and participative manner, public policies on the environment and sustainable development, in close cooperation with other sector policies and public and private entities. The Competition Authority has regulatory, supervisory and disciplinary powers to propose laws to the competent institutions and approve regulations required to enforce a competitive environment, propose and approve codes of conduct and best practices and prepare and decide on antitrust cases, using sanctions or preventive measures. The Ministry of Environment, Spatial Planning and Energy is in charge of national environmental and energy policies, as well as related regulations.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

All of the above-mentioned regulatory authorities are public. If some of them are expressly dependent on the government (for instance, the Ministry of Environment, Spatial Planning and Energy or the State Energy Department), others have autonomy, such as ERSE (an independent administrative authority).

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Without prejudice to the fact that each one of these entities has specific means of appealing or challenging its decisions, it should be noted that all of them are public entities. Therefore, the general means of reaction against illegal decisions taken by public entities (administrative and judicial litigation) provided by public law may be applicable, in respect of the principle of effective judicial protection.

Update and trends

Recently, and according to information provided by ERSE, the liberalised market achieved in February 2016 a total of 4.45 million clients accompanied by a net amount of 33,000 clients when compared with January of the same year. Most of the biggest Portuguese consumers are now on the liberalised market, according to the same source. Statistics show that at the end of 2015 the liberalised market had achieved a total of 4,377 million clients, which represented a growth of 23 per cent when compared to the 3,562 million clients registered by the end of 2014. The liberalised market represented, in December 2015 more than 89 per cent of the total consumption in mainland Portugal and about 72 per cent of the total number of clients.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The Competition Authority has regulatory powers on competition over all sectors of economy, including the regulated sectors, the latter in coordination with the relevant sector regulators. The Competition Authority has also, according to its articles of association, the power to identify the behaviours that can breach the national and European competition legal framework – namely if those behaviours consist of practices leading to competition restriction and the control of concentrations – being able to investigate and take decisions and, when needed, to apply sanctions and other legally provided measures. This authority may also apply fines and preventive measures. Its decisions are not only susceptible to administrative claims or appeals, but a judicial proceeding may also be started in the Supervision, Regulation and Competition Court. Despite the above, ERSE is also empowered by its articles of association to ensure that competition rules are respected by the entities subject to its authority.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Mergers, acquisitions and other transfers of control within the electrical sector must not jeopardise the free competitive market in electricity. The principles of the liberalised market must be respected. The referred entities, with authority to regulate the market, particularly the Competition Authority, are bound to certain time frames for any decision.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

In addition to the information in question 26, and as previously mentioned, the Competition Authority has powers to identify the behaviours that are capable to breach the national and EU competition legal framework, namely if those behaviours consist of practices that lead to restriction of competition. Therefore, it is its mission to punish anticompetitive or manipulative practices. It is worth noting that the Competition Authority has regulatory powers on competition over all sectors of the economy, including the regulated sectors, the latter in coordination with the relevant sector regulators.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

When market players' conduct restricts or distorts competition in the market such behaviour is likely to be deemed an anticompetitive practice. In Portugal, the Competition Authority is responsible for the detection and investigation of such practices, and may apply sanctions where appropriate. It is the Competition Authority's mission to ensure the enforcement of competition rules in Portugal to guarantee the principles of an open market economy and free competition, in turn ensuring the efficient functioning of markets, a high level of technical progress and the pursuit of consumers' interests.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

As previously mentioned, the Competition Authority has regulatory powers on competition over all sectors of the economy, including the regulated sectors, the latter in coordination with the relevant sector regulators. ERSE, as its own name indicates (Electricity Sector Regulatory Entity), is the regulator of the electricity sector in Portugal. Therefore, it has a duty to cooperate with the Competition Authority in the detection and definition of anticompetitive measures.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

As far as we are aware, there are no specific rules on the ownership or acquisition of interests in the electricity sector by foreign companies. However, some procedures (namely those regarding concessions) may be a little more demanding if the company is owned (to a significant degree, at least) by foreign (or, to be more precise, non-EU) entities.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

Considering the total openness of the Portuguese electricity market, the Regulation on the Access to the Grid and Interconnectors, established by Regulation No. 560/2014, of 22 December 2014, states in article 8 that the right of access to the grid and interconnectors is automatically recognised to all entities when the process of connection to the grid and its installations, established in the Regulation on Commercial Relationships, is concluded.

Article 8.2. of the Regulation establishes that the right of access is to be formalised with the celebration of a 'Contract of Use of Grids', its object being the conditions related to the use of the grid and interconnections. This contract is entered into between the grid's operators and the users or those who represent them. Article 10 defines, additionally, the conditions that 'Contracts of Use of Grids' should mention, as well as other aspects related to their terms, suspension and termination.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Portugal has recently faced an increase in electricity imports owing to a shortfall in 2012. This importation, of course, highlighted the dependence of the country on non-renewable resources. Therefore, and as previously mentioned, there are targets which must be achieved in relation to renewable energies, including the constitution of at least 35 per cent of energy consumption in 2020 and the generation of 60 per cent of end-use electricity consumption in 2020. Those were provided in the National Plan for Energetic Efficiency 2016 and in the National Plan for Renewable Energy 2020, both approved by Council of Ministers Resolution No. 20/2013.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Decree-Law No. 29/2006 of 15 February 2006 expressly provides the definition of vertically integrated undertaking, which is relevant to ensure independence in the activity of independent transmission operator, as well as activity of the distribution system operator. It is also intended to ensure that anticompetitive or manipulative activities are not undertaken, to avoid discriminatory behaviours and ensure normal market conditions in respect of the arm's-length principle.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

The entities mentioned in question 34 are subject to ERSE's ruling and supervisory powers.

António Vicente Marques **avm@avm.biz**

Rua Carlos Alberto da Mota Pinto
Amoreiras Square, No. 17 – A, 6º B
1070-313 Lisbon
Portugal

Tel: +351 304 501 010
Fax: +351 304 501 009
www.avm.biz

Russia

Adam Smith and Marina Rodina
White & Case LLC

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Policy

The Russian power sector underwent a programme of fundamental reform in the early 2000s involving the break-up of the fully integrated state power monopoly (RAO UES), privatisation and the introduction of diversity of ownership and competition in generation and supply. The reforms were largely completed in 2014, but aspects of the market and the regulatory regime continue to evolve.

One objective of the reform programme was to modernise and expand Russia's thermal generation capacity in order to replace old, inefficient plant with CCGT and high-efficiency coal generation and thereby meet expected growth in demand for power. This was reflected in the programme of agreements for the delivery of capacity under which the 20 thermal generation companies spun off from RAO UES were contracted to build or refurbish over 120 thermal generation units (together representing approximately 25GW of capacity) in return for capacity payments over a 10-year period. The last of these projects is now due to be completed in 2018.

More recently the transmission and distribution sectors have been a major focus of legislative activity, including a number of measures intended to curb tariff growth by excluding small networks from the tariff system. Other recent legislative initiatives address the cross-subsidies that continue to exist in the market, the promotion of renewable energy, reform of the capacity market and payment discipline.

Legislative framework

The legislative structure for the power sector is complex and comprises a large body of primary and secondary legislation, as well as a number of agreements, entry into which is mandatory for market participants. The main primary legislation is contained in Federal Law dated 26 March 2003 No. 35-FZ 'On the Electrical Power Industry'. The basic rules for the wholesale power and capacity market are contained in Resolution of the Government of the Russian Federation dated 27 December 2010 No. 1172 'On the Establishment of the Rules of the Wholesale Market for Electrical Power and Capacity and the amendment of certain acts of the government of the Russian Federation concerning the organisation of the functioning of the Wholesale Market for Electrical Power and Capacity', and the rules for the retail market in Resolution of the Government of the Russian Federation dated 4 May 2012 No. 442 'On the functioning of retail markets for electrical power and the full and/or partial restriction of use of electrical power'.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

General

Subject to limited exceptions, there is a requirement for full ownership unbundling as between contestable and natural monopoly activities, so the generation and supply companies are mostly separate from the network operators. The generation sector is dominated by the six wholesale thermal generation companies and 14 regional thermal generation companies formed under the privatisation programme, the nuclear generator Rosenergoatom and the hydroelectric generation company PJSC 'RusHydro'. A single high-voltage transmission grid operated by the Federal Grid Company 'FGC UES', PJSC (FGC) covers much of the country. There are 11 interregional distribution companies that represent the majority of the distribution market, but also a very large number of smaller local network operators. The supply sector is geographically fragmented and dominated by multiple local suppliers of last resort, referred to as guaranteeing suppliers.

Geography and the wholesale and retail markets

Russia's size and disparate levels of population density are reflected in significant regional variations in the regulatory regime. A single interconnected power system (called the unified power system or UPS) covers most of the more populous parts of the country, stretching from the western borders to the Pacific Ocean. In addition, there are eight isolated regional power systems that are not connected to the UPS, as well as a number of smaller isolated networks. Within the area covered by the UPS, the market is formally divided for regulatory purposes into wholesale and retail levels. Outside of this area (including within the territories of the isolated systems) there is a single-tier retail market.

The territory of the wholesale market is further subdivided into zones, categorised as either pricing zones or non-pricing zones. For the most part, the policy of power market liberalisation applies only to the pricing zones of the wholesale market. In other areas (including the non-pricing zones and the isolated systems) power is subject to tariff regulation for most purposes.

There are two pricing zones. Zone 1 comprises most of European Russia and the Urals region. Zone 2 covers the southern parts of Siberia (including most major centres of population). The non-pricing zones include Kaliningrad region, the Komi Republic, Arkhangelsk region and a large area comprising the parts of the Russian Far East covered by the UPS.

Power market

Within the pricing zones most power is traded through the day-ahead market, which is a bilateral hourly spot market. It is also possible for market participants within a given pricing zone to conclude bilateral agreements with each other for the sale and purchase of power at freely negotiated prices, and bids are submitted in the day-ahead system both for buying and selling power in the spot market and for procuring the dispatch and offtake of power in fulfilment of bilateral agreements. The day-ahead market is based on locational marginal pricing, with a separate equilibrium price being determined for each system node for each hour of the day. As at 1 January 2016, there were 8,777 nodes. Price-taking bids are possible, and mandatory for certain minimum output, including quantities of power required to be generated by combined heat and power (CHP) stations in conjunction with the production of heat. Priority of dispatch is given to price-taking bids for certain nuclear and hydroelectric power, CHP and generation fuelled by associated petroleum gas. After the 'must-run' generation, priority is given to quantities bid for the purposes of fulfilling bilateral agreements. There is additionally a balancing market through which power is traded to reflect deviations of a generator's or buyer's actual real-time output or consumption in a given hour from its planned output or consumption as derived from the day-ahead market.

Capacity market

The wholesale market includes a capacity market intended to ensure sufficiency of capacity to meet future demand and to allow generators the opportunity to recover a proportion of their fixed costs through capacity payments. The basis of the capacity market is a regulatory obligation imposed on buyers of power on the wholesale market to buy capacity in an amount reflecting their peak-hour power consumption. In order to fulfil a contractual obligation to supply capacity, a generator must maintain its equipment in readiness to generate, as that is defined by the regulations.

The centrepiece of the capacity market is a system of annual tenders for the forward procurement of capacity referred to as the competitive selection of capacity (CSC). In 2015 the CSC began to operate on a long-term basis, with capacity being procured for delivery in the year commencing three years after the year of the tender. Bids can be submitted in respect of both existing capacity and capacity planned for future construction. The CSC generates a single equilibrium price for capacity within each pricing zone.

The rules also enable the Russian government to designate generating facilities that are not selected in CSC but whose capacity is nevertheless needed for system reasons (including CHP capacity needed for the production of heat) as being subject to a compulsory regime of capacity provision. Up to 12.8GW of capacity is to be supplied under this system in 2017.

The CSC system exists in parallel with a number of types of statutory long-term capacity agreements for new generation projects, including the agreements for the delivery of capacity for thermal generation. These agreements impose an obligation on the generator to deliver newly constructed or upgraded capacity by a given date in return for capacity payments calculated under a formula and paid over a fixed pay-back period. The cost is spread across all wholesale market buyers of power in the relevant pricing zone.

Ancillary services

There is a system for ancillary services to be procured on the market by the system operator, including certain primary and secondary frequency regulation services and services for the management of reactive power.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Construction, operating and environmental permits

Construction of generation facilities is subject to generally applicable Russian construction law, in particular the Urban Development Code. In most cases, the principal authorisations needed for construction works are a land plot development plan, approval of the design documents following expert review, a construction permit and an operating permit. Depending on the type and location of the facility, the developer may also need other permits, including an expert ecological review.

Generation facilities may be hazardous industrial facilities for the purposes of Russian law, meaning that the operator requires a special operating licence and must carry mandatory liability insurance.

Russian environmental law operates a principle of 'pay-to-pollute', and certain activities ancillary to the operation of a generation facility, such as emissions to air and discharge of pollutants into water bodies, require a relevant permit or quota to be obtained from the competent authorities. Other environmental requirements include the establishment of a sanitary protection zone around the generation facility. Nuclear generators are subject to a specific regulatory regime regarding safety.

Admission to the power market

In principle generation can operate on either the wholesale or the retail market. The minimum size requirement for a station to be on the wholesale market is 5MW. Subject to limited exceptions, stations having a capacity of 25MW or more connected to the UPS can only operate on the wholesale market. Outside of the wholesale market area, all generation is subject to the retail market rules.

In order to be registered as a participant in the wholesale market and admitted to the trading system, the generator must fulfil a number of technical requirements, including installing the required metering systems and system for communication with the system operator. In addition, all market participants must enter into an agreement with the regulatory authorities called the 'Agreement on Accession to the Trading System of the Wholesale Market' (Accession Agreement), which documents the detailed rules of the market. They must also enter into a number of standard form agreements, including agreements for transmission and dispatch and a number of compulsory agreements relating to power and capacity trading.

In order for a generator to receive capacity payments, the maximum available capacity of its plant must have been confirmed by a process of attestation by the system operator, requiring testing to be performed at least once every five years.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

The FGC must offer connection to the grid on a non-discriminatory basis, meaning that any entity that fulfils the applicable criteria must be allowed to connect to the grid where that is technically possible. There is a set procedure for the connection process, including conclusion of the connection agreement and implementing the relevant measures to effect the connection. The measures include agreeing the technical conditions for the connection (which, in the case of generation of over 5MW, require the approval of the system operator) and preparing project documentation in compliance with the technical conditions.

Where the connection would require expansion of the network that is not provided for in the FGC's investment programme, connection is possible on the basis of an individual project, meaning that an application must be submitted to the tariff-setting authority (supported by relevant technical and other information) to determine a price for the connection, including the relevant works.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

There is a system of support for renewable generation on the wholesale market in the form of a specific category of long-term capacity agreement, eligibility for which is determined by annual tender. The system is open to solar, wind and small-scale hydroelectric projects within the pricing zones. Projects of each type are selected up to a target quantity for each year. The extensive readiness requirements applicable to conventional generation capacity are largely disapplied in respect of renewables. Separately, on the retail market, operators of distribution networks are subject to a regulatory obligation to buy power for the purposes of compensating for network losses from renewable generators in the first instance. For this purpose, new renewable generation projects on the retail market are included in regional generation plans on the basis of tender. There are also various tax incentives (including deferral of payment of tax, accelerated depreciation rates and a temporary property tax exemption) for renewables and provision for state subsidy of the network connection costs of smaller renewable projects.

The state also encourages the development of large-scale hydroelectric generation through the investment programme of RusHydro (which is subject to approval by the Ministry of Energy) and long-term capacity agreements for certain of its projects.

Russia has very extensive installed CHP capacity used for the provision of district heating, and the programme of agreements for the delivery of capacity includes projects at a number of CHP stations.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

As noted above, Russia has implemented renewable support mechanisms the cost of which is borne by power consumers, but their impact is likely to be relatively small – the government's target is to achieve 4.5 per cent of power generation using renewables by 2024. The renewables

support mechanisms are part of Russia's broader energy efficiency programme, which includes rules requiring the network operators to develop and implement energy efficiency measures as part of the tariff setting process.

The Ministry of Natural Resources and Ecology is currently working on measures for the reduction of greenhouse gas emissions to implement the 2015 Paris Agreement, which may include a carbon tax. The relevant plan is due to be adopted by September 2017.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

The current investment programme of RusHydro includes the upgrading of two pumped storage plants under long-term capacity agreements. It was reported in June 2016 that the Ministry of Energy and Rusnano, the state nanotechnology investment vehicle, have been tasked by the government with developing a system of state support for research and development of industrial power storage technologies.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Russia's energy strategy to 2030 includes plans to decrease dependence on fossil fuel generation by increasing the use of nuclear and renewable generation. The investment programmes of nuclear generators are subject to state approval, and nuclear generation is supported on the wholesale market by long-term capacity agreements for designated projects.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

The UPS is served by a single high-voltage transmission network referred to as the Unified National Electrical Grid. All transmission infrastructure meeting certain criteria, including all lines of 330kV and above and certain lines of 100kV and above, is allocated to the grid by law irrespective of ownership, and the management of all infrastructure comprised in the grid is conferred by law on the FGC. The FGC exercises the rights of other owners of infrastructure allocated to the grid on their behalf and is the sole entity that contracts with third parties for the provision of transmission services.

In general, construction and operation of transmission networks is subject to the same construction and planning regime as described in response to question 3. Instead of a land plot development plan, the developer must provide the details of certain territorial planning documents for the relevant region. The developer also needs to obtain the necessary rights to each of the land plots underlying the network, which can entail significant expenditure in time and cost. Recent amendments to Russian land law allow for easements (as opposed to leases) to be granted over public land for the purposes of constructing power networks and introduce an exemption for facilities designated for power supply from the general rule that leases of public land may only be awarded by tender. A draft law has recently been drawn up by the Ministry of Economic Development which, if passed, would significantly simplify the procedure for construction of transmission networks by eliminating the requirement for construction approvals in many cases and simplifying the procedure for obtaining necessary land rights.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Transmission services are in principle available to the owners of load and third party networks duly connected to the high voltage grid, suppliers representing such load and power exporters/importers. As with generation, connection of load to the grid must be offered on a non-discriminatory basis. As a general rule, load is only permitted to be connected directly to the transmission grid if the voltage of the connection is 110kV or more. Depending on the nature of the load, the technical conditions can include fitting certain equipment, including equipment to regulate consumption of reactive power. For larger connections, the system operator must approve the technical conditions and the associated project documentation. In order to receive transmission services through the grid, the relevant entity must have an agreement in respect of the provision of dispatch services in place with the system operator.

Certain regions have been permitted to retain on a transitional basis the 'last mile' arrangements, whereby parts of the high voltage grid to which industrial load is directly connected are leased to local distribution companies, so forcing the industrial consumer to contract with the distribution company for transmission and thereby subsidise smaller consumers. This system is due to be phased out by 2029, and the tariff rules provide for progressive elimination of the associated cross-subsidy, partly compensated for by a system of state support.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

The Russian government has a policy objective of expanding and improving the transmission grid in order to reduce transmission constraints and to connect currently isolated power systems. For this purpose, the FGC is required to develop an investment programme which is subject to state approval. Works performed in accordance with the investment programme are included in the FGC's regulated asset base for tariff setting purposes, and therefore attract the regulated return on capital.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

Transmission tariffs are set by the Federal Anti-Monopoly Service (FAS) using the regulated asset base (RAB) method. Tariffs are set on the basis of long-term parameters (fixed for a period of five years) including a base level of operating costs, an index of efficiency of operating costs (currently 3 per cent), a fixed payback period (35 years) and numerical measures of reliability and quality. The RAB method provides for a given level of return on the regulated asset base, which is adjusted annually to include the cost of works performed pursuant to the FGC's approved investment programme (capped at the applicable normative level for the cost of such works set by the Ministry of Energy). Permitted operating costs in a given year are calculated by applying an indexation formula to the base cost level that takes into account changes in the asset base, inflation and the efficiency index. The tariff also compensates for network losses up to a normative level set for the grid by the Ministry of Energy.

Transmission tariffs are set in a two-part form, with separate elements for network development and maintenance (charged with reference to consumption of capacity) and network losses (charged with reference to consumption of power). A differentiated (lower) tariff is set for certain regions in the North Caucasus.

The terms of connection and transmission agreements are regulated by the rules on non-discriminatory access to connection and transmission services.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Each power system is under the management of a 'subject of operational dispatch management' responsible for system reliability, including frequency management and dispatch. In the case of the UPS, this is the system operator ('SO UPS', JSC).

As part of the process for setting transmission tariffs, target measures of quality and reliability are set for the transmission grid and the tariff received by the FGC is subject to adjustment by reference to its performance against those measures.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

The construction and planning requirements applicable to distribution networks are in principle the same as for transmission, although legislation at the Federation Subject (regional) level may provide for an exemption from the requirement to obtain most construction approvals for networks of a voltage below 20kV.

With the aim of reducing Russia's exceptionally large number of small network operators and the associated inefficiencies, rules were introduced in 2015 whereby network owners only qualify as a 'territorial network organisation' entitled to charge for distribution services if their network meets certain criteria regarding size, compliance with quality and reliability requirements and customer service arrangements.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

The system for connection and access to the distribution networks is broadly similar to that for transmission, described above, as a single set of rules for non-discriminatory access covers both. The Russian government has a policy objective of improving the country's position in the World Bank rankings for ease of connection to power, and a number of changes have been made to the connection rules in order to streamline the process for smaller connections and reduce the cost. These include a requirement to allow smaller applications to be processed online, the introduction of fixed fee scales, stage payments against implementation of the connection and provision for a proportion of technical connection costs to be met through distribution tariffs. The conclusion of a connection agreement and the subsequent connection process are subject to statutory time limits.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

As for the transmission grid, works performed by a distribution company in accordance with an approved investment programme are taken into account for tariff-setting purposes.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Distribution tariffs are set at the Federation Subject level within minimum and maximum limits determined by FAS. The tariffs of most network operators are set using either the RAB method (under a system similar to that described in relation to transmission, above) or the method of long-term indexation.

Distribution tariffs payable by customers are determined on the 'common pot' basis, meaning that the tariff for all customers of a given category within a given Federation Subject must be the same, irrespective of the network to which they are connected. Resulting mismatches between the tariff due to each network operator and the revenue stream from its customers are corrected by way of payments as between the network operators. In order to reduce the burden on the market of so-called 'mono-networks' servicing predominantly one user, such users are required to pay the tariff of the mono-network in addition to the common pot tariff.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

No authorisation as such is required to sell power on the retail market. However, certain regulatory requirements apply to the network of guaranteeing suppliers, including that each guaranteeing supplier must have been admitted to the wholesale market. In the event that a guaranteeing supplier is expelled from the wholesale market or becomes insolvent, a replacement supplier for the relevant territory is appointed by tender. Participation in the tender requires the bidder to demonstrate compliance with certain minimum financial criteria.

In order to be able to sell power to a given customer, a non-guaranteeing supplier must either be a wholesale market participant registered as buyer in respect of the delivery point of the customer or have an existing power purchase agreement on the retail market in respect of that delivery point with a generator or another supplier. A non-guaranteeing supplier can only be admitted to the wholesale market if it represents aggregate connected customer load of at least 20MVA and load of at least 750kVA at each group of supply points at which it proposes to supply power.

The rules of the wholesale market include a requirement for suppliers and other buyers that have committed material payment defaults to provide security for their liabilities in the day-ahead and balancing markets and a procedure for expulsion from the market of buyers in persistent default.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Within the pricing zones the general principle is that power and capacity are sold at unregulated market prices. The main exceptions to this are in relation to supply to domestic consumers and all supply (domestic and commercial) in certain designated regions, primarily in the North Caucasus. Each of these is subject to tariff regulation at the retail level, and regulated tariffs apply at the wholesale market level to quantities of power and capacity bought by suppliers from generators for onward domestic supply and supply to these regions. Most generators on the wholesale market are required to enter into regulated agreements with selected suppliers in respect of a proportion of their output (capped by law at 35 per cent) for this purpose. There is also provision for temporary price smoothing to be introduced on the wholesale market in the event of exceptional price volatility and temporary tariff regulation in the event of a deficit of power or temporary isolation of part of the power system.

Additionally, the price of power sold by guaranteeing suppliers to commercial consumers is regulated in the sense that a price cap (referred to as the maximum level of unregulated prices) applies. The maximum level of unregulated prices is calculated as the sum of the guaranteeing supplier's relevant input costs (including a weighted average market price of power and capacity on the wholesale market) and a maximum supplier's margin.

On the capacity market, capacity supplied under the compulsory regime is subject to tariff regulation. Also all hydroelectric capacity in the Siberian pricing zone (where hydroelectric generation represents 48.8 per cent of installed capacity) is subject to a degree of tariff regulation, due to be phased out by 2017.

Outside of the pricing zones, most power and capacity sales are subject to tariff regulation, although there is limited scope for negotiated bilateral agreements in the non-pricing zones of the wholesale market.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Regulated tariffs for power and capacity on the wholesale market (where those apply) are set at the federal level by FAS. Tariffs for generators on the retail markets (where those apply) are set at the Federation Subject level.

Tariffs under regulated agreements are set on an individual basis for each generator applying the method of indexation of tariffs, whereby an indexation formula is applied annually to a tariff initially set by reference to the generator's economically justified costs. The indexation formula takes into account, among other things, changes in fuel costs and the cost of regulated services and the application of an index to remaining, fixed costs. Indexation was suspended in 2014 and 2015.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

As noted above, Russia has a system of suppliers of last resort referred to as guaranteeing suppliers. Guaranteeing suppliers are appointed on a geographical basis, with each one having an exclusive territory (which may represent all or part of a Federation Subject), and have a statutory obligation to accept all customers that request supply from them. They are also subject to a number of obligations in respect of customer service, including maintaining representative offices and having a website containing up-to-date information on their tariffs and forms of agreement. Also, as noted, all domestic supply (and power procured on the wholesale market for this purpose) is subject to tariff regulation.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The Ministry of Energy is designated as the executive authority responsible for developing energy policy. The Russian government has extensive powers to make delegated legislation under the Electricity Law, including adopting the wholesale and retail market rules and formal policy regarding energy efficiency and use of renewables. The rules in turn delegate a number of legislative powers to the Ministry of Energy.

23 Scope of authority

What is the scope of each regulator's authority?

The Market Council is responsible for drawing up and periodic amendment of the Accession Agreement (and therefore the detailed regulation of the wholesale market), controlling admission to the wholesale market and exercising the power to sanction or expel defaulting market participants. It also certifies renewable generators and maintains the register of them. The day-to-day commercial operation of the power market (including the day-ahead market) is undertaken by the Commercial Operator, JSC 'TSA', a subsidiary of the Market Council. A further subsidiary, JSC 'FSC', acts as an intermediary between market participants for the purposes of concluding power and capacity agreements and performing settlements.

FAS is responsible for merger control decisions and policing anticompetitive behaviour, as well as compliance with the rules on nondiscriminatory access to the services of natural monopolies. In 2015 the Federal Tariff Service was disbanded and its tariff-setting powers assumed by FAS.

In addition to its responsibilities for dispatch and system stability, the system operator is responsible for operating the balancing market, agreeing maintenance schedules, conducting the CSC capacity tenders and monitoring compliance with obligations to construct and deliver capacity.

Safety and environmental regulation is the responsibility of the Federal Environmental, Industrial and Nuclear Supervision Service.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Market Council is designated as a self-regulatory body, and the electricity law specifies that its supervisory board should include, in addition to government appointees, representatives from the generation sector (thermal, nuclear and hydroelectric), suppliers, major power consumers and the market infrastructure organisations. The Russian government has an ultimate power of veto over decisions of the Market Council.

FAS is a federal executive authority subordinate to the Russian government. The head of FAS and his deputies are appointed by the Russian government for an indefinite term and can in principle be dismissed by the government at any time.

Update and trends

The Ministry of Energy has published draft amendments to the electricity law concerning the process for removal from operation of generation that is no longer required. The issue of retirement of old and inefficient generation (especially that subject to the compulsory regime for capacity provision) has been a focus of recent attention, as the continued delivery of new capacity under the investment programmes initiated under the reform programme has outstripped the growth in demand for power.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Anti-monopoly decisions of FAS's regional subdivisions can be appealed to the collegiate bodies of the central office of FAS. Such an appeal must be filed within one month following the decision, and is then subject to a period of review by FAS of up to three months. FAS also has jurisdiction to resolve disputes between market participants and the tariff setting authorities at the Federation Subject level. The dispute must be referred to FAS within 30 business days of the relevant decision, and FAS's decision should be made within 60 business days. Decisions and actions of FAS itself can be challenged on the basis that they are unlawful in the commercial courts of the Russian Federation. Such a challenge must be brought within three months.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Acquisitions and certain other transactions involving changes in control meeting the applicable value thresholds require the prior approval of FAS under the anti-monopoly law. Separately, the law on natural monopolies requires the approval of FAS for transactions in respect of entities operating natural monopolies (which include transmission and distribution) and natural monopoly assets meeting certain thresholds.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

In order to obtain merger control consent, the relevant party must submit an application to FAS supported by the transaction documents and certain other information in relation to the applicant, the target and their respective groups. FAS has 30 days to consider the application, but may extend this period by up to two months if it concludes that the transaction may lead to a restriction of competition. There is no concept of consent being deemed given by default after a period of time. In determining whether to grant the consent, FAS considers whether the proposed transaction will result in the applicant obtaining a dominant position or result in a restriction of competition on the market.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

This is the responsibility of FAS.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Certain sector-specific legislation applies in respect of anticompetitive conduct on the power market in addition to generally applicable

anti-monopoly law. On the wholesale market, price manipulation is defined (in broad terms) as the taking of technologically or economically unjustified steps leading to significant changes in the price of power or capacity by way of submitting unjustifiably low or high bids, withholding capacity from the market or submitting bids that do not meet the test of economic justification. On the retail market, price manipulation is confined to abuse of dominant position. The law establishes a prima facie rule that a generator owning more than 20 per cent of the generating capacity or representing more than 20 per cent of power generated in a given region holds a dominant position. A methodology adopted by FAS applies for determining whether capacity bids meet the criteria to be considered economically justified.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

FAS has authority to monitor the power and capacity markets for instances of anticompetitive behaviour and to impose prescriptions where it identifies such behaviour or in conjunction with the approval of a merger. These can include requirements that an entity submit only price-taking bids or that it bids its entire available capacity. FAS has the power to apply to the courts for an order for the compulsory break-up of an entity guilty of multiple instances of abuse of dominant position.

FAS also has specific powers in relation to the conduct of the annual capacity tenders, including the power to impose restrictions on participants holding a dominant position in relation to their bidding behaviour and to make a recommendation that the results of a tender be annulled if it detects anticompetitive behaviour.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Under Russia's 2008 strategic industries law the prior consent of a governmental commission is required for the acquisition by a foreign entity of control over certain companies engaged in activities of strategic importance for state defence and security. In the power sector, these include transmission (but not distribution), dispatch and nuclear activities. There are also overlapping state ownership requirements in relation to certain strategic entities – the FGC is required to be majority state-owned and nuclear generation facilities may only be owned by the state or Russian entities approved by the President of the Russian Federation.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

The power systems of a number of former Soviet countries are synchronised with the Russian UPS, and Russia has DC interconnectors with China and Finland. All cross-border power lines (irrespective of voltage) are allocated to the transmission grid and therefore required to be under the exclusive control of the FGC.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Russia has extensive trade in power with its neighbours and agreements with a number of countries in respect of the parallel operation of power systems. Power export and import are governed by general rules on cross-border trade and customs legislation, subject to specific provisions for retroactive customs clearance. Wholesale market participants engaged in power export or import enjoy non-discriminatory access to the transmission grid. In order to be registered as an exporter or importer on the wholesale market, the relevant entity must have a registered group of supply points on the border, for which purpose it must provide a copy of its export or import agreement and have the approval of the FGC and the system operator. In line with the general geographical arrangement of the wholesale market, exported power generated in the pricing zones is bought at market prices and power generated in the non-pricing zones is subject to tariff regulation. The FGC, in its capacity as 'holder of the agreements for parallel operation', has certain obligations in respect of contracting with its counterparties in neighbouring countries for the purposes of parallel operation of power systems. The principal exporter of power is PJSC 'Inter RAO'.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

As noted above, there is a requirement for full ownership unbundling as between contestable and natural monopoly activities, and the operators of the natural monopolies are subject to non-discriminatory access and tariff regulation. As such, there is no specific regulation in this area.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

FAS has the power to instigate the break-up of entities that infringe the unbundling requirement.

WHITE & CASE

Adam Smith **adam.smith@whitecase.com**
Marina Rodina **mrodina@whitecase.com**

4 Romanov Pereulok
125009 Moscow
Russia

Tel: +7 495 787 3000
Fax: +7 495 787 3001
www.whitecase.com

South Africa

Joz Coetzer, Matthew Richards and Brenda Migwalla
White & Case LLP

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Key policies
South Africa energy policy is influenced by numerous policies including the White Paper on the Energy Policy of South Africa 1998 and the National Development Plan (NDP) which aims to eradicate poverty and reduce inequality by 2030. The NDP's economic infrastructure objectives include providing at least 90 per cent of the South African population with access to the electricity grid (with the remaining proportion having access to non-grid options). Energy policy is also influenced by the Integrated Resource Plan 2010-2030 (IRP) which was promulgated in March 2011. It sets out the country's electricity demand profile for the next 20 years and determines how to best meet this demand from different energy sources. It is intended to be a 'living plan' and to be revised in two-year intervals and has formed the basis of recent independent power producer (IPP) procurement programmes.

Future planned policies include: (i) the integrated energy policy which is to inform South Africa's future energy mix and prioritise policy interventions for future programmes within the energy sector and (ii) the gas utilisation master plan which should clarify South Africa's approach in developing its nascent gas economy.

Key statutes
Key sector-specific statutes include:

- the National Energy Regulator Act No . 40 of 2004 (NERA), which establishes the national energy regulator (NERSA) to regulate the electricity, piped-gas and petroleum pipelines industries;
- the Electricity Regulation Act No. 4 of 2006 (the ERA) which establishes a national electricity supply regulatory framework, positions NERSA as custodian and enforcer of the framework and provides for licensing and registrations required in respect of the generation, transmission, distribution and trading of electricity; and
- the National Energy Act No. 34 of 2008, which: (i) seeks to ensure that diverse energy resources are available to the South African economy (in sustainable quantities and at affordable prices) to support economic growth; (ii) provides for energy planning including for (among other things) increased generation and consumption of renewable energies and adequate investment in, and appropriate upkeep of and access to energy infrastructure.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Generation – Eskom Holdings SOC Limited (Eskom), a state-owned national power utility, generates the vast majority of the country's electricity, typically through large coal-fired power stations and a single nuclear facility.

Transmission and distribution – Eskom owns and controls the national high-voltage transmission grid, and distributes approximately 60 per cent of electricity directly to customers. Direct electricity sales to mines and industry account for approximately 40 per cent of Eskom's distribution business. Local authorities buy bulk electricity from Eskom and distribute the balance of electricity supply in South Africa.

IPPs – From as far back as 1998, the government has recognised the need for IPPs in the country's power generating capacity. Early steps towards a competitive wholesale power exchange were abandoned in favour of the existing single-buyer model with Eskom as the off-taker. IPPs are still expected to play a significant role in power generation. In 2001, the renewable energy independent power producer procurement programme (REIPPPP) was successfully launched, and has been followed by IPP procurement programmes for new generation capacity from baseload coal (CBLIPPPP) and via cogeneration. As at the date of this publication, a gas-to-power IPP and nuclear energy procurement programmes are contemplated.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Construction: No electricity-sector specific authorisations are required. However, general (non-sector-specific) construction authorisations must be obtained. These may include authorisations under the National Building Regulations and Buildings Standards Act 103 of 1977, zoning approvals and environmental authorisations.

Operation: A licence from NERSA under the ERA is required unless the facility is constructed and operated for own use (and not connected to the wider electricity grid).

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

South Africa has a grid code (Grid Code) which specifies connection conditions for generators to the transmission grid. Generators seeking connection to the transmission grid will need to apply, in writing, to the National Transmission Company (NTC) and to provide information prescribed by the Information Exchange Code. Following such application, the NTC will provide quotes or cost estimates for new connections (of for upgrading existing connections) according to an approved tariff methodology. The Grid Code prescribes the minimum technical and design requirements with which generators will need to comply when connected or seeking to be connected to the transmission grid.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The ERA empowers the Minister of Energy (in consultation with NERSA), among other things, to determine: (i) that new generation capacity is needed to ensure the uninterrupted supply of electricity in South Africa; and (ii) the types of energy sources from which electricity must be generated, and the percentages of electricity that must be generated from such sources. To date, determinations have been made for the procurement, through IPP Procurement Programmes, of capacity from renewable energy sources (in the form of concentrated solar, wind, conventional solar photovoltaic, biogas, biomass, landfill

gas and hydropower) and as well as capacity from industrial cogeneration energy sources (including, without limitation, biomass, industrial waste and combined heat and power).

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

The government has voluntarily committed to reducing South Africa's greenhouse gas (GHG) emissions by 34 per cent below the business-as-usual (BAU) trajectory by 2020 and by 42 per cent below the BAU trajectory by 2025. This commitment is subject to the availability of adequate financial, technological and capacity-building support from developed countries. To date, several policies have been set in place to provide a regulatory framework for South Africa's response to climate change. These include, without limitation, the following:

- the National Development Plan 2030 which identifies various possible strategies for reduction of South Africa's GHG emissions. These include: (i) flagship renewable energy projects; (ii) greater reliance on natural gas as a less carbon-intensive transitional fuel; (iii) partnerships with neighbouring countries to obtain hydropower resources (initially in Mozambique and Zambia, and eventually in the Democratic Republic of Congo); and (iv) carbon capture and storage and the imposition of carbon budgets and carbon pricing;
- the IRP, which provides for the maintenance of an emissions constraint of 275 million tons of CO_2 per year from the electricity industry after 2024;
- the 2011 National Climate Change Response White Paper which supports the use of carbon budgeting and carbon pricing measures; and
- the Carbon Tax Policy Paper (2013) which proposes the introduction of a carbon tax. As a tax base, a preference is expressed for the taxation of fossil fuel input (ie, coal, crude oil and natural gas) based on their carbon content. A carbon tax rate of 120 rand per ton of carbon dioxide-equivalent above certain tax-free thresholds (which take into account the competitiveness concerns of locally based and trade-exposed carbon-intensive sectors and businesses as well as distributional concerns including the impact on low-income households) is proposed (Carbon Tax). The Carbon Tax was to be imposed from 1 January 2015. However, at the time of writing, the effective date of the Carbon Tax has been postponed to 1 January 2017.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

There are no incentives specific to the research and development of storage solutions (outside general R&D tax incentives and the 50/30/20 capital depreciation allowance available in relation to renewable energy projects). Section 12L of the Income Tax Act, 58 of 1962 does permit energy efficiency claims but again, no specific provision is made for electricity storage.

However, the problems posed by the intermittent nature of renewable energy sources and the challenges associated with balancing energy supply and demand have been recognised in South Africa although (to date) there has been only a limited regulatory and governmental response to these problems. For instance, the Grid Code deals specifically with the requirements applicable to renewable energy power plants but does not impose any special requirements on concentrated solar power projects which typically incorporate a storage element.

The National Integrated Resource Plan 2010–2030 (IRP 2010-2030) does recognise that energy storage technologies have the potential to substantially strengthen South Africa's grid by offsetting the need to use fossil fuels for peaking power, providing grid balancing and resiliency, improving power quality, and increasing the ability to successfully integrate renewable energy resources and that this is something that should be addressed in future iterations of the IRP. The focus to date has centred on smart metering and demand-side management initiatives rather than storage solutions.

At present, there are three pumped hydro storage schemes in South Africa and three concentrated solar power plants which have reached financial close under the REIPPPP, which specifically provides for the procurement of 600MW of energy from CSP projects by 2030.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

The IRP contemplates the acquisition of 9,600MW of new nuclear generation capacity.

In his 2016 State of the Nation Address, the President of South Africa confirmed that a nuclear energy expansion programme remained part of South Africa's future energy mix and that South Africa had plans to introduce this 9,600MW of nuclear energy in the coming decade and in addition to the existing nuclear generation capacity. The President further confirmed that South Africa would 'test the market to ascertain the true cost of building modern nuclear plants' and would 'only procure nuclear on a scale and pace that' the country could afford.

At present, according to the DoE, only 6 per cent of South Africa's electricity is generated from two South African nuclear reactors.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Construction – No electricity-sector specific authorisations are required. However, general (non-sector-specific) construction authorisations and land-use rights must be obtained. These may include servitudes, authorisations under the National Building Regulations and Buildings Standards Act 103 of 1977, zoning approvals and environmental authorisations.

Operation – A transmission licence issued by NERSA under the ERA. However, Eskom currently owns and operates the transmission grid.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

The Grid Code specifies connection conditions for generators to the transmission grid. Generators seeking connection to the transmission grid will need to apply, in writing, to the National Transmission Company (NTC) and to provide information prescribed by the Information Exchange Code. Following such application, the NTC will provide quotes or cost estimates for new connections (of for upgrading existing connections) according to an approved tariff methodology. The Grid Code prescribes the minimum technical and design requirements with which generators will need to comply when connected or seeking to be connected to the transmission grid.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

There are no direct incentives to promote the expansion of the transmission network by the private sector. As mentioned above, Eskom owns and operates the transmission system. Eskom does, however, have plans to expand and further develop the transmission grid.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

NERSA regulates the setting of prices and the structure of tariffs under transmission licence conditions by imposing conditions regarding: (i) the manner in which prices, charges, rates and tariffs to be charged are set and approved; and (ii) the methodology to be used in determining

applicable rates and tariffs. According to ERA, these licence conditions must:

- enable the transmission service provider to recover the full cost of its licensed activities with a reasonable return;
- incentivise the continued improvement of technical and economic efficiency in transmission services;
- avoid undue discrimination between customer categories (although cross-subsidies between different classes of customers is permitted); and
- give end users of the transmission network proper information on the costs their consumption imposes on the transmission service provider's business.

The Transmission Tariff Code (which forms part of the Grid Code) sets out transmission service pricing objectives – among other things, it requires transmission-related tariffs to be designed in pursuit of objectives including: open access (at equitable, non- discriminatory prices); predictable prices and pricing signals reflective of the cost structure of the transmission services provided.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Eskom. In its capacity as transmission system operator, Eskom's obligations under the Grid Code (System Operator Version) include obligations to: (i) operate the grid so as to achieve the highest degree of reliability practicable, minimise the effects of disturbances to customers and avoid instability, uncontrolled separation or cascading outages as a result of the most severe double contingency; and (ii) take appropriate remedial action promptly to relieve any abnormal condition that may jeopardise reliable operation.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Construction – No electricity-sector specific authorisations are required. However, general (non-sector-specific) construction authorisations and land-use rights must be obtained. These may include servitudes, authorisations under the National Building Regulations and Buildings Standards Act 103 of 1977, zoning approvals and environmental authorisations.

Operation – A distribution licence issued by NERSA under the ERA. As mentioned above, Eskom distributes approximately 60 per cent of electricity directly to customers.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

The South African Distribution Code (Network Code) sets basic rules for connecting to the distribution system. Persons seeking new connections to the distribution network must lodge an application for connection with a distributor. Each distributor has its own application form. Upon receipt of the application for connection to the distribution grid, the distributor must advise whether the applicant can be connected to the existing system or what technical improvements are required to enable the new connection or both. If the distributor can provide access to the customer, the distributor must provide an offer to connect and if accepted by the customer, a connection agreement will be concluded to govern project planning data, inspection, testing and commissioning programmes, electrical diagrams and any other information the distributor may deem necessary to proceed with the processing of the application for connection.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

There are no direct incentives to promote the expansion of the distribution network by the private sector.

IPPs typically elect to engage in the self-building of any expansions to the distribution network that may be required to connect the IPP project to the national grid and Eskom is currently debt-funding a significant expansion of the transmission and distribution network.

The South African government has proposed the creation of an independent system operator which will own, control and regulate the national transmission and distribution network and in 2003, Eskom implemented a revised business model to prepare for capacity requirements and the impending restructuring of the electricity sector by splitting its business into regulated and non-regulated divisions. It is proposed that the transmission division will become independent from the generation division of Eskom and will take responsibility for the electricity grid. It is envisaged that this regulatory body will grant all electricity producers and consumers access to the grid, with freedom of choice. Under this model, South African power consumers could buy from sources other than Eskom but still use the same transmission infrastructure to have power delivered to them. The proposed legislative changes required to bring about this change were introduced 2012 but appear to have been indefinitely suspended or abandoned.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

NERSA. With the necessary changes, the response at paragraph 12 applies. The Grid Code (Tariff Code) is also relevant as it sets out tariff and pricing structure objectives for distribution retail and network services – among other things, it: (i) applies to all regulated tariff structures and negotiated pricing agreements under NERSA's jurisdiction; (ii) regulates energy charges (including recovery of losses), network charges (including ancillary services), customer service charges and connection charges; and (iii) provides principles for tariff design and allocation of costs.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

The ERA prohibits any trading (ie, any buying or selling of electricity as a commercial activity) without a licence issued by NERSA. NERSA is required to issue separate licences to authorise: (i) the operation of generation, transmission and distribution facilities; (ii) the import and export of electricity; and (iii) trading in electricity.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Yes. The ERA requires NERSA to regulate prices and tariffs (where both 'prices' and 'tariffs' are defined as charges for electricity). In granting licences, NERSA may impose licence conditions which, amongst other things, regulate the setting and approval of prices, charges, rates and tariffs charged by licensees as well as the methodology to be used in the determination of rates and tariffs. Such licence conditions must conform to the principles identified in question 11 above. In addition, such conditions may permit the cross-subsidy of tariffs to certain classes of customers. In general, no licensee may charge a tariff nor make use of provisions in agreements which are not determined or approved by NERSA as part of its licensing conditions. However, under certain circumstances, NERSA may approve a deviation from set or approved tariffs (for instance, when electricity demand is higher and is threatening the sustainability of the electricity supply industry.)

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

NERSA. See also question 19.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

NERA obliges the Minister of Energy to adopt measures that provide for the universal access to appropriate forms of energy or energy services for all South Africans at affordable prices. These measures must take into account the State's commitment to provide free basic electricity to poor households.

Currently, South Africa has an Electricity Basic Services Support Tariff (Free Basic Electricity) Policy which requires the provision of 50kWh of electricity per month (Free Basic Electricity) to existing qualifying consumers (ie, poor households which are legally connected to the national electricity grid or to a non-grid electricity system such as a solar home system). Free Basic Electricity is to be funded primarily through public funds (ie, intergovernmental transfers) or via cross-subsidies imposed by adequately resourced municipalities. Consumption in excess of the 50kWh per month limit will be payable by the consumer.

It should be noted that it is local municipalities who are tasked with implementing the national government's Free Basic Electricity policy. Therefore, if a utility (eg, Eskom) provides Free Basic Electricity, it will be doing so as a service provider of the municipality and the national government and local municipalities will remain ultimately responsible for funding the Free Basic Electricity provided by the utility.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

There is only one regulator of the electricity sector in South Africa – NERSA. NERSA was created pursuant to NERA, which came into effect on 15 September 2005.

Along with NERA, NERSA is governed by ERA, the Electricity Act 1987 (in terms of levies) and other legislation of broader scope and application (such as the Constitution of the Republic of South Africa 1996 and the Public Finance Management Act 1999). To this extent therefore, the South African government also plays a significant role in determining regulatory policy by issuing determinations within which NERSA is compelled to carry out its mandate.

23 Scope of authority

What is the scope of each regulator's authority?

NERSA's role with regards to electricity is split into four separate divisions: (i) licensing and compliance; (ii) pricing and tariffs; (iii) infrastructure planning; and (iv) regulatory reform.

NERSA's licensing role primarily involves issuing licences for the generation, transmission and distribution of electricity, the import and export of electricity and to traders in electricity. As a part of this function, NERSA monitors compliance with the terms and conditions attached to any licence.

With regards to pricing, NERSA sets tariff guidelines, structures and methodologies and pricing frameworks.

The infrastructure planning role of NERSA includes planning for future electricity demand, under the prescripts of the National Integrated Resource Plan, promoting alternative energy generation and energy efficiency initiatives.

NERSA's role in regulatory reform includes construction of a regulatory framework to facilitate introduction of regional electricity distributors and establishing an international electricity trading framework.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

NERSA was created pursuant to the NERA, which came into effect on 15 September 2005. One of NERSA's key principles is independence, including from regulated companies, pressure groups and political influence. NERSA's decisions are published online in accordance with the requirements of the Promotion of Access to Information Act 2000.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

NERSA is a public body and so any decision may be challenged by way of judicial review of an administrative action as provided for in the Promotion of Administration of Justice Act 2000. Any person may institute proceedings in the High Court of South Africa for judicial review.

The grounds for judicial review include, among others, that the decision taken:

- was tainted by bias (or there is a reasonable suspicion of bias);
- was procedurally unfair;
- was materially influenced by an error of law;
- took irrelevant considerations into account or failed to take relevant decisions into account; and/or
- was capricious, irrational or taken in bad faith.

An application for judicial review must be made without unreasonable delay and within 180 days of either internal remedies being concluded or, if no internal remedies exist, of the applicant becoming aware of the act or decision and the reasons for it (or when the applicant might reasonably have been expected to become aware of the same).

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

Competition law in South Africa is governed by the Competition Act 1998 (Competition Act). The South African Competition Commission (Commission) acts as the main medium of interaction with the public and has the power to investigate, consider and pass rulings on the contraventions of the Competition Act, approve or prohibit small or 'intermediate mergers' and refer its recommendations to the Competition Tribunal (Tribunal) in relation to 'large mergers'. The Competition Appeal Court is the final court of appeal for competition law matters.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

With respect to mergers, the Commission conducts merger revisions in terms of the Competition Act. Firms entering into the 'intermediate' or 'large' mergers are required to notify the Commission and may not implement that merger until it has been approved with or without conditions by either the Commission (for intermediate mergers), the Tribunal (for larger mergers), or the Competition Appeal Court.

A merger is considered:

- intermediate if the value of the proposed merger equals or exceeds 560 million rand (calculated by either combining the annual turnover of both firms or their assets) and the annual turnover or asset value of the target firm is at least 80 million rand; or
- large if the combined annual turnover or assets at both the acquiring and target firms is valued at 6.6 billion rand, and the annual turnover or asset value of the target firm is at least 100 million rand.

The Commission has the discretion to require parties to a small merger to notify it if the merger may substantially prevent or lessen competition or cannot be justified on public interest grounds. Similar to the other mergers, merger parties may not take further steps to implement that merger until it has been approved (finally or conditionally).

Importantly, the Commission will require the notification of all small mergers that meet either of the following criteria:

- at the time of entering into the merger, any of the firms, or any firm within their groups, is subject to an investigation by the Commission in terms of Chapter 2 of the Competition Act (ie, restrictive horizontal practices, restrictive vertical practices, abuse of dominance or price discrimination); or
- at the time of entering into the merger, any of the firms, or any firm within their groups, are respondents to pending proceedings referred by the Commission to the Tribunal in terms of Chapter 2 of the Competition Act.

When providing notification of a merger, a filing fee must be paid.

The Commission has:

- an initial period of 20 business days in which to investigate intermediate and small mergers. The Commission can, however, extend this investigation period by 40 business days; and
- an initial period of 40 business days to investigate large mergers, which can be extended by up to a maximum of 40 business days per request.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The Commission. Refer to questions 26 and 27.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Where a merger occurs, the test is whether the merger is likely to substantially prevent or lessen competition and, if so, whether there is any technological, efficiency or other pro-competitive gains that are likely to result from the merger that may offset the lessening of competition.

The relevant factors considered include, inter alia:

- the strength of competition in the market;
- the probability that firms in the market will behave competitively following the merger;
- the actual and potential level of import competition;
- ease of entry into the market, including tariff and regulatory barriers;
- the level and trends of concentration and history of collusion in the market;
- the degree of countervailing power in the market;
- the likelihood of the merged firm having market power;
- the dynamics of the market, including growth, innovation and product differentiation;
- the nature and extent of vertical integration;
- whether the business of a party has failed or is likely to fail; and
- whether the merger will result in the removal of an effective competitor.

Thereafter, it is considered whether the merger can be justified, conditionally approved or must be rejected on substantial public interest grounds. Public interest grounds include the effect of the merger on employment, the ability of small businesses or firms controlled by historically disadvantaged persons to become competitive, and the ability of national industries to compete in international markets.

The Competition Act prohibits restrictive vertical practices (between suppliers and their customers) if they substantially prevent or lessen competition in the market unless a party to the agreement can raise demonstrable efficiency, pro-competitive or technological gains as a defence.

Certain restrictive horizontal practices are also prohibited – directly or indirectly fixing a purchase or selling price or any other trading condition, dividing markets by allocating customers, suppliers, territories or specific types of goods or services, or collusive tendering. Again, competitors may raise the pro-competitive or technological gains as a defence.

Update and trends

Renewable Energy – The DoE has successfully concluded 6 separate bidding rounds of renewable energy IPP projects between 2011 and 2016, of which four rounds have reached financial close by the date of this article.

Coal and cogeneration – The DoE has also launched a cogeneration and coal baseload IPP programme. In the 2016 State of the Nation Address, the President of South Africa confirmed that CBLIPPPP preferred bidders would be announced this year. As at the date of this article, the preferred bidders are yet to be announced.

Gas to Power IPP Procurement Programme – In the 2016 State of the Nation Address, the President of South Africa confirmed that a request for proposals would be issued 'for the first widows of gas to power bids'. The Minister of Energy subsequently confirmed that a preliminary information memorandum (PIM) for this programme would be made available to the market in the second quarter of the 2016/2017 financial year, prior to the commencement of formal procurement processes later in the year. As at the date of writing, the PIM has not been issued and a formal procurement process (though expected) is yet to be initiated.

Nuclear Energy Expansion Programme – As mentioned above, the President (in his State of the Nation Address) confirmed South Africa's intention to proceed with a nuclear energy expansion programme in the coming decade. As at the date of writing, no formal procurement process has been initiated.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The adjudicating body must attempt to find an appropriate remedy to counter the anticompetitive effects of the merger. Conditions may be imposed which oblige the merged entity to divest part of its assets or behavioural conditions may be imposed.

In order for a divestiture to cure an anticompetitive merger, the purchaser must be able to manage the assets efficiently and compete effectively.

Behavioural conditions may include, inter alia:

- ring-fencing conditions to prevent exchanges of information as well as the establishment of compliance programmes to prevent collusion;
- conditions to ensure supply to vertically related firms where there are dangers of upstream or input vertical foreclosure; and
- conditions to protect the public interest. In this regard, moratoria on retrenchments are often imposed in order to protect employees and the Competition authorities have taken particular care to protect unskilled jobs by means of conditions.

The competition authorities may senior executives to submit affidavits, written statements and/or detailed financial statements on an annual basis attesting to the firm's compliance with the conditions.

The primary sanction in the context of the merger notification regime is the imposition of an administrative fine on the merging parties but the Tribunal may also grant an interdict if the parties to a merger attempt to, or intend to, implement the merger without notification to the Commission. The Tribunal may further order a divestiture or declare void any provision of an agreement to which a merger was subject if the parties fail to give notice of the merger, implement the merger without approval by the competition authorities or implement the merger in contravention of a condition imposed.

The amount of the penalty imposed may not exceed 10 per cent of the merging parties' turnover in South Africa and its exports from South Africa for the preceding financial year.

Prohibited practices

The Commission may initiate a complaint of its own accord if it has a reasonable belief that a firm has committed a prohibited practice or is

abusing its dominant position in a market. It may also conduct a market inquiry into anticompetitive market conditions, without any complaint having been initiated.

The Tribunal has the power to make an appropriate order in relation to a prohibited practice, including the following:

- interdicting any prohibited practice;
- ordering a party to supply or distribute goods or services to another party on terms reasonably required to end a prohibited practice;
- imposing an administrative penalty;
- ordering a divestiture of shares, interest or assets;
- declaring the conduct of a firm to be a prohibited practice so that a person who has suffered loss or damage as a result thereof, may institute an action for civil damages;
- declaring the whole or any part of an agreement to be void; and
- ordering access to an essential facility on terms reasonably required.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no legislative prohibitions on foreign companies acquiring interests in IPPs operating in the electricity sector, but procurement and local empowerment legislation oblige IPPs to ensure that a minimum percentage of each project is owned, managed and controlled by historically disadvantaged South Africans. In addition, the contractual requirements applicable to the various IPP programmes stipulate that a substantial portion of the ultimate shareholders or beneficiaries in the IPP entity must be South African citizens.

While there are no restrictions on non-residents owning shares in South African companies or owning local electricity assets, exchange control regulations require shares held by foreign shareholders to be endorsed as non-resident by an authorised dealer on behalf of the Reserve Bank and the prior approval of foreign loans by the Reserve Bank, to avoid problems in repatriating funds such as outbound dividends, interest, capital and loan repayments. The exchange control regime also prohibits loan account set-off between a South African company and its offshore parent.

South Africa also imposes a number of withholding taxes – most importantly, a holding tax on dividends paid by South African resident companies and on cross-border interest payments (both at a rate of 15 per cent, although rates are dependent on the existence of tax treaties).

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

At present, there is no scope for privately owned IPPs located outside of South Africa to supply electricity to Eskom or to anyone else within South Africa.

The South African Department of Energy is in the process of formulating rules for the development of cross-border, coal-fired generation plants that will undertake to supply electricity to Eskom, but these have not yet been finalised.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

There are presently no rules in place for private interconnector operations because Eskom Holdings SOC Ltd is the sole transmitter and distributor of electricity in South Africa.

The only cross-border supply of energy in South Africa occurs at a national level pursuant to the Southern African Power Pool, which at present consist of only the national generation, distribution and transmission companies of each of its member states (with the sole exception of the Copperbelt Energy Corporation, operating in Zambia and Nigeria).

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

Subject to questions of competition law (see questions 26 to 30), there are no legislative restrictions on transactions between Eskom and its affiliates.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

There are no restrictions on utilities dealing with affiliates outside of the framework for anticompetitive behaviour discussed above.

WHITE & CASE

Joz Coetzer **jcoetzer@whitecase.com**
Matthew Richards **mrichards@whitecase.com**
Brenda Migwalla **bmigwalla@whitecase.com**

4th Floor, Tower B
102 Rivonia Road
Sandton
South Africa

Tel: +27 11 341 4000
www.whitecase.com

Switzerland

Marc Bernheim, Gaudenz Geiger and Damian Hess

Staiger, Schwald & Partner Ltd

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Pursuant to article 89 of the Federal Constitution, both the confederation and the cantons must ensure a sufficient, diverse, safe, economic and environmentally sustainable energy supply as well as the economic and efficient use of energy.

The confederation may entirely legislate in the field of nuclear energy and the transmission and distribution of electricity, has far-reaching powers in the field of hydropower generation and has the power to determine the general principles of the use of domestic and renewable energy. In addition, the cantons may regulate the remaining fields. The legislative framework is thus very fragmented. The relevant acts and ordinances at federal level are as follows:

- the Energy Act;
- the Ordinance on Energy;
- the Electricity Supply Act:
- the Ordinance on Electricity Supply;
- the Act on Nuclear Energy;
- the Ordinance on Nuclear Energy;
- the Act on Low and Heavy Current Electricity Utilities;
- the Ordinance on Low Current Electricity Utilities;
- the Ordinance on Heavy Current Electricity Utilities;
- the Ordinance on the Authorisation Procedure for Heavy Current Utilities;
- the Ordinance on Electric Low Current Products;
- the Ordinance on Electric Low Current Installations;
- the Ordinance on Electric Lines;
- the Act on Utilisation of Water Power;
- the Act on CO_2 Emission Reductions;
- the Ordinance on CO_2 Emission Reductions; and
- the Nuclear Energy Liability Act.

The legislative framework for the electricity sector has substantially changed during the past few years. The main part of the Federal Act on Electricity Supply came into force on 1 January 2008 and its respective Federal Ordinance on Electricity Supply on 1 April 2008, together changing the shape of the electricity sector fundamentally.

The objective of this new legal framework is to ensure reliable and sustainable electricity supply and to liberalise the (previously closed) electricity market in two steps. First, end consumers with an annual consumption of more than 100MWh have been granted free access to the market as from 1 January 2009. Second, all end consumers, including households and other small-scale consumers, should be able to freely choose their electricity supplier (full market liberalisation). However, this step needs a parliamentary decision, being subject to an optional referendum. Full market liberalisation was scheduled to be effective on 1 January 2014, but has been delayed due to current works on a revision of the Energy Act and on the strategy to replace nuclear energy by renewable energies (Energy Strategy 2050, see question 3). Today, it is expected that full market liberalisation will take place in 2018 or even later.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Switzerland's electricity supply is secured by approximately 650 energy supply utilities and continues, therefore, to be very fragmented. However, since the new legislative framework for electricity supply provides for extensive regulatory efforts for utilities and, due to expected new market forces as a consequence of the liberalisation process, the number of companies active in the sector is likely to decrease in the coming years. In some cantons and municipalities, a single vertically integrated company is responsible for the entire supply chain (except the transmission of electricity, which is operated by the transmission system operator (TSO)), while in other cantons this activity is divided among a variety of companies. Furthermore, many of the energy supply companies are not only responsible for the supply of electricity, but also for the supply of water and gas.

As of 2014, the public sector holds 88.6 per cent of the electricity supply company capital, totalling around 6.2 billion Swiss francs, while the remaining 11.4 per cent are held by private investors (of which 7.5 per cent are Swiss and 3.9 per cent are foreign).

In 2015, end-consumer electricity consumption totalled 58.3 billion kWh (2014: 57.5 billion kWh), and domestic producers generated a total of 66 billion kWh (2014: 69.6 billion kWh). Cross-border electricity trading is of major significance for Switzerland, both economically and in terms of supply security. In 2015, 42.3 billion kWh were imported and 43.3 billion kWh were exported. The electricity trading balance in 2015 amounted to around 234 million Swiss francs (2014: around 442 million Swiss francs).

At present, hydropower plants account for around 59.9 per cent of the domestic production of electricity, followed by nuclear power plants accounting for 33.5 per cent and conventional thermal energy and renewable energy plants responsible for approximately 6.6 per cent.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The Act on Low and Heavy Current Electricity Utilities and related Ordinances provides the principal legal framework for the procedure to get permission for the construction and operation of generation facilities. The construction of generation facilities requires – like all heavy current electricity installations – the approval of the Federal Inspectorate for Heavy Current Installations (ESTI), which is a planning permission. This planning permission includes all permissions for the construction and operation of a generation facility required by federal law and, also, those of other federal authorities. Furthermore, all cantons concerned have to be informed by ESTI about the request for a planning permission, which must be published in the Official Gazette of the cantons and municipalities concerned.

In the event of objections against the planning permission that cannot be solved by ESTI, or in the event of diverging views among the federal authorities involved, the Federal Office of Energy (SFOE) must approve the planning permission.

The operation of hydropower plants requires a concession for the utilisation of water power. The power to grant such a concession usually lies with the canton concerned.

The construction of nuclear power plants requires – in principle – the prior approval of the Federal Council (government) and of both chambers of the Parliament, subject to an optional referendum. In May 2011, as a consequence of the nuclear accident in Fukushima, the Federal Council however decided to phase out nuclear energy and, therefore, not to allow any more new nuclear power facilities. The Federal Council's decision was approved by the two chambers of Parliament in June and September 2011. In April 2012 the Federal Council presented the framework for the 'Energy Strategy 2050', which contains the concrete roadmap to phase out nuclear energy and outlines how Switzerland's high level of energy security should be safeguarded at the same time. Today, the legislative process to transfer the 'Energy Strategy 2050' into applicable law is ongoing.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

According to the Electricity Supply Act, grid operators are obliged to allow the connection of generation with the transmission and the distribution grid. The respective costs are to be borne by the generator. Grid operators are, furthermore, obliged to grant third parties (regulated) access to the network without discrimination, but access to the network may be denied in the case that the operation of the network would be endangered or no capacities are available ('legitimate business reasons'). With regard to the allocation of network capacities, generators of electricity from renewable energy sources, especially hydropower, have preferential rights.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Historically, Switzerland's longest serving and most important source of renewable energy has been hydropower. However, the 'new' renewables, including solar, wood, biomass, wind, geothermal and ambient heat, play an increasingly important role in today's Swiss energy mix.

The government pursues clearly defined objectives for the saving of energy and to increase the use of renewable energies. The Energy Act stipulates an increased production of electricity from renewable energy sources of at least 5,400GWh by 2030, and contains a package of measures for the promotion of renewable energy and efficient electricity use. The most significant measure concerns a cost-covering feed-in compensation for electricity produced from renewable energy sources. This compensation is detailed in the Energy Ordinance and applies to the following technologies: hydropower (for plants with a performance of not more than 10MW), photovoltaic, wind energy, geothermal energy, biomass and waste material from biomass. The compensation tariffs have been specified on the basis of reference facilities for each technology and output category.

Provided the operation of the facility has started before 31 December 2013, generators of such facilities will be entitled to a cost-covering feed-in compensation for a period of 20 to 25 years depending on the technology. Generators of electricity produced by facilities starting to operate on or after 1 January 2014, in contrast, are only entitled to compensation for a period of 10 to 20 years (again, depending on the technology). Solar plants with a performance below 10kW and an operation start on or after 1 January 2014 do not give rise to a compensation of this type, but rather to a lump sum payment. For solar plants with a performance between 10kW and 30kW the generator may choose between a lump sum and a periodical payment over 20 years. Today, approximately 500 million Swiss francs per annum are available to compensate the difference between remuneration and the market price (including funds for lump sum payments). The planned 'Energy Strategy 2050' (see question 3) foresees a stronger support of power generation based on renewable energies, including subsidies for large hydro power stations.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

The new Act on CO_2 Emission Reduction, together with the new Ordinance on CO_2 Emission Reduction, which both entered into force on 1 January 2013, provide for a reduction of greenhouse gas emissions of at least 20 per cent in comparison with emission levels in 1990, by 2020. The measures to achieve this goal include the continuation of a CO_2 fee of 84 Swiss francs (36 Swiss francs until 1 January 2014; 60 Swiss francs until 1 January 2016) per tonne of CO_2 (which may be increased up to 120 Swiss francs per tonne); subsidies to fund CO_2-effective measures in buildings (up to 300 million Swiss francs per year); the possibility of introducing a CO_2 fee on motor fuels; the introduction of a duty for manufacturers and importers of fossil fuel motors to compensate for the emissions caused by these motors; the introduction of CO_2 output limitations for new licensed automobiles; and the continuation and improvement of the existing emissions trading scheme.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

There is no specific provision in today's regulatory framework that supports electricity storage (including research and development for storage solutions). However, the Energy Act contains a provision that allows the government to, inter alia, financially support the research and development of new Energy technologies, especially with respect to renewable energy and the economical and efficient usage of electricity. Further, electricity storage and its development is an important pillar of the 'Energy Strategy 2050' which is, however, not yet in force.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Since the incident in Fukushima, the government's policy is to discourage the development of new nuclear power plants. In May 2011 the Federal Council announced the phase-out of nuclear energy that halted on-going plans to build new nuclear production facilities. The Federal Council's announcement was approved by the chambers of parliament in June and September 2011. In April 2012 the Federal Council presented the framework for the Energy Strategy 2050, which outlines the roadmap to phase out nuclear energy and how to safeguard Switzerland's high level of energy security at the same time. Today, the legislative process to transfer the 'Energy Strategy 2050' into applicable law is ongoing.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

The construction of a transmission network is subject to the same authorisation procedures as the construction of a generation facility (see question 3).

The Electricity Supply Act provides that the transmission network is owned and operated by the national TSO (Swissgrid), which is a joint-stock company under private law, domiciled in Switzerland. The TSO must ensure that the majority of its capital and associated voting rights is held directly or indirectly by cantons and municipalities, and that the shares of the TSO are not listed on a stock exchange.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

The Electricity Supply Act provides for all producers and consumers non-discriminatory regulated third party access, including access to

the transmission grid. However, only a few very large consumers, such as the Swiss Federal Railways or CERN, are directly connected to the transmission grid.

Responsibility for the management of the high-voltage grid lies with the national TSO (Swissgrid), which has to guarantee access on the basis of objective, transparent and non-discriminatory criteria (see question 4).

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

To ensure the security of the electricity supply in the coming decades, the transmission grid must be expanded and upgraded over the next 10 years. Several expansion projects have so far been identified and more will be added. According to the national TSO (Swissgrid), the investments required for upgrading and expanding the transmission grid will amount to around 4 billion to 6 billion Swiss francs over the coming two or three decades.

The upgrading and expansion of the transmission grid must be financed by revenues of the application of the regulated grid use tariff. By adjusting this tariff (ie, in particular the Weighted Average Cost of Capital (WACC) (the competence to do so lies with the Federal Department of the Environment, Transport, Energy and Communications (DETEC))), the regulator can provide incentives for Swissgrid either to increase or to decrease its investments in the expansion of the transmission grid. Furthermore, the regulator may oblige Swissgrid to use certain revenues for the expansion of the transmission grid only.

As of 2014, a new framework to calculate the WACC was introduced, which caused an increase of approximately 1 per cent of the applicable WACC in 2014. As of 1 January 2016, the framework to calculate the WACC changed again, which resulted in a decrease of approximately 1 per cent of the applicable WACC.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The tariff for the use of the transmission grid is set by Swissgrid and subject to several provisions of the Electricity Supply Act and to the (ex post) review of the Federal Electricity Commission (ElCom) (regulatory authority). The Electricity Supply Act provides that the grid use tariff (for all grids, including those for transmission and distribution of electricity) shall not exceed the recoverable costs, fees and royalties. The recoverable costs consist of operating and capital costs necessary for the secure, productive and efficient operation of the grid and include a reasonable operating profit. ElCom is responsible for the official examination of grid use tariffs and may order reductions or prohibit increases of these tariffs.

The tariffs for the use of the transmission grid are subject to extensive scrutiny by ElCom (and the following judicial authorities) that lowered them in 2009, 2010, 2011 and 2012. In 2013, the Federal Supreme Court and the Federal Administrative Court rendered several decisions declaring the reduction of the transmission grid tariffs ordered by ElCom as being against the law. Meanwhile, ElCom released several new tariff ordinances taking into account the new case law of the Federal Supreme Court and the Federal Administrative Court. In 2016, the Federal Supreme Court rendered a landmark decision with regard to the correct calculation of electricity tariffs which will have a major impact on the remaining pending tariff proceedings.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

The responsibility for the reliability of the transmission grid lies with Swissgrid. The Electricity Supply Act holds that Swissgrid must permanently ensure the non-discriminatory, reliable and efficient operation of the transmission network as a substantial basis for the secure supply of electricity.

In order to do so, Swissgrid is entitled and obliged to plan, operate and control the whole (nationwide) transmission network and manage it as one balancing zone, to which belongs the provision of all system services for the transmission grid, including a reserve power supply. In addition, Swissgrid defines the procedures for dealing with shortfalls, cooperates with TSOs from abroad and implements all necessary measures in the event that the stable operation of the network is endangered.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

The construction of a distribution network is subject to the same authorisation procedures as the construction of a generation facility (see question 3).

Further, the cantons assign grid areas in their sovereign territory to specific distribution network operators who are – in return – obliged to connect all end users and electricity generators to the distribution grid within this designated area.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

The Electricity Supply Act provides for market opening in two stages. In the first five years (2009–2013), end users with an annual consumption of more than 100MWh are entitled to grid access and can therefore be active on the market. After this period, households and other small-scale consumers will follow, provided that the respective decision is adopted by the parliament (which has not been the case yet) and voters will not reject this step in an optional referendum (which may be requested by 50,000 voters). Due to a combination of jurisprudence, international electricity market price developments, special interest politics and legal provisions to protect end consumers, only a few eligible end consumers have entered the market in the past few years. However, since the international electricity market price decreased and the Swiss currency appreciated compared with the euro, it became increasingly interesting for end consumers to participate in the market. As of 2016, 56 per cent of the eligible end consumers became active on the market. The annual consumption of these market participants amounts to approximately 16TWh. As outlined in question 4, access can, however, be denied in case of legitimate business reasons.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

The Electricity Supply Act includes a provision that obliges (distribution) network operators to coordinate their activities and to draw up long-term plans for operating a secure, productive and efficient network. In 2015, ElCom conducted a survey on these long-term plans for the operation and development of the distribution network. Apart from that, there are no governmental measures such as rate or tax benefits to encourage the expansion of the distribution network.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Network operators are obliged to grant third parties non-discriminatory access to their networks. The tariffs for the use of the distribution grid are set by the network operators and are subject to several provisions of the Electricity Supply Act and the (ex post) review of the regulator. The Electricity Supply Act provides that the grid use tariff shall not exceed the recoverable costs, fees and royalties (see question 12). ElCom (the regulatory authority) is responsible for the official examination of grid use tariffs and may order their reduction or prohibit their increase. In addition, the Electricity Supply Act provides that the grid use tariffs must have a simple structure, reflect the costs incurred by end users, are independent of the distance between power injection

and power consumption and uniform per voltage level and client group within each network.

Beginning with the tariffs for distribution services in 2009, these tariffs have been intensively scrutinised by ElCom and the reviewing judicial authorities. Many questions have been solved in the meantime whereas, as of today, still a number of proceedings are pending.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

No particular authorisation is required for the sale of power to (commercial or domestic) customers.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Non-eligible end consumers (see question 15) are entitled to receive electricity 'at the necessary quality' and 'at an appropriate price'. The Ordinance on Electricity Supply specifies 'appropriate price' as that the tariff for the energy delivery to these consumers must be based on the acquisition costs for efficient energy generation and on the long-term purchase agreements of the distribution network operator. These costs are subject to an ex post scrutiny by ElCom.

Until 1 March 2013, the Ordinance on Electricity Supply included a provision according to which the tariff had to be based on the market price, if it was lower than the acquisition costs. Thus, eligible end consumers who did not enter the market in the first stage of the liberalisation could benefit from the lowest possible tariffs without the need for any negotiations, which deterred them from the participation on the market. As of 1 March 2013, this provision has been revoked which encouraged more eligible end consumers to enter the market (see question 15).

No tariffs or regulations exist regarding electricity prices for consumers who participate in the market. However, excessive or discriminatory electricity tariffs may infringe the Federal Act on Cartels (the Competition Act) and the Federal Act on the Supervision of Prices.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

No specific rates for wholesale power exist. However, electricity buyers, who are not end consumers, but sell the electricity to third parties, automatically participate in the market (see question 19). The rates for wholesale power to such customers are therefore subject to the Competition Act and the Federal Act on Supervision of Prices only.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

Network operators are obliged to connect all end users and electricity producers within their designated network zone to their grid (see question 14). Further, the Electricity Supply Act provides an obligation for distribution network operators (who are usually vertically integrated companies also selling electricity) to ensure that all end consumers not participating on the market receive the requested amount of electricity at a reasonable price (see question 19). However, there may be additional public service obligations according to cantonal energy laws.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

The general policy is set forth by the Federal Council and must be approved by the parliament in case a federal act is concerned. The federal regulatory authorities ElCom, SFOE, the Swiss Federal Nuclear Safety Inspectorate (ENSI) and ESTI monitor the electricity sector in their designated areas. Cantons may designate authorities to supervise the application of their own regulations (which may exist within the framework of the federal law).

23 Scope of authority

What is the scope of each regulator's authority?

ElCom is responsible for the application of the Electricity Supply Act and the Ordinance on Electricity Supply and thus for securing the smooth transition from a monopoly-dominated electricity supply sector to an electricity market based on competition. ElCom has to ensure that the liberalisation of the market does not result in excessive tariff increases – a task it took over from the Office of the Price Supervisor on 1 January 2008. ElCom has also to ensure that the network infrastructure is properly maintained and expanded as necessary in order to guarantee an adequate supply of electricity. To effectively perform its various tasks, ElCom has been entrusted with extensive judicial powers. It monitors compliance with the provisions of the Electricity Supply Act and the Energy Act, and can pronounce legally binding decisions and rulings as necessary.

SFOE is responsible for the formulation of the energy policy and for all questions relating to energy supply and energy use within DETEC. SFOE is particularly responsible for the preparation of enactments and for their implementation, as well as for authorisation of certain installations.

ENSI is the national regulatory body with responsibility for the nuclear safety and security of Swiss nuclear facilities.

ESTI is the body controlling and approving installations with high tension (greater than 1,000V) and installations with low tension (see question 3).

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

ElCom consists of seven independent members appointed by the Federal Council plus an independent secretariat. It is not subject to any directives of the federal council, and acts independently of the federal administration and the regulated business.

SFOE is a part of DETEC. As such, it is independent from the regulated business, but a branch of the federal government.

ENSI is an independent body constituted under public law and supervised by an independent board, which is elected by the Federal Council to which it is directly accountable.

ESTI is a separate division of Electrosuisse SEV Association for Electrical Engineering, Power and Information Technologies, operating on behalf of the government. Electrosuisse is a private association according to Swiss law whose members are companies and professionals active in the electricity industry.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Decisions of ElCom, SFOE and ESTI can be appealed to the Federal Administrative Tribunal, which may carry out a full review of the decision (under the reservation of the technical discretion of regulatory authority). The Federal Act on Administrative Proceedings and the Federal Law regarding the Administrative Tribunal provide the legal framework for such appeals. Decisions of the Federal Administrative Tribunal may be challenged at the Federal Supreme Court, where the review is essentially restricted to questions of law.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The Federal Competition Commission (ComCo) is in charge of Competition Law merger control. ComCo consists of 12 members

who are elected by the Federal Council. The presidency consists of three members. The Federal Act on Cartels demands that the majority of the members of ComCo are independent experts – usually law and economics professors. Deputies of business associations and consumer organisations take the other seats. This composition must ensure objective election criteria as well as sufficient know-how to take objective decisions.

All activities of ComCo are subject to the provisions of the Federal Act on Administrative Procedure as long as the Federal Act on Cartels does not deviate from it. Appeals against decisions of ComCo may be addressed to the Federal Administrative Tribunal. The decisions of the Federal Administrative Tribunal may be reviewed by the Federal Supreme Court.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Concentrations of undertakings must be notified to ComCo before they are carried out when, in the last accounting period before the concentration:

- the undertakings concerned reported a joint turnover of at least 2 billion Swiss francs or a turnover in Switzerland of at least 500 million Swiss francs; and
- at least two of the undertakings concerned reported individual turnover in Switzerland of at least 100 million Swiss francs.

Notwithstanding the thresholds mentioned above, notification is mandatory when, on termination of a procedure initiated pursuant to the Federal Act on Cartels, a legally enforceable decision establishes that a participating undertaking occupies a dominant position in a market and when the concentration concerns either that market or an adjacent, upstream or a downstream market.

ComCo clears a notified concentration if:

- the concentration does not create or strengthen a dominant position liable to eliminate effective competition; or
- concentration does lead to a strengthening of competition in another market that outweighs the harmful effects of the dominant position.

Similar to EU merger control, Swiss merger control procedure is divided into two phases. In Phase I, ComCo must advise the notifying undertakings within 30 days from the notification whether it intends to carry out an in-depth review of the concentration. In the case of no decision within this period, the undertakings concerned are allowed to close the transaction. In Phase I, ComCo assesses whether there are indications of a dominant position being created or strengthened as a result of the concentration. Third parties are excluded from the Phase I procedure, which allows a fast and discrete assessment of the intended concentration.

If ComCo reveals indications that a dominant position is being created or strengthened as a result of the Phase I assessment, an in-depth examination has to be carried out within a period of four months (Phase II). The decision to open Phase II proceedings, as well as the final decision of ComCo (to block or approve a merger) will be published. Further, ComCo publishes the principal terms of the merger and gives third parties the opportunity to state their position with respect to the proposed transaction. Phase II terminates either by approval of the merger in the case that the concentration does not have any significant adverse effect on competition, or by approval of the concentration, subject to remedies or by prohibition of the concentration.

It was planned to have the Federal Act on Cartels, including the Competition Law Merger Control Act, revised in order, among other things, to adopt the duration of Phase I and Phase II proceedings to the respective provisions of EU Competition Law. However, in late 2014 the efforts to have the Federal Act on Cartels revised were stopped for political reasons.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

ComCo is responsible for the application of the Competition Act (see question 26). That includes taking action against an unlawful restriction of competition through a concerted practice and against an abuse of a dominant position.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

Similar to EU Competition Law, Swiss Competition Law covers two main anticompetitive types of behaviour.

First, agreements or concerted practices between two or more undertakings that significantly affect competition in the market for certain goods or services, not justified on grounds of economic efficiency, and all agreements or concerted practices leading to the suppression of effective competition are unlawful. This provision covers a wide variety of behaviours. With regard to horizontal agreements, the law assumes agreements or concerted practices to eliminate effective competition (horizontal hard-core restrictions) if they:

- directly or indirectly fix prices; or
- restrict the quantities of goods or services to be produced, bought or supplied; or
- allocate markets geographically or according to trading partners.

The elimination of effective competition is also assumed in the case of agreements or concerted practices between undertakings at different levels of the market regarding fixed or minimum prices as well as in the case of agreements in distribution contracts regarding the allocation of territories, insofar as sales by other distributors into these territories are not permitted (vertical hard-core restrictions). These presumptions may be rebutted if it can be shown that effective competition is not eliminated by these agreements or concerted practices.

Second, undertakings in a dominant position may not abuse that position. Practices of dominant undertakings are deemed unlawful when such undertakings, through the abuse of their position, prevent other undertakings from entering a market, from competing in the market or when they adversely affect trading partners.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

ComCo can prohibit agreements and concerted or unilateral practices that are incompatible with the Federal Act on Cartels. Undertakings that participate in hard-core restrictions and undertakings abusing a dominant position can furthermore be fined by ComCo. The fine is capped at 10 per cent of the infringing undertaking's turnover of the previous three business years. Finally, in the case of an alleged infringement, ComCo can issue a commitment decision with the consent of the accused undertaking.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

The Electricity Supply Act determines that Swissgrid must ensure that the majority of its capital and associated voting rights are held directly or indirectly by cantons and municipalities. Thus it is not possible for foreign investors to become majority shareholders of Swissgrid. However, they are allowed to become minority shareholders. No other special requirements or limitations on acquisitions in the electricity sector by foreign companies apply at the federal level.

Update and trends

Energy Strategy 2050:
In 2007, the energy strategy of the Federal Council was based on four pillars: energy efficiency, renewable energies, replacement and new construction of large power stations for electricity production (including nuclear power stations) as well as external energy policy. Following the reactor disaster of Fukushima in 2011, Federal Council and parliament decided to progressively withdraw from nuclear energy production. This decision, together with further far-reaching changes in the international energy environment, requires a profound change in the Swiss energy supply system. For this purpose, the Federal Council has developed the Energy Strategy 2050, which continues and intensifies the strategic thrust of the Energy Strategy 2007 by adding new objectives. In particular, the five nuclear power stations shall now be shut down at the end of their technically safe operating life and not be replaced.

On 4 September 2013, the Federal Council submitted the first set of measures of the Energy Strategy 2050 to parliament. The Council wishes to significantly develop the potential for energy efficiency and exploit the potential of water power and the new renewable energies (sun, wind, geothermal, biomass). The set of measures entail a total revision of the Energy Law as well as changes in various other federal laws. On 8 December 2014, the National Council approved the set of measures in a first reading and was followed by the Council of States on 23 September 2015. On 30 September 2016 the final vote took place and the Swiss parliament confirmed the first set of measures of the Energy Strategy 2050. However, before this new legislation enters into force (which is planned for 1 January 2018), it is possible that a referendum against this new law will be held. The earliest possible time for such a referendum to take place is 21 May 2017.

The parliament has already strengthened the development of renewable energies through an amendment of the Energy Law that came into force as of 2014. Equally, the action plan 'Energy Research' is already in force. On 13 April 2016, the Federal Council submitted a separate draft bill on the further development of the power grid (Power Grid Strategy) to parliament.

In a second stage of the Energy Strategy 2050, the Federal Council wishes to replace the current support system by a management system. On 28 October 2015, a draft for a respective constitutional article was sent to parliament and is currently being examined by the National Council's Committee for Environment, Spatial Planning and Energy (ESPEC-N).

Commentary on energy law
In August 2016 the first ever commentary on the Swiss energy law was published. The commentary covers the Electricity Supply Act, the Act on Utilisation of Water Power, the Act on Low and Heavy Current Electricity Utilities, the Act on CO2 Emission Reductions, the Act on Nuclear Energy and the Nuclear Energy Liability Act.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

There are no specific authorisations required to construct and operate interconnectors. However, since interconnectors are usually part of the transmission grid, it can be referred to the authorisations required to construct and operate the transmission network (see question 9). Further, the Electricity Supply Act provides that the transmission grid has to be owned and operated by the national TSO Swissgrid.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

The Electricity Supply Act provides regulation for cross-border electricity supply. The remuneration for cross-border utilisation of the transmission grid is based on the costs incurred through the actual utilisation thereof and the capital costs, including long-run average incremental costs. These costs must be calculated separately and cannot be charged to domestic end consumers. In the event that demand for cross-border transmission capacity exceeds the available supply, Swissgrid distributes the available capacities among the bidders on the basis of standard market procedures such as auctions.

The TSOs in the central west Europe region and central south-east region have agreed that future auctions will be conducted centrally via CASC.EU, which was set up in 2008. CASC stands for Capacity Allocation Service Company and it is a private limited company according to Luxembourg law.

The company provides services in relation to cross-border congestion management for transmission system operators and functions as an auction office for annual, monthly, daily and intra-day procedures. Swissgrid has been a shareholder of CASC.EU since November 2010.

In addition, the Electricity Supply Act provides for cross-border merchant lines, which can be exempted or partly exempted from third party access and to which the ordinary tariff system is not applicable.

Furthermore, there are continuing negotiations between the EU and Switzerland regarding an electricity agreement, which is, in the event of a conclusion, most likely to result in the adoption of the EU cross-border regime by Switzerland.

Finally, Switzerland is a founding member of the European Network of Transmission System Operators for Electricity (ENTSO-E), which has been in operation since summer 2009. ENTSO-E is made up of 42 TSOs in 34 European countries. ENTSO-E's main responsibilities are to draw up network codes, coordinate the TSOs and further develop the transmission systems.

At the moment, for political reasons, Switzerland will not be able to participate in the Europe-wide Day-Ahead Market Coupling, which started mid-2015.

STAIGER, SCHWALD § PARTNER
ATTORNEYS-AT-LAW

Marc Bernheim **marc.bernheim@ssplaw.ch**
Gaudenz Geiger **gaudenz.geiger@ssplaw.ch**
Damian Hess **damian.hess@ssplaw.ch**

Genferstrasse 24
8002 Zurich
Switzerland

Tel: +41 58 387 80 00
Fax: +41 58 387 80 99
www.ssplaw.ch

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

There are no specific restrictions on transactions between electricity utilities and their affiliates. However, the parties have to comply with the rules on unbundling. It is therefore required that electricity supply companies secure the independence of their network operations. Cross-subsidisation between network operation and other areas of activity is prohibited. Furthermore, Swissgrid may not transfer the ownership of the transmission network or parts of it to anyone else, including, of course, its shareholding electricity utilities.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

Non-compliance with unbundling rules is subject to the jurisdiction of ElCom and fines of up to 100,000 Swiss francs can be levied.

Turkey

Değer Boden Akalın, Şeyma Olğun and Ayşegül Önol

Boden Law

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Generally speaking, government policy in the electricity sector is to maintain continuous, high-quality, cost-effective, reliable and environmentally friendly energy supplies and to have a liberal, competitive, transparent, non-discriminatory and stable market. In order to achieve this market, the most recent governmental strategy documents and strategy plans include the following goals:

- promoting energy efficiency;
- promoting new technologies, a diversity of resources and the use of domestic and renewable resources in a way so as to decrease dependency on foreign resources;
- structuring and operating the market in a way that ensures security of supply;
- considering climate change and its environmental effects in energy sector activities; and
- protection of the environment.

Legislative framework

In 2001, the main legislative document that created the current market structure, the Electricity Market Law No. 4628 (Law No. 4628) was issued as part of the efforts to harmonise with the EU and to liberalise the market. Under Law No. 4628, the Energy Market Regulatory Authority (EMRA) was established to regulate and supervise the market as an independent body. Law No. 4628 was amended with Electricity Market Law No. 6446 (EML), which entered into force on 30 March 2013. Law No. 4628 is still in force, but its name has changed to the Law on the Organisation and Duties of the Energy Market Regulatory Authority. Therefore, Law No. 4628 only regulates the duties and rights of EMRA, while the EML regulates market activities.

Pursuant to the EML, electricity market activities consist of generation, transmission, distribution, wholesale and retail, market operation as well as import and export activities. To carry out any of the market activities, market participants are required to obtain licences from EMRA except for certain generation activities (see question 3). The EML and the main secondary legislation, namely the Electricity Market Licence Regulation published in the Official Gazette dated 2 November 2013 No. 29908 (EMLR) regulate the market activities and type of licences. Each market activity, on the other hand, is subject to other secondary legislative documents, which regulate in detail the specific activity. Different generation activities such as renewable energy, nuclear energy and energy efficiency are also subject to their specific laws and implementing regulations.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Licensing in general

Pursuant to the EML, electricity market activities consist of generation, transmission, distribution, supply, market operation as well as import and export activities. To carry out any of the market activities, market participants are required to obtain licences from EMRA, except for certain generation activities (see question 3).

In the past, as a state monopoly, the Turkish Electricity Authority (TEK) was responsible for all generation, transmission and distribution activities. In 1984, following the adoption of Law No. 3096, TEK's monopoly on electricity activities was weakened and private companies were given the opportunity to operate in the market. TEK was first unbundled in 1993 into two state-owned enterprises: one for generation and transmission (Turkish Electricity and Transmission Company (TEAS)) and the other for distribution (Turkish Electricity Distribution Company (TEDAS)). In 2001, TEAS was unbundled into three state-owned companies: one for generation (Turkish Electricity Generation Company (EUAS)), one for transmission (Turkish Electricity Transmission Company (TEIAS)) and one for trade (Turkish Electricity Wholesale Company (TETAS)). In 2004, TEDAS was included in the privatisation portfolio as part of a Privatisation High Council Decision and as explained below under 'Distribution', the privatisation process has been completed. EUAS is also in the process of being privatised.

Under the EML and the EMLR, licences may be granted for a maximum term of 49 years; however, the term for the licences regarding generation, distribution and transmission may not be less than 10 years.

Each activity is subject to a separate licence. However, the export activity can be conducted by generation licensees and supply licensees, while import activity can be conducted by supply licensees. Import and export activities of such legal entities are regulated under their respective supply or generation licences and do not require separate licences.

A licence cannot be assigned. However, there are certain exceptions for generation licences (see below). A minimum share capital requirement is sought for electricity companies under the EMLR, the amount of which differs depending on the activity. A licence fee, which differs depending on the activity, also applies.

Generation

Generation licence

In principle, generation activity is subject to a generation licence (see question 3). In Turkey, generation activity is carried out by public and private generation companies and organised industrial zone legal entities. EUAS, the state-owned generation company, is in the process of being privatised. EUAS' market share, along with its affiliates, was approximately 22 per cent as of the end of 2015. Generation companies are able to sell electricity or capacity to suppliers and eligible consumers. They can also purchase electricity or capacity, in order to fill the gap between their actual production and their supply requirements, and EMRA will determine the upper limit that they can purchase. The upper limit will be a percentage of the total annual amount of generation stipulated in their generation licence.

The total amount of electricity that a real person or entity can generate through generation companies under its control should not exceed 20 per cent of the electricity amount generated in Turkey in the preceding year.

As mentioned above, a licence cannot be assigned. However, a step-in right is provided in the EMLR for banks and financial institutions, which may be exercised only with regard to the generation licences. There are other exemptions under the EMLR, set forth for (i) merger and demerger transactions conducted by generation licensees (ii) transfer of generation facilities provided that the transfer is conducted through sale, transfer, lease or other similar types of contracts and

(iii) transfer of the rights and obligations of a licensee to another legal entity that has the same partnership structure.

Notwithstanding the foregoing, the EML provides that some activities may be conducted as being exempt from the licence requirement (see question 3).

Preliminary licence

Before applying for a generation licence, investors are expected to fulfil certain requirements stated in the preliminary licences such as obtaining the necessary decisions, permits and approvals (eg, environmental impact assessment decisions, technical interaction permit for wind energy applications, approval of zoning plans for preliminary projects) or completing certain transactions such as property acquisition or usufruct right establishment. A preliminary licence can be given for maximum 24 months except for the occurrence of force majeure events; however, depending on the installed capacity and resource type of the generation facility concerned, such period may be extended up to 36 months by a decision of EMRA's board.

Both the EML and the EMLR restrict share transfers and acts and transactions which may results in share transfers and change in shareholding structure of the preliminary licensee for the duration of the preliminary licence, except in cases of inheritance and bankruptcy. Acting contrary to such restriction results in the annulment of the preliminary licence. The EMLR excludes changes in the shareholding structures arising from transfer of publicly owned shares of publicly held companies or changes in the shareholding structure of such preliminary licensee's foreign shareholder from the scope of such restriction. Such restriction is also not applicable to legal entities granted a preliminary licence for generation facilities anticipated to be established under international agreements.

Transmission

Electricity transmission activities are conducted solely by TEIAS.

Distribution

Turkey's distribution network is divided into 21 distribution regions, 20 of which were owned by TEDAS and one by a private party, namely the Kayseri region. After the inclusion of TEDAS in the privatisation programme, a separate distribution company was established in each of the 20 distribution regions owned by TEDAS.

The privatisation process of all of the distribution companies has been completed. At the time of their privatisations, distribution companies were able to perform retail sales activities. However, distribution companies unbundled their distribution and retail activities into separate legal entities as of 1 January 2013. The retail companies established as a result of such unbundling are defined as 'authorised suppliers' as explained below under 'Supply'.

The EML provides that a distribution company cannot engage in any activity other than distribution or be a direct shareholder of a legal entity engaged in any other market activity. However, the EMLR allows distribution companies to provide out-of-market activities which EMRA will consider to be of a nature that will increase efficiency in the electricity distribution activity.

As per the EMLR, distribution companies are obliged to act independently in their businesses and transactions without the interference of any real and/or legal persons controlling the relevant distribution company. Members of the board of directors and executives at a level of deputy general manager or higher and who hold signatory authority in an electricity distribution company, and those from generation and authorised supply companies under the same control as the electricity distribution company must be different individuals. Such managers cannot hold offices on the board of directors or similar organs of the controlling companies or other companies that are under the control of the controlling companies, formed for the purposes of the supervision, coordination, management or auditing of the electricity distribution and retail sale and/or generation activities of such controlling companies.

Distribution companies are obliged to submit annual reports indicating the precautions taken complying with the legislative requirements related to the legal unbundling. This report is required to be submitted by the end of November each year.

Please also note that organised industrial zones are also entitled to carry out distribution activities within the organised industrial zone limits provided that they obtained an organised industrial zone distribution licence.

Market operation

Market operation activity is defined as the operation of organised wholesale power markets and the financial settlements of the transactions made in these markets.

Organised wholesale markets are defined as:

- day-ahead market and intraday market where electricity, capacity, and retail sale activities are conducted, and which are operated by an intermediary legal entity holding a market operation licence – namely the Energy Markets Operation Company (EPIAS);
- markets where standardised electricity contracts (ie, capital market instruments) and the derivative markets where derivatives based on the electricity or capacity are traded, and which are operated by Exchange Istanbul (Borsa Istanbul); and
- the balancing power market and the ancillary services market, which are organised and operated by TEIAS.

The day-ahead market has been in operation since December 2011; the intraday market, on the other hand, only started operating on 1 July 2015. Until EPIAS obtained its market operator licence and commenced its activities, TEIAS acted as the market operator for the day-ahead and intraday markets. Once EPIAS has obtained its market operator licence, the day-ahead and intraday markets along with settlement activities were transferred from TEIAS to EPIAS as of 1 September 2015.

Supply

The EML merged the wholesale and retail sale activities into one licence type, the 'supply licence' and existing wholesale and retail sale licence holders are ex officio granted a supply licence without prejudice to their rights under the existing licences. According to the EML, supply activities may be conducted by generation companies and public and private sector supply companies.

Retail and distribution activities had previously been provided under one legal entity. Since the separation of the retail side from the distribution arm of distribution companies on 1 January 2013, retail companies have been established. Such retail companies are now defined as 'authorised suppliers' under the EML. Authorised suppliers are entitled to sell electricity to eligible customers across Turkey, non-eligible consumers in their region and customers of last resort (ie, the eligible consumers whose power demands cannot be met by other suppliers or who have not selected their suppliers despite being eligible to do so), as 'last resort supplier', again in the relevant distribution region. Suppliers that previously held a wholesale licence or obtained supply licence under the EML are entitled to sell electricity to eligible consumers only. The eligible consumer limit has been determined to be 3,600kWh per annum for 2016. In addition, supply companies including authorised suppliers may also import from and export to countries with which the interconnection condition is satisfied.

The EML introduced the 'last resort supplier' concept. The EML obliges the authorised supply companies to supply power to customers of last resort. According to the EML, tariffs of the last resort suppliers would be regulated. The EML further stipulates that some part of the power to be supplied by the last resort supplier must be provided by TETAS. The percentage that would be provided by TETAS is annually determined by EMRA.

Authorised supply companies are obliged to submit annual reports to EMRA indicating the precautions taken complying with the legislative requirements related to the legal unbundling. This report must be submitted by the end of November each year.

Import and export

Export activity can be conducted by generation and supply licensees, while import activity can be conducted by supply licensees. Import and export activities of such legal entities are regulated under their respective supply or generation licences and do not require separate licences. Additionally, TETAS is entitled to sign import and export agreements that are within the scope of intergovernmental agreements related to import and/or export and conduct import and export activities in accordance with such agreements. See question 33 for the details and special conditions for the performance of export and import activities.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

Market participants should obtain a generation licence from EMRA to construct and operate generation facilities. The EML introduces a preliminary licence for generation activities. Before applying for a generation licence, investors are expected to fulfil certain requirements stated in the preliminary licences such as obtaining the necessary decisions, permits and approvals (eg, environmental impact assessment decisions, technical interaction permit for wind energy applications, approval of zoning plans for preliminary projects) or completing certain transactions such as property acquisition or establishment of usufruct right. A preliminary licence can be given for a maximum period of 24 months (see question 2). The EML stipulates that in order to obtain a generation licence, following the fulfilment of the requirements stated in their preliminary licences, applicant companies will have to provide a security deposit which will amount to no more than 10 per cent of the value of the investment. For renewable energy, market participants should also obtain a renewable energy resource (RES) certificate from EMRA.

In both preliminary licence and licence applications regarding generation activity, applicants have to submit a letter of guarantee to EMRA for the amount determined based on the resource type by EMRA for each installed capacity in MW. The ceiling for letters of guarantee is determined by EMRA.

In order to obtain a preliminary licence and a generation licence, an applicant must pay licence fees, the amount of which depend on the installed capacity of the generation facility and, must also pay annual licence fees depending on the generated electricity amount after obtaining the licence.

With respect to power plants based on domestic natural resources, the right to use such resources must be obtained. For instance, for hydroelectric power plants, private parties should sign an agreement on the right to use the water with the General Directorate of State Waterworks after obtaining the pre-licence from EMRA. For lignite, hard coal, asphaltite, bituminous schist, geothermal and wave resources, market participants should sign a fuel supply agreement regarding the energy resource to be used or acquire the right to use the energy resource or other rights in rem or make a commitment that such rights will be acquired. For solar resource, the market participant should acquire the right of usage on the land where the solar power plant is to be established.

According to the EML, in licence applications to establish a power plant based on solar or wind power, applicants should submit a measurement of a certain period of time duly taken within the past five years in the area where the power plant will be established and the EMLR regulates the processes and principles for such measurements. If the landowner where the solar power plant is to be established applies for a licence, no other licence application can be made for the relevant land. If there is more than one licence application for a solar or wind power plant for the same region or the same transformer station or both, the companies wishing to establish a solar power plant must participate in a contest to determine which one of them will connect to the system.

According to Regulation on the Contest regarding the Pre-licence Applications for Establishing Power Plants Based on Wind and Solar Power (Contest Regulation) published in the Official Gazette dated 6 December 2013, No. 28843 the contests for both wind and solar power projects will be based on contribution fees to be paid to TEIAS. As a result of the bidding procedures, the company or companies placing the highest wind power or solar power project contribution bids are granted the right of connection to the system. TEIAS and the company to which EMRA grants a generation licence sign a wind power plant or solar power plant contribution fee contract. The contribution fees consist of Turkish lira amounts to be paid per each MW of installed capacity of the relevant project. The winners would pay their contribution fees within three years (in equal annual instalments),the first instalment of which would be paid at the beginning of the year subsequent to the provisional acceptance of the first unit of the relevant generation facility.

The EML provides that some activities may be conducted as being exempt from the pre-licence and licence requirements. In line with the EML, a Regulation on the Generation of Unlicensed Electricity in the Electricity Market (Unlicensed Electricity Regulation) and the Communiqué on the Generation of Unlicensed Electricity in the Electricity Market were enacted and published in the Official Gazette dated 2 October 2013, No. 28783. The Unlicensed Electricity Regulation provides licence exemptions for the following categories:

- emergency groups and generation facilities that are not connected to transmission and distribution systems;
- generation facilities based on renewable energy sources with a maximum installed capacity of 1MW;
- municipalities' solid waste facilities and generation facilities established for the disposal of mud from treatment plants;
- micro-cogeneration facilities (defined by the EML as cogeneration facilities that have a total installed capacity of 100kW and below);
- cogeneration facilities (defined as the EML as cogeneration facility as facilities that simultaneously generate both heat and electricity) that meet the efficiency figures to be determined by the Ministry;
- renewable generation facilities that consume all the electricity that they generate, without feeding it into the transmission or distribution systems; and
- generation facilities owned by legal entities whose majority share capital is directly or indirectly owned by municipalities to be established on the water conveyance pipelines, sewage transport pipelines and the dams that are used for drinking water which are operated by the municipalities.

The Council of Ministers is entitled to increase up to five times the granted limit of the installed capacity of renewable energy generation facilities that will be exempted from the licence requirement which has not been increased so far.

In order to construct an unlicensed power plant, one should first apply to the relevant network operator (ie, distribution company authorised in the region where the power plant will be located or TEIAS) with certain documents, such as land usage right documents, environmental impact assessment document or single line diagram, depending on the energy resource. If the relevant network deems the application sufficient, a call letter to invite the applicant to sign the connection agreement is sent. Upon the issuance of this document, the applicants have 90 days to apply for project approval to the institution authorised by the Ministry and have 180 days for obtaining the approval. Investors sign a connection agreement with the network operator within 30 days following the project approval. However, in order for an unlicensed power plant to become operational, the system usage agreement should also be signed after the provisional acceptance of the plant has been reached in accordance with the Unlicensed Electricity Regulation.

The Unlicensed Electricity Regulation has been significantly amended by the Regulation Amending the Regulation regarding the Generation of Unlicensed Electricity in the Electricity Market published in the Official Gazette dated 23 March 2016, No. 29662 (Amendment Regulation). For the recent amendments on the Unlicensed Electricity Regulation, see 'Update and trends'.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

TEIAS has a legal monopoly regarding transmission activities. No other legal entity is allowed to construct and operate transmission networks. TEIAS must ensure that connection to the transmission system, and the system-use demands of real persons or legal entities, are met in a non-discriminatory manner.

According to the EML, if any new transmission plant or transmission lines to connect such a plant to the system are required for the connection of the generation plants to the system and if TEIAS does not have necessary financing for such an investment, the investment can be made or financed by the company or companies that request connection to the new plant. The investment amount shall be paid back under agreements to be signed between TEIAS and the investor or investors. The term for repayment is a maximum of 10 years. As per the Electricity Market Connection and System Usage Regulation published in the Official Gazette dated 28 January 2014 No. 28896 (Connection and System Usage Regulation), the investment amount is determined by TEIAS as per the methodology approved by EMRA. TEIAS considers

such investment amount as the system usage fee required to be paid by the investor in advance, and does not take any system usage fee from such investor until the total system usage fees reach the total investment amount calculated by TEIAS. In the event that there still remains any amount from the investment amount at the end of the 10-year period, such remaining amount is paid at once at the end of the tenth year by TEIAS.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The Law on Utilisation of Renewable Energy Resources for the Purpose of Generating Electrical Energy published in the Official Gazette dated 17 May 2005, No. 25819 (Renewable Energy Law), provides a renewable energy support mechanism that covers different incentives and benefits for renewable energy projects including feed-in tariffs. The Renewable Energy Law provides different feed-in tariffs (fixed minimum electricity sale prices) depending on the type of renewable energy projects, as follows:

- Turkish lira equivalent of US$0.073 per kWh for hydroelectric power plants;
- Turkish lira equivalent of US$0.073 per kWh for wind power plants;
- Turkish lira equivalent of US$0.105 per kWh for geothermal power plants;
- Turkish lira equivalent of US$0.133 per kWh for biomass power plants; and
- Turkish lira equivalent of US$0.133 per kWh for solar power plants.

The above-mentioned feed-in tariffs will be applicable for the legal entities holding generation licences that started operations in the period between 18 May 2005 and 31 December 2020, and for a period of 10 years from the operation date. The Renewable Energy Law also authorises the Council of Ministers to determine the feed-in tariffs (in terms of tariffs amount, terms and the eligible energy sources) that will apply for the facilities that commence generation after 31 December 2020 (provided that the feed-in tariffs to be determined by the Council of Ministers do not exceed those stipulated by the Renewable Energy Law).

To benefit from the renewable energy support mechanism (RES Mechanism), legal entities holding renewable energy generation licences and the RES certificate should apply to EMRA by 31 October of the year before they wish to benefit. Generators included in the RES Mechanism should remain in the concerned mechanism for the first year (lock-in period). After the above-mentioned 10-year period provided to renewable energy generation facilities expires, facilities generating renewable energy will not be able to participate in the RES Mechanism and will be only able to sell their electricity in the market or through bilateral agreements just like the other market participants.

The method of feed-in tariff payment was recently amended on 29 April 2016 in the Regulation on the Documentation and Support of Renewable Energy Resources, which entered into force on 1 May 2016. For the payment method of feed-in tariffs see 'Update and trends'.

The Renewable Energy Law also features further incentives as bonus tariffs for licence holders that use locally produced mechanical or electro-mechanical equipment or both, or components of this kind in renewable energy facilities, for a five-year term provided that they commence generation activities between 18 May 2005 and 31 Deember 2020. Such bonus tariffs differ according to the type of the renewable energy and the component manufactured from US$0.004 to US$0.024kWh. The Renewable Energy Law also authorises the Council of Ministers to determine such bonus tariffs (in terms of tariff amount, terms and the eligible energy sources) that will apply for facilities that commence generation after such date. The implementing regulation, the Regulation on the Support of the Local Components in Facilities Generating Electricity from Renewable Energy Resources published in the Official Gazette dated 24 June 2016, No. 29752 (New Local Manufacture Regulation) stipulating the principles, standards and certification processes regarding locally manufactured mechanical and electro-mechanical components was recently entered into force and abrogated the Regulation on the Local Manufacture of the Components Used in the Generation of Electricity from Renewable Energy Resources published in the Official Gazette dated 19 June 2011, No. 27969 (Old Local Manufacture Regulation).

For the implementation of the New Local Manufacture Regulation and Incentives see 'Update and trends'.

The Renewable Energy Law limits the total generation of licensed solar energy companies up to 600MW for the solar power based generation facilities commenced until 31 December 2013, and authorises the Council of Ministers to determine the future limits. Note that all the pre-licence contests regarding solar generation licences (see question 3) for the initial 600MW total installed capacity limit have been completed and no new generation licence application for a solar power plant is possible until the Council of Ministers determines the future limits for the companies wishing to obtain generation licences based on solar power. As per the Strategy Plan of 2015–2019 of the Ministry, the total installed licensed solar capacity is planned to be increased to 3,000MW by 2019.

Please note that unlicensed renewable energy generators also benefit from the feed-in tariff for their electricity exceeding their consumption amount automatically without opting into the RES Mechanism similar to licensees. The surplus electricity will be purchased by the relevant authorised supply companies from the feed-in tariffs stated above for a period of 10 years from the start of electricity generation in such facility. However, while the licence holders may continue selling their electricity freely after the expiry of such 10-year period, an unlicensed generator will not be able to sell the electricity it generates through the system and only continue to use it for its own consumption.

Another incentive granted to renewable energy facilities regards the use of state properties. If any state property is used for generating electricity from renewable resources or mines and minerals, the Ministry of Environment and Forestry or the Ministry of Finance shall permit the use of such properties with respect to the facility and access ways and energy transmission grids up to the connection point of the grid in return for a fee. Such permission may be in the form of permits, leases, rights of easement or rights of usage. For facilities that start operating before the end of 2020, for access ways and energy transmission grids up to the connection point, a discount of 85 per cent shall be applied to the fees for permission, lease, right of easement and right of usage for the first 10 years of their investment and operation periods. The Council of Ministers is entitled to extend this deadline by five more years.

According to the EMLR, the legal entities applying for a pre-licence for the construction of general facilities based on domestic natural resources and renewable energy resources shall only pay 10 per cent of the total pre-licensing fee. Generation facilities based on renewable and domestic energy resources shall not pay annual licence fees for the first eight years following the facility completion date inserted in their respective licence.

Also, TEIAS and distribution licensees shall give priority to the system connection of generation facilities based on domestic natural resources and renewable resources. Additionally, authorised supply companies are obliged to purchase the surplus electricity generated at facilities based on renewable energy resources which are exempt from licence obligation at the price stated in the Renewable Energy Law.

The EML provides that some activities may be conducted as being exempt from the pre-licence and licence requirements (see question 3).

Please note that it is also possible to establish co-generation facilities without obtaining a licence (see question 3).

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Government energy policy promotes renewable energy resources to tackle climate change (see question 5). The government is also promoting energy efficiency to decrease the amount of power that is consumed. Turkey also signed the Kyoto Protocol in February 2009; however, it is not listed in Annex B of the Protocol. Please also note that Turkey signed the Paris Agreement opened to the signature at the United Nations Climate Change Conference (COP 21) on 22 April 2016, however has not yet ratified the agreement.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Currently there is no regulatory framework supporting or providing any incentive for the research and development of storage solutions. However, the Electricity Grid Regulation defines energy storage systems as systems that can react quickly, circulate the energy perpetually, supply the energy to or draw the energy from the system when requested, and store the electricity energy in limited capacity perpetually through the help of mechanical, hydraulic, electrochemical, chemical and thermal energy storage systems, and sets forth how the energy storing systems may be used within the scope of ancillary services as per the principles to be prepared by TEIAS and approved by EMRA. Provisional article 1 of the Electricity Grid Regulation published in the Official Gazette dated 28 May 2014 No. 29013 sets forth the deadline for the submission of such principles and procedures by TEIAS to EMRA as 31 December 2015. We are not aware if such principles and procedures are prepared and submitted EMRA by the deadline, however, at the time of writing, no principle or procedure has yet been published in this respect neither by EMRA nor by TEIAS and currently the energy storing systems are not included in the ancillary services regulated under the Electricity Market Ancillary Services published in the Official Gazette dated 7 December 2008, No. 27093.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

To promote private sector nuclear energy investments, the Nuclear Energy Law, the first such law of Turkey, was published on 21 November 2007.

The purpose of the law is to stipulate the procedures and principles regarding the commissioning and operation of nuclear power plants for electrical energy production and energy sale in accordance with energy planning and policies.

The Turkish Atomic Energy Authority published criteria regarding nuclear safety, licensing, reactor types, power plant lifetimes, proven technology, fuel technology, localisation, operational records and electrical power on 19 December 2007 in accordance with article 3 of the Nuclear Energy Law.

Turkish government promotes nuclear power plants; currently there are three nuclear power projects either in the process of realisation or being considered to be realised. One of those is the nuclear power plant is Akkuyu Power Plant, which will be built by one of the subsidiaries of Rosatom State Atomic Energy Corporation, Akkuyu NPP Joint Stock Company, the first power unit of which is expected to be commissioned in 2020. The installed capacity of Akkuyu Power Plant is expected to be 4,800MW.

An agreement on cooperation in relation to the construction and operation of the second nuclear power plant in Sinop was signed on 3 May 2013 between Japan and Turkey. Turkey's second nuclear power plant, which is envisaged to come into operation by 2023 and expected to have an installed capacity of approximately 4,400MW, will be built at Sinop by the Japanese-French Consortium.

A third nuclear power plant is also expected to be built; however, its location has yet to be determined. In November 2014 an agreement was signed to begin exclusive negotiations to develop and construct a four-unit nuclear power plant between EUAS, Westinghouse Electric Company and China's State Nuclear Power Technology Corporation; however, as of the date of writing, the details of this project remain uncertain.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

TEIAS has a legal monopoly on transmission activities. No other legal entity is allowed to construct and operate transmission networks. TEIAS also obtains a transmission licence from EMRA to conduct transmission activities. The transmission licence can be issued for a maximum of 49 years and a minimum of 10 years at a time.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Eligible consumers, legal entities engaged in generation activities, distribution companies and organised industrial zone distribution licence holding companies may request access to the transmission grid.

Requests are evaluated by TEIAS and can only be rejected if:

- the technical features of the network at the required connection point are insufficient;
- the standards with respect to system connection, the condition of the facility to be connected to the system and the technical standards indicated in the relevant regulations have not been met;
- TEIAS justifies that the intended connection would constitute an obstacle to public service obligations; or
- a connection point, which is more economical and provides fewer losses in power compared with the connection point applied to, is available in the case of applications for connection of wind or solar power generation facilities.

Transmission system users shall sign connection or use-of-system agreements (or both) with TEIAS.

If TEIAS is of a negative opinion with respect to the connection to the system and system use, it should justify such an opinion and such an opinion should also be approved by EMRA. If the reasons for such an opinion are not deemed appropriate by EMRA, TEIAS would be obliged to sign the related connection and system use agreements.

In the event that there are multiple applicants wishing to connect to the transmission system from the same connection point and it is not possible for the transmission system to meet all the applications, the following company types will have priority in the respective order:

- the distribution companies;
- organised industrial zone distribution licence holding companies;
- companies generating electricity based on renewable energy; and
- generation companies generating electricity based on domestic natural resources.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

With a legal monopoly over the transmission grid, TEIAS is responsible for the grid's expansion. According to the Electricity Grid Regulation published in the Official Gazette dated 28 May 2014, No. 29013, TEIAS prepares the 20-year statement report regarding the transmission system (Long Term Report).

Such Long Term Report includes items such as investment plans regarding the transmission system and annual improvement plans. In addition to the Long Term Report, TEIAS is also responsible for preparing and publishing a short-term electricity energy supply-demand projection report for the following year with the participation of all the authorities and institutions and the cooperation of the Ministry of Energy and Natural Resources (Short Term Report).

Enabling generation companies to finance and make investments for new transmission lines required for the connection of the generation facilities to the system when TEIAS does not have necessary financing under the repayment plan regulated in the Connection and System Use Regulation (see question 4) may also be interpreted as an encouragement for the expansion and improvement of the transmission grid.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

The transmission service is subject to regulated tariffs consisting of fees required to be collected for the performance of the transmission system usage activity by TEIAS. The transmission tariff is prepared by TEIAS and includes the use of the transmission system usage price, transmission system operation price (market operation included) and

other fees that may occur under the legislation. Transmission system usage and operation tariffs are prepared and proposed by TEIAS.

After preparing its tariff proposal, TEIAS submits it to EMRA for approval and the tariff becomes effective for the tariff period once approved by EMRA. TEIAS is obliged to announce its approved tariffs.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

EMRA is responsible for preparing regulations for connection and reliability of the transmission grid, such as the Grid Regulation and the Connection and System Usage Regulation. These regulations outline the technical and other standards to be met for the transmission system and also for connection to the transmission network.

According to such regulations, the general responsibility for assuring transmission grid reliability lies with TEIAS. TEIAS is obliged to meet the demands of third parties for connection to the transmission network and system use on a non-discriminatory basis and between equal parties. TEIAS is entitled to take necessary measures and actions in the case of any threat to the reliability and safety of the transmission grid. It is also responsible for the planning and development of the transmission system.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Electricity distribution activities are performed by private distribution companies in the regions indicated in their respective licences (see question 2). There are 21 regions and all the distribution companies regarding for each region have a monopoly in their region. There is no possibility of obtaining a new distribution licence in Turkey unless a licence regarding a distribution region is cancelled. In case of cancellation, a privatisation method will apply for granting the relevant concession to operate a distribution licence. It is also possible to acquire shares of a distribution company.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Legal entities engaged in generation activities and eligible and non-eligible consumers can obtain access to the distribution grid. They have to sign connection or use-of-system agreements, or both, with distribution companies. In the event the consumers execute a connection agreement, in order to connect to distribution system such consumers have to certify that a retail sale agreement or bilateral agreement has been executed between such consumer and the supply company.

In principle, users are required to apply to the distribution companies in the region where they are located. Applications are evaluated by the distribution company and can only be rejected if:

- the technical features of the network at the required connection point are insufficient;
- the standards with respect to system connection, the condition of the facility to be connected to the system and the technical standards indicated in the relevant regulations have not been met;
- the distribution company justifies that the intended connection would constitute an obstacle to public service obligations; or
- a connection point, which is more economical and provides fewer losses in power compared to the connection point applied to, exists, in case of applications as to the connection of wind power or solar power generation facilities.

A distribution company's rejection is subject to EMRA's evaluation.

Electricity generation facilities must apply to distribution companies to be granted access to the distribution grids after obtaining preliminary licence but before applying for a generation licence, upon verification that their connection applications are appropriate.

Similar to the investments regarding the transmission system explained in question 4, in the event new investment or an expansion investment is necessary to for generation and consumption facilities to connect to the distribution system and if the relevant distribution company does not have sufficient financing for such establishment or such establishment cannot be timely planned, the legal or natural persons requesting such connection may be required to finance such investment themselves on behalf of such distribution company, in which case the investment amount is repaid to such legal or natural person in maximum 12 monthly instalments within the year following the commissioning.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

There are no rate or tax benefits to encourage the expansion of the distribution network. On the other hand, the distribution companies are obliged by law to make the necessary capacity increases and investments.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

After revenue requirements and costs for each distribution company are determined, considering elements such as efficiency, the loss/theft ratio, and quality, EMRA applies a tariff equalisation scheme (national tariff). The national tariff is stipulated to eliminate regional differences in non-eligible consumer tariffs by allowing cross-subsidies from low-loss regions to high-loss regions for the transition period, which was stipulated by the EML as the period until 31 December 2015 and has been recently extended to 31 December 2020 by a decision of the Council of Ministers. The reason for the national tariff system was the high level of theft or loss in certain regions of Turkey.

There are two components of the tariff: retail sales and distribution, which includes loss/theft amounts, transmission and retail services. The retail sales tariff is subject to a gross profit margin cap. Distribution, on the other hand, is subject to revenue caps. Operating expenses and investment requirements related to distribution services, retail services and transmission are to be reflected in the revenue cap.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

A supply licence is required for the sale of power to customers. Licences are granted by EMRA for a maximum term of 49 years (see question 2). Authorised suppliers are entitled to sell electricity to eligible customers across Turkey, non-eligible consumers and customers of last resort as last resort supplier (see question 2) in the relevant distribution region. Suppliers that previously hold a wholesale licence and the ones granted supply licences afterwards are entitled to sell electricity to eligible consumers only. As a result, supplier companies and authorised supply companies will not have equal rights unless the eligible consumer limit is decreased to zero kWh.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Retail sales to non-eligible consumers, wholesales of TETAS and last resort electricity supplies are regulated and subject to a tariff. Until the cross-subsidy practice is abandoned, last resort supplies will be subject to the retail sales tariff. Eligible consumers, on the other hand, can make bilateral electricity purchase agreements with providers of electricity such as electricity generation companies and private wholesale companies (supply companies). At present, the eligible consumer limit is 3,600kWh per annum for 2016.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

The wholesale tariff of TETAS is determined by TETAS and approved by EMRA annually. The private wholesale companies (supply companies) may sell power with bilateral agreements to eligible consumers (see question 18). In addition, they may sell power in the day-ahead and intraday markets.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The EML obliges the authorised supply companies to supply power, as a last resort supplier, to the eligible consumers whose power demands cannot be met by other suppliers (see question 2). Authorised supply companies are also required to meet the energy and capacity demands of non-eligible consumers in their regions.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

EMRA, which is an independent regulatory authority, determines the regulatory policy with respect to the electricity sector. It has been established as an independent regulatory authority to inspect and regulate the electricity market.

23 Scope of authority

What is the scope of each regulator's authority?

EMRA has a very broad authority to regulate the market, including:

- establishing a legislative framework to ensure reliable, high-quality, stable and low-cost electricity services;
- granting, amending or cancelling licences;
- approving and amending tariffs;
- establishing and enforcing standards and rules for relations among affiliates to promote competition; and
- imposing administrative fines and sanctions for non-compliance with the applicable legislation and the terms and conditions set out in the licence or the decisions of EMRA.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

The Council of Ministers appoints the members and chairman of EMRA. The board of EMRA consists of nine members, including a chairman and a vice chairman. Candidates must meet several criteria in order to be appointed to the board of EMRA. They must have completed at least a four-year programme comprising an undergraduate degree in law, political sciences, administrative sciences, public administration, economics, engineering, management or public finance; have a minimum of 10 years' experience in the public or private sector; and have distinguished themselves in their professions.

EMRA has financial and administrative autonomy. However, all activities and transactions of EMRA became subject to audit by the Turkish Court of Accounts.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

The decisions of EMRA can be challenged before the Administrative Court of First Instance by the related parties within 60 days of receipt of EMRA's decision.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

The Competition Authority (TCA), which is established pursuant to Law No. 4054 on Protection of Competition dated 13 December 1994 (the Competition Law), has the authority to approve or disapprove mergers or other changes in control over businesses in a sector or acquisitions of utility assets. In addition to the TCA's authority with respect to certain mergers, acquisitions or changes in control, EMRA's approval is required (see question 27).

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

Pursuant to article 7 of the Competition Law, the merger of two or more undertakings aimed at creating a dominant position or strengthening their dominant position, as a result of which competition is significantly decreased in any market for goods or services within the whole or any part of the state, is prohibited. Furthermore, acquisition, except acquisition by way of inheritance, by any undertaking or person of another undertaking, either by acquisition of its assets or all or part of its partnership shares, or of other means that confer it with the power to hold a managerial right, is also prohibited.

The TCA declares, via communiqués, the types of mergers and acquisitions that have to be notified to the TCA, and for which a permission must be obtained for them to become legally valid.

According to Communiqué 2010/4 regarding Mergers and Acquisitions Requiring the Approval of the Competition Board, published in the Official Gazette dated 7 October 2010, No. 27722, certain turnover thresholds are set forth regarding merger and acquisition transactions in order to determine whether the transaction is subject to the TCA's approval. According to the Communiqué, in the case of a merger or acquisition, the TCA's approval must be obtained if the total domestic turnovers of parties to a transaction collectively exceed 100 million Turkish liras and the domestic turnovers of at least two transaction parties separately exceed 30 million liras; or in the case of an acquisition, the value of assets or business subject to the acquisition or in case of an merger the local turnover of one of parties exceeds 30 million liras and the worldwide turnover of at least one other party exceeds 500 million liras. Please note that, as per the legislation, while calculating the turnover of a transaction party, the turnover of the relevant party and of the companies and persons holding control of or being controlled by the equity, management or voting rights of the relevant party is taken into consideration.

In the electricity sector, in addition to the TCA's control, the approval of EMRA is required in the following cases:

- acquisition of 10 per cent or more share in the share capital of a company or 5 per cent or more in a publicly traded company;
- merger between legal entities;
- partial or total spin-off;
- change of control status of any legal entity;
- transfer of a generation facility owned by a licensee through sale, transfer, lease or another similar arrangement resulting in the transfer of the right to use to another legal entity; or
- transfer of the rights and obligations of a licensee to another legal entity which has the same partnership structure.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The TCA can prevent or prosecute anticompetitive or manipulative practices in all sectors, including the electricity sector. EMRA also has authority to approve certain mergers and acquisitions in the energy sector, as explained in question 27. Additionally, as per the Electricity

Market Balancing and Settlement Regulation published in the Official Gazette dated 14 April 2009, No. 27200 (BSR), EMRA, directly or upon the submission of a report by the market operator (ie, EPIAS) or the system operator (ie, TEIAS) to EMRA, is authorised to request the TCA to initiate scrutiny of legal entities who are suspected of any anticompetitive act or transaction in relation with their activities regarding organised wholesale electricity markets regulated under BSR.

Notwithstanding the foregoing, EMRA may take measures regarding an authorised supplier that has anticompetitive practices. The measures that EMRA would take for such authorised suppliers may include restructuring their management and restricting ownership or control relationship with the relevant distribution company.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

No specific criteria are provided for the electricity market. Such standards are provided in the Competition Law.

According to article 4 of the Competition Law, agreements and concerted practices between undertakings, and decisions and practices of associations of undertakings that have as their object or effect or likely effect the prevention, distortion or restriction of competition directly or indirectly in a particular market for goods or services are illegal and prohibited. Examples of such cases are as follows:

- fixing the purchase or sale price of goods or services, elements such as cost and profit that form the price, and any other terms of purchase or sale;
- sharing markets for goods or services, and sharing or controlling all kinds of market resources or components;
- controlling the amount of supply or demand in relation to goods or services, or determining them outside the market;
- impeding or restricting the activities of competitors, excluding undertakings operating in the market by boycotts or other practices, or preventing new entrants to the market;
- apart from exclusive dealing, applying different conditions to persons with equal status for the same rights and obligations; and
- contrary to the nature of the agreement or commercial usages, obliging the purchase of other goods or services together with a good or service, or tying a good or service demanded by purchasers acting as intermediary undertakings to the condition of displaying other goods or services by the purchaser, or imposing terms as to the resupply of a good or service supplied.

In addition, the abuse of a dominant position in the market is also prohibited by the Competition Law. According to article 6, the abuse, by one or more undertakings, of their dominant position in a market for goods or services within the whole or a part of the state on their own or through agreements with others or through concerted practices, is prohibited.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The TCA may impose administrative monetary fines of up to 10 per cent of annual gross revenues of the undertakings generated by the end of the financial year preceding the TCA's infringement decision or by the end of the financial year closest to the date of such a decision, and if it is not possible to calculate it, annual gross revenues determined by the TCA, the TCA may also order the establishment of competition and reversion to the situation before the infringement.

The TCA may also impose monetary fines on real persons employed in the managerial bodies or other employees of the undertakings of up to 5 per cent of the fine imposed on the undertaking.

Another sanction mechanism is established for competition breaches in the organised wholesale electricity market with the BSR (see question 28). If TCA detects a competition breach by a market participant or balancing unit or both, EMRA may impose maximum price limits to the breaching market participant or balancing unit or both in the day-ahead and balancing markets up to a year.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no specific requirements or limitations on acquisitions of interests in the electricity sector by foreign companies.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

As TEIAS has monopoly over the transmission system, it is also the only authority entitled to construct and operate interconnections. The articles of association of TEIAS sets forth that TEIAS is responsible for the preparation of the Electricity Grid Regulation, which determines the technical and operational standards for the interconnected system and BSR, and establishing the required infrastructure and organisation for the implementation thereof, and carrying out the relevant international interconnection works in accordance with the Ministry's international interconnection policies. As per article 8 of the EML, TEIAS may construct or operate the parts of international interconnection lines' located outside the national borders and/or establish an international company to that end, and/or become partner to an existing international company and participate in organisations regarding the operations of regional markets with the approval of the Ministry. In line with the EML, the Import and Export Regulation published in the Official Gazette dated 17 May 2014, No. 29003 (Import and Export Regulation) states that interconnection line capacity allocations, tracking of the use of interconnection lines and the congestion management is conducted by TEIAS, but TEIAS is allowed to transfer these rights and obligation to international institutions totally or partially in accordance with the international agreements, provided that the approval of the Ministry is obtained.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

As per the Import and Export Regulation, cross-border electricity supply is subject to different procedures depending on whether the interconnections are synchronous parallel or not (for details on who can conduct import and export activities see question 2).

Synchronous parallel interconnections

Companies (ie, generation and supply companies for export and supply companies for import) will not need to obtain special permission to perform import and export activities using synchronous parallel interconnections. Currently, the synchronous parallel interconnection lines in Turkey are the interconnection lines established with the European Network of Transmission System Operators for Electricity's (ENTSO-E) Continental Europe Synchronous Area (ie, Bulgaria and Greece) in accordance with the integration of Turkey to the ENTSO-E system. After a long trial period, the ENTSO-E Regional Group Continental Europe's decision on permanent connection to continental Europe was publicly announced in May 2014. In line with this decision and the agreement reached in meetings in April 2014 on the commencement of permanent synchronous operation of the Turkish electricity system with the continental European system, on 15 April 2015 a long-term agreement was signed between TEIAS and ENSTO-E. By the execution of this agreement, Turkey has committed to promote the harmonisation of its electricity regulation with the EU's third electricity package and to comply with the technical standards of ENTSO-E. The Observer State Agreement having been executed between Turkey and ENTSO-E on 14 January 2016, Turkey has become the first observer member of ENTSO-E. The commercial electricity exchange between Turkey and ENTSO-E's Continental Europe Synchronous Area is currently carried out through three connection lines, two of which connect the Turkish system to the Bulgarian system, while the other connects the Turkish system to the Greek system. As of 1 July 2015, Turkey is connected to the system through these three lines, with a transfer capacity of 650MW for import and 500MW for export activities. In order

Update and trends

Amendment to the Unlicensed Electricity Regulation
Prior to the entry into force of the Amendment Regulation, there was no restriction against establishing multiple solar power plants in a distribution region, with each up to 1MW installed capacity, as long as each solar power plant has its own consumer facility prior to the amendment. However, the Amendment Regulation restricted the allocation of installed capacity for real or legal persons generating solar or wind power for each transformer station as a maximum 1MW, regardless of the number of consumption facilities belonging to the same person. While calculating the 1MW limit, the Amendment Regulation considers both real or legal persons and their direct or indirect subsidiaries as the same person. The Amendment Regulation also prohibits share transfers in the companies establishing unlicensed generation facilities prior to the provisional acceptance of these generation facilities.

Removal of the bonus tariff on local manufacture from unlicensed generation facilities
The provision stating that the locally manufactured components in unlicensed generation facilities would also benefit from bonus tariffs was excluded from the New Local Manufacture Regulation. The Unlicensed Electricity Regulation still states that unlicensed facilities benefit from bonus tariffs. However, we understand from the draft amendment of the Unlicensed Electricity Regulation submitted to public review by EMRA recently that the Unlicensed Electricity Regulation is also likely to be amended to exclude bonus tariffs for unlicensed generation.

Amendment to the application of bonus tariff for local manufactured components in renewable energy facilities
As per the Old Local Manufacture Regulation, components, at least 55 per cent of which were manufactured by using locally manufactured parts, were considered as local components and benefited from the total bonus tariffs set forth for renewable generation facilities. The New Local Manufacture Regulation, however, provides that the bonus tariffs shall apply in proportion to the percentage of each locally manufactured part in the components.

Amendment on the responsibility of renewable energy generators from imbalances
Prior to the amendment in the RES Regulation, a licence holder participating in the RES Mechanism was not able to sell electricity freely (ie, it could not sell electricity through bilateral agreements), in the day-ahead market or in the intra-day market during the one-year term for which it was included in the RES Mechanism. According to this system, the RES Mechanism participants had to provide their generation forecasts but were not responsible for any imbalance. They were paid the price calculated as per the feed-in tariff for the total electricity that they generated during the relevant settlement period following the end of each settlement period.

As per the amendments in the RES Regulation, which entered into force on 1 May 2016, on the Documentation and Support of Renewable Energy Resources, the Suppliers will no longer be responsible for the whole imbalances of the RES Mechanism participants. The RES Mechanism participants will make notifications for their generation forecasts, will sell their electricity in the day-ahead or intra-day markets or through bilateral agreements in the same way as any other market participant not in the scope of the RES Mechanism, and be responsible for their imbalances. As per the new system, EPIAS will pay the relevant feed-in tariff to the licence holder for its electricity generation, but in return, will get back from the RES Mechanism participant 98 per cent of the price of the generated electricity amount calculated as per the market clearing price in the relevant periods. Considering that the special conditions for renewable energy generation facilities are making it harder to compile accurate forecasts compared with the other market participants, the new system provided a tolerance ratio, which is initially determined as 2 per cent for the imbalances in renewable energy generators (assuming that the RES Mechanism participants would sell their electricity from the market clearing price).

Amendment on the duties for solar panels
The Import Survey Communiqué No 2015/9 (Import Survey Communiqué) published in the Official Gazette dated 19 November 2015, No. 29537 sets forth a reference unit customs' value for solar cells or panels as US$35/net kg. Accordingly, if the unit customs' value of a solar cell/panel is equal to or above US$35/kg, the VAT shall be calculated based on the declared unit price (which cannot be less than US$35/kg). On the other hand, in order to import solar cells or panels, the unit customs' values of which are lower than US$35/kg, a survey certificate is required to be obtained from the Ministry of Economy, General Directorate of Import. If a solar cell/panel, the unit customs' value of which is below US$35/kg obtains a survey certificate, its VAT shall be calculated on its unit customs' value. On the other hand, if a solar cell/panel, the unit customs' value of which is declared to be below US$35/kg, cannot obtain the survey certificate, then the VAT shall be calculated based on US$35/kg as if its unit customs' value is US$35/kg. Accordingly, in the event that the solar cell/panel's unit customs' value is less than US$35/kg, it will be important to obtain the Survey Certificate in order not to be subject to a higher VAT.

In addition to the above amendment, the Communiqué regarding the Implementation of the Council of Ministers' decision (Communiqué No:2012/1) setting forth the principles and procedures regarding investment incentive certificates was amended with the Amendment Communiqué published in the Official Gazette dated 25 June 2016, No. 29753. The Amendment Communiqué excluded 'imported solar panels' from the items that can be evaluated within the scope of the investment incentive certificates. However, solar panels listed as part of the investment items in the investment incentive certificates that are already obtained prior to the entry into force of the Amendment Communiqué are not affected by the Amendment Communiqué and continue to benefit from the incentives provided under the investment incentive certificates. An investment incentive certificate grants the holder certain benefits, including mostly VAT and custom duty exemptions. Please note that as per the Communiqué the amendment in the incentives will only affect the application of VAT, as the solar panels are exempt from customs duty, regardless of whether the power plant project has an incentive certificate or not, and the VAT shall be calculated over US$35/kg unless a survey certificate is obtained for the solar panels or cells.

Purchase guarantee for electricity generation from coal
The Council of Minister's Decision No. 2016/9096, which was published in the Official Gazette dated 9 August 2016, No. 29796 (Decision), brought a new incentive for companies generating electricity from coal. The Decision sets forth that TETAS will buy electricity energy amounting to 6 billion kWh from generation licence holders generating electricity from coal in 2016. The Decision entitles TETAS to buy the electricity within the range of ±10 per cent of this amount. As per the Decision, TETAS will determine the amount to be supplied by each company to TETAS that applies to TETAS for supply of electricity as per the total energy amount to be supplied. In the event a company does not accept to supply such calculated amount, the amounts are re-evaluated for the other applying companies. As a result of the final evaluations, companies willing to supply electricity to TETAS sign an electricity sale agreement with TETAS. The price of the electricity for 2016 is determined as 185 Turkish liras/MWh (circa €55.5 MWh as per the Turkish Central Bank euro purchasing foreign exchange rate on 21 September 2016.) The new amounts to be supplied and the prices for each year are determined by the Council of Ministers every October of the preceding year.

to perform electricity export and/or import activities with Bulgaria or Greece, companies are required to have allocated capacities with regards to the electricity amount that they will import or export. The capacities may be obtained either in Greece or Bulgaria from the Greek or Bulgarian transmission system operator by the company which the electricity will be imported from or exported to; or in Turkey from TEIAS by the Turkish company which will import or export electricity. The capacity allocations in Turkey for cross-border trade between Turkey and Bulgaria or Greece are made by TEIAS via an auction process. Accordingly, the auctions for the allocation of the capacity by TEIAS are realised on the T-CAT Platform where bids are set and the annual auction rules for commercial exchanges are also published by TEIAS. Companies wishing to participate in these auctions and those wishing to trade in energy with Greek or Bulgarian companies awarded capacity allocation in Greece or Bulgaria must be registered on the T-CAT Platform and have to adhere to the auction rules.

Non-synchronous interconnections
If a cross-border trade is planned to be conducted through non-synchronous parallel interconnection lines, then the approval of EMRA shall

be obtained after submitting the documents and information required in the Import and Export Regulation. In order for EMRA to grant such an approval, the positive opinion of the Ministry must be obtained by EMRA. Before granting such an approval, EMRA also obtains opinions from TEIAS or distribution licensees on technical matters. Please note that although some are non-operational at the moment (eg, Syria interconnection line and Hopa-Batum interconnection line, which it was decided are to be used only in emergency situations), Turkey has interconnection lines with all of its neighbouring countries, but none of the lines with the neighbouring countries other than Bulgaria and Greece are currently synchronous parallel.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

A distribution company cannot engage in any activity other than distribution or be a direct shareholder of a legal entity engaged in any other market activity. In addition, distribution companies unbundled their distribution and retail activities into separate legal entities as of 1 January 2013 (see question 2).

The EML provides that the total amount of electricity that an entity can generate through generation companies under its control cannot exceed 20 per cent of the electricity generated in Turkey in the preceding year.

The EML further provides that the total amount of electricity to be sold by supply companies to end customers cannot exceed 20 per cent of the total electricity consumed in the market during the preceding year. In addition, the EML provides that the total electricity amount that supply companies can purchase from generation companies and importer companies (ie, supply companies with an importation authorisation) or import cannot exceed 20 per cent of the total electricity consumed in the market during the preceding year. TETAS has been excluded from the above market restrictions.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

As the regulatory authority of the market, EMRA may enforce restrictions on utilities dealing with affiliates.

In the case of non-compliance, the licensee is given a notice period of 30 days to remedy the non-compliance. If the non-compliance continues following the notice period, a fine of 604,113 Turkish liras (for 2016) (circa €182,260 as per the Turkish Central Bank euro purchasing foreign exchange rate on 21 September 2016) will be imposed. Where the licensee repeats the non-compliance, the fines imposed each time are doubled. It may also result in revocation of its licence.

In other cases, such as providing false or deceptive information while making a licence application, having activities falling out of the scope of the licence, acting against the shareholding participation restrictions and so forth, certain other fines of up to 1,500 million Turkish liras (circa €452,850 as per the Turkish Central Bank euro purchasing foreign exchange rate on 21 September 2016) and licence revocation sanctions are regulated under the EML.

BODEN
LAW

Değer Boden Akalın **dboden@boden-law.com**
Şeyma Olğun **solgun@boden-law.com**
Ayşegül Önol **aonol@boden-law.com**

Mesrutiyet Cad No. 98
D 10 Beyoğlu
Istanbul
Turkey

Tel: +90 212 251 1500
Fax: +90 212 251 1501
www.boden-law.com

United Kingdom

Kirsti Massie
White & Case LLP

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

Government policy

Following the EU Referendum held on 23 June 2016, a new prime minister was appointed and a new government formed. A number of government department changes have been made, including the consolidation of the Department for Energy and Climate Change (DECC) with the Department for Business and Innovation to create the Department for Business, Energy and Industrial Strategy (BEIS). The UK's decision to exit the EU has also introduced a degree of uncertainty with respect to electricity sector policy in the UK.

Prior to its consolidation, DECC's main objectives were ensuring the UK has a secure and resilient energy system, keeping energy bills low for consumers, securing action on climate change and reducing carbon emissions. The UK's ageing energy infrastructure, combined with government proposals to close all unabated coal-fired power stations by 2025 means that security of supply is an increasing concern.

The new Secretary of State for Business, Energy and Industrial Strategy has recently announced that BEIS will deliver a 'comprehensive industrial strategy ... delivering affordable, clean energy and tackling climate change'. It remains to be seen what the policy priorities of BEIS will be, and whether it will continue to push through the implementation of DECC's policies.

The Electricity Market Reform (EMR) introduced in the Energy Act 2013 has been at the centre of the government's implementation of UK energy policy. The EMR introduced two significant changes to the electricity wholesale market: (i) contracts for difference to encourage low-carbon generation and replace the Renewables Obligation; and (ii) the capacity market which seeks to ensure that there is sufficient capacity available in times of high demand. The EMR also introduced the emissions performance standard, which limits the amount of carbon dioxide fossil fuel power plants can emit each year and the carbon price floor (CPF). The CPF imposes a tax on fossil fuels used for generation and was implemented via amendment to the climate change levy.

Contracts for difference (CfD)

CfDs are private law, long-term, bilateral contracts between a renewable electricity generator and the Low Carbon Contracts Company (LCCC) (a government-owned limited liability company). Under a CfD, the generator sells electricity into the market. If the market reference price is below a pre-agreed 'strike price', the LCCC will pay the difference between the market reference price and the strike price. If the market reference price is above the strike price, the generator will be required to pay the difference to the LCCC. This mechanism effectively neutralises price volatility for the duration of the CfD. The cost of CfDs is funded through a levy on electricity suppliers which the LCCC collects and then returns any payments received from the generators to the electricity suppliers.

CfDs are allocated through a competitive auction process, with renewable technologies divided into groups, depending on their maturity. The CfD budget is allocated to each technology group and the renewable energy projects compete against other projects within the group for allocation of CfDs. The first CfD auction was held in February 2015.

The second CfD allocation round is scheduled to take place in late 2016 although no firm date has as yet been set. The government has confirmed that £290 million will be made available for the second auction. In the 2016 Budget, it was announced that £730 million will be allocated to CfDs in this parliamentary term, which runs until 2020.

In addition, in order to promote availability of power purchase arrangements for CfD generators, the government introduced an 'offtaker of last resort' scheme, which facilitates a 'backstop'/ last-resort power-purchase agreement between a CfD generator and a supplier through a competitive auction process.

CfDs, and indeed other state support measures to market operators, can constitute state aid, which would require approval from the European Commission under the EU state aid rules.

Capacity market

The capacity market is the main mechanism by which the government seeks to ensure uninterrupted electricity supply. It offers payments to generators for being available to generate power during times of system stress. The second capacity auction was held in December 2015 and approximately 46GW of capacity was awarded for delivery in 2019/20. Combined-cycle gas turbine plants were the main beneficiaries, with 47 per cent of the total capacity awarded to them. Interconnectors also participated in the capacity auction for the first time. The capacity market also offers payments to demand side response (DSR) providers for reducing demand at times of peak demand. The DSR providers participate in a separate, transitional capacity auction as DSR is seen as too immature a technology at present to compete in the main capacity market auction with other more established technologies.

A transitional capacity auction was held in January 2016 for delivery of capacity in 2016/17 and it procured over 0.8GW of capacity. The government plans to hold an early capacity market auction for delivery of capacity in 2017/18 to address emerging electricity supply risks. The early capacity auction will seek to procure 53.8GW of capacity for delivery in 2017/18. The government will target 52GW of capacity in the next T-4 capacity auction for delivery of capacity in 2020/21, scheduled to begin on 6 December 2016. There will also be a transitional capacity auction for delivery in 2017/18, which will commence on 22 March 2017 and target 0.3GW of capacity.

Legislative framework

The main electricity sector legislation in England, Wales and Scotland includes the Electricity Act 1989, Utilities Act 2000, Energy Act 2004, Energy Act 2008, Energy Act 2010, Energy Act 2011 and Energy Act 2013. The Energy Act 2016 received royal assent on 12 May 2016 and provides, inter alia, for the closure of the Renewables Obligation Scheme for onshore wind generators. The Climate Change Act 2008, Competition Act 1998, Enterprise and Regulatory Reform Act 2013 and Infrastructure Act 2015 are also applicable to the UK electricity sector.

Key legislation applicable to the electricity sector in Northern Ireland includes the Electricity (Northern Ireland) Order 1992, the Energy (Northern Ireland) Order 2003 and the Electricity (Single Wholesale Market) (Northern Ireland) Order 2007.

Various European Union (EU) legislation also applies to the UK energy sector either as a result of the principle of direct effect or from having been implemented into domestic legislation.

EU Referendum 2016

On 23 June 2016, the UK electorate voted to leave the EU. At the time of writing, there is significant uncertainty over the future relationship between the UK and the EU. It is unlikely that the vote to leave the EU will result in an immediate overhaul of UK electricity policy and legislation as the UK will continue to be an EU member state during the transition period. As a result, any EU regulations will continue to have direct effect and any domestic legislation implementing EU legislation will remain in force. However, the post-Brexit legislative framework is likely to be shaped by UK's relationship with the EU, and in particular whether the UK remains a member of the European Economic Area (EEA). If the UK remains a member of the EEA, it will still have access to the Internal Energy Market (IEM) and need to comply with EU legislation with EEA relevance. If the UK is outside the EEA, then it may not automatically benefit from the IEM and any amendments or revocations of domestic legislation will be driven by policies of the post-Brexit government, without reference to EU legislation. It is worth noting that the UK's departure from the EU will have implications on certain existing arrangements. For example, if the UK is outside the EEA, then the UK may no longer be able to participate in the EU Emissions Trading System and transitional arrangements will need to be put in place for any UK participants that have a surplus or shortage of emission allowances.

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

Under the Electricity Act 1989, a licence from the Gas and Electricity Markets Authority (GEMA) is required for the generation, transmission, distribution or supply of electricity. GEMA's day-to-day functions are delegated to the Office of Gas and Electricity Markets (Ofgem). Applicants for licences must submit a written application and pay the relevant fee to Ofgem, which grants licences to successful applicants and determines the conditions of the licences. Exemptions from the requirement to hold a licence may be available for small-scale generators, distributors and suppliers meeting specific conditions. Licences are also required for participation in the operation of an electricity interconnector or the provision of smart metering services. A supply licence holder, distribution licence holder or a transmission licence holder may supply, distribute or transmit electricity respectively to any area or in an area specified in their licence. There are certain restrictions on the types of licences an entity may hold – for example, one entity cannot hold a distribution and either a generation or supply licence and an interconnector licence holder cannot hold a generation, transmission, distribution or a supply licence.

A licence holder must comply with the conditions of its licence and various industry codes and standards, such as the Balancing and Settlement Code, the Grid Code and the Distribution Code.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The construction or extension of an onshore generation facility (save for wind generation facilities) located in England and Wales with a capacity of over 50MW requires consent from the Secretary of State for Business,Energy and Industrial Strategy under section 36 of the Electricity Act 1989 (section 36 consent). A section 36 consent application must be in writing and include a description, by reference to a map of the land on which the generating facility is to be constructed. In addition, the development of an onshore generation facility (save for wind generation facilities) will typically be classified as a 'nationally significant infrastructure project' (NSIP) under the Planning Act 2008. A development consent order (DCO) from the Secretary of State is required for development of an NSIP. Applications for a DCO are examined by the Planning Inspectorate, who will make recommendations to the Secretary of State. A DCO is a combination of various consents required and will include a section 36 consent and other ancillary consents, such as planning permission – therefore, to the extent that a DCO has been obtained, there is no requirement for the developer to obtain a separate section 36 consent. The policies by which decisions on energy infrastructure projects should be made are stated in the National Policy Statements. Construction of onshore generation facilities with a capacity of less than 50MW may require planning permission from the relevant local planning authority under the Town and Country Planning Act 1990.

The Energy Act 2016 together with the Infrastructure (Onshore Wind Generating Stations) Order 2016 has removed onshore wind farms of over 50MW in size from the NSIP regime and returned the decision-making powers to local planning authorities. In addition, the Onshore Wind Generating Stations (Exemption) (England and Wales) Order 2016 (S.I. 2016/21) as amended by the Onshore Wind Generating Stations (Exemption) (England and Wales)(Amendment) Order 2016 (S.I. 2016/450) also removed the requirement for a section 36 consent in relation to onshore wind generation facilities.

The construction or extension of an offshore generation facility with a capacity of over 100MW is also classified as an NSIP and consequently a DCO will be required. Consent from the Marine Management Organisation (MMO) is required for the construction of offshore generating stations with a capacity of more than 1MW but less than or equal to 100MW. A developer may also need to obtain a declaration removing or suspending public rights of navigation that pass through the generating station.

For generation facilities located in Scotland with a capacity of over 50MW, an application to the Scottish Ministers (the Energy Consents and Deployment Unit) is required, while consent must be obtained from the relevant local planning authority for generation facilities with a capacity of less than 50MW. A marine licence from Marine Scotland Licensing Operations Team is required for a developer to carry out certain activities in Scottish waters, including marine construction works associated with offshore generating stations.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

National Grid Electricity Transmission plc (National Grid) owns and operates the high-voltage electricity transmission network in England and Wales and operates the system in Scotland. In England and Wales, generators with a capacity of at least 100MW may be connected to the transmission system, with smaller plants being connected directly to the lower voltage distribution network. In Scotland smaller generators may be directly connected to the transmission grid.

Generators applying to connect directly to the transmission system must complete a connection application form, provide technical data and pay the relevant application fee. National Grid is required to make offers to generators requesting connection to the transmission system which if accepted, will result in the parties entering into a bilateral Connection Agreement and the generator will have to comply with various industry codes. Pursuant to the terms of its transmission licence, National Grid must maintain a number of codes to govern the relationship between the electricity industry participants and the transmission grid operator, including:

- the Connection and Use of System Code, which sets out the rights and obligations in relation to connection to and/or use of the transmission system;
- the Balancing and Settlement Code, which contains rules for the electricity balancing mechanism;
- the Grid Code, which contains rules related to planning, operation and use of the electricity transmission network; and
- the System Operator Transmission Owner Code, which sets out the roles and responsibilities of National Grid as the operator of the electricity transmission network and the owners of the transmission assets.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

The CfD mechanism aims to encourage and support investment in renewable electricity generation by providing a stable revenue stream for renewable generators. The Renewables Obligation (RO) Scheme, which previously was the main mechanism for incentivising renewable

generation is being phased out and will ultimately be replaced by CfDs. Under the Renewable Obligation Closure Order 2014, the RO Scheme will no longer be open generally to new generators from 31 March 2017 and will close completely in 2037. The government has introduced early closure of the RO Scheme for certain technologies, including new solar photovoltaic projects and new onshore wind projects. During the transition period between the commencement of the CfD scheme on 16 October 2014 and closure of the RO to new capacity on 31 March 2017, operators of new renewable generating capacity may choose to receive support under either the RO Scheme or CfD.

Other measures to encourage renewable generation include:

- feed-in tariffs, which provide financial incentives for small-scale, low-carbon electricity generators with a capacity of 5MW or less; and
- renewable heat incentive, which pays a tariff to participants to install eligible renewable technologies to heat buildings.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Pursuant to the Climate Change Act 2008 (CCA 2008), the UK government has a legally binding target of an 80 per cent reduction in greenhouse gas emissions by 2050 (as compared with a 1990 baseline). Under the CCA 2008, the government sets carbon budgets every five years which restricts the UK's greenhouse gas emissions with a view to achieving the 2050 target.

The UK is currently in the second carbon budget period which requires the UK to reduce emissions by 29 per cent as compared with the 1990 baseline by 2017. On 30 June 2016, the government set the fifth carbon budget of 1,725 million tonnes of carbon dioxide equivalent (equivalent to 56.9 per cent below 1990 levels) for 2028–2032 and the relevant draft legislation, the Carbon Budget Order 2016, has started along the parliamentary approval process. In addition, the UK is a signatory to the Paris Agreement 2015, which requires parties to work together to limit the increase in global average temperature to below 2°C above pre-industrial levels.

Ofgem recognises that electricity system flexibility will play a key role in meeting climate change commitments as well as providing a reliable and uninterrupted supply of electricity. In particular, Ofgem highlighted the following mechanisms for improving electricity system flexibility:

- DSR mechanisms, where consumers receive rewards for changing how and when they use electricity;
- energy storage eg, batteries; and
- distributed generation where low-carbon electricity is generated locally thereby reducing the costs of transporting power across the transmission system.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Much of the UK's regulatory framework was formulated prior to the development of electricity storage technology. As a result, there are certain features which may deter investment in and deployment of electricity storage in the UK, for example, electricity storage is treated as a form of electricity generation and as such, operation of electricity storage requires a generation licence (unless an exemption applies). Other licensed operators, such as distribution licence holders, are restricted from holding a generation licence and therefore from operating electricity storage. The requirement for electricity storage operators to hold a generation licence imposes an additional administrative burden on such operators as they are required to abide by all the regulations and codes that apply to electricity generators.

The current regulatory regime also treats electricity storage operators not only as electricity generators but also as consumers, resulting in increased costs for electricity storage operators as they are charged twice for using the electricity grid (once as a consumer when electricity is taken from the grid for storage and again as a generator when exporting electricity to the grid) and also face double-charging of various government levies to fund low-carbon incentive schemes where the levies are themselves added to electricity costs.

Various industry bodies have stressed that electricity storage should play a key role in combatting a number of the challenges faced by the UK electricity system. Ofgem recognises the uncertainty surrounding the regulatory treatment of electricity storage and has called for a review of the relevant regulation. The government has also committed to working together with Ofgem to deliver greater regulatory clarity for electricity storage in its response to the National Infrastructure Commission's Report of March 2016.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

There are no direct public subsidies for the nuclear industry but nuclear generation is potentially eligible for any general measures designed to encourage low-carbon generation, including CfDs. In addition, nuclear power may participate in capacity market auctions. Delays, however, continue to beset the development of Hinkley Point C nuclear power plant, a new nuclear power plant, which if and when built is expected to provide 7 per cent of UK electricity for almost 60 years.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

We note that the same consent regime applies for construction of transmission and distribution assets. The authorisations required to construct transmission or distribution networks depends on the type and location of the transmission or distribution assets.

Under section 37 of the Electricity Act 1989, consent from the Secretary of State (section 37 consent) is required to install an electric line above ground unless the electric line has a nominal voltage of less than 20kV and is used for supplying a single customer or if the electric line is within the premises either occupied or controlled by the person responsible for installation. An application to the Secretary of State must be in writing and include information such as a description, by reference to a map, the land across which the electricity line is to be constructed, the length and nominal voltage of the proposed line, whether all necessary wayleaves have been agreed and any additional information as directed by the Secretary of State. In addition, if the overhead electric line is to be constructed over, along or across a highway, consent from the relevant highway authority will be required.

In England and Wales, overhead electric lines with a nominal voltage of 132kV or more are considered to be a NSIP and a DCO from the Secretary of State is required, unless certain exemptions apply. A DCO will include the section 37 consent and other ancillary consents such as planning permission. Consents from the Environment Agency and local drainage boards and other ancillary consents may also be included in an application for a DCO with the agreement of the relevant authorities.

Under the Town and Country Planning (General Permitted Development) Order 1995, certain works on the transmission network (such as installation of underground electricity cables) may be classified as a 'permitted development' and no planning permission is necessary.

In addition to consents from authorities, if the transmission or distribution infrastructure crosses privately owned land, it may be necessary to enter into easement agreements with the relevant landowners.

The MMO, National Assembly Wales, Marine Scotland and the Department of the Environment for Northern Ireland are the relevant planning authorities for territorial waters. A marine licence may be required for laying power cables within UK territorial waters (up to 12 nautical miles). While laying power cables outside UK territorial waters does not require a marine licence, associated works may require one.

A transmission licence is required for the operation of a transmission network. National Grid owns and operates the transmission system in England and Wales and operates the system in Scotland. Northern Ireland Electricity Networks Limited owns the main transmission and distribution system in Northern Ireland.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

Generators must have a capacity of at least 100MW to be directly connected to the transmission system in England and Wales. Smaller generators may be eligible to connect to the transmission system in Scotland. To obtain connection to the transmission grid, a generator must complete a connection application form, provide the relevant technical data, pay an application fee and sign a bilateral Connection Agreement and adhere to the various industry codes including the Connection and Use of System Code, which sets out the contractual framework for connection to and use of transmission services.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

DECC and Ofgem created a Smart Grid Forum to identify the future challenges for electricity networks and to encourage the development of smart grids to facilitate low-carbon generation.

The UK government has also established a competitive offshore transmission regulatory regime administered by Ofgem, under which licences to operate offshore transmission infrastructure are granted following a competitive tender process.

Ofgem plans to build on the competitive tender for offshore transmission assets and introduce a competitive tender process for new, high value onshore transmission assets to further reduce costs and encourage innovation. It is anticipated that the first onshore transmission assets tender will be held in 2017.

Owners of transmission assets have a duty to develop and maintain an efficient transmission network and there are limits on the maximum revenue that a transmission system operator can recover. To ensure that the limits on revenue do not hinder investment in new projects, Ofgem has various schemes in place – for example, the Strategic Wider Works (SWW) programme, which allows owners of transmission assets to bring forward additional large investment projects. Ofgem reviews any proposals for SWW and determines whether there is a need for reinforcement works and if the plans are likely to deliver long-term value for money for customers. In addition, Network Innovation Allowance provides funding for the annual Electricity Network Innovation Competition, which is administered by Ofgem and encourages electricity network companies to compete for funding for development of innovative grid improvement projects.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

There are three types of charges payable to National Grid by users of transmission systems:

- connection charges (charges to cover the costs of providing and maintaining connection assets, which are required to connect an individual user to the transmission system);
- transmission network use of system charges (charges reflecting the cost of building, operating and maintaining shared electricity transmission assets); and
- balancing services use of system charges (relates to the costs of day-to-day operation of the transmission system, including costs related to balancing of the electricity system and constraining generation).

Pursuant to the conditions of its licence, National Grid is required to prepare the charging methodologies, which themselves must be approved by Ofgem. The charging methodologies are set out in the Connection and Use of System Code. The charges are calculated according to the relevant methodology and are updated regularly and publicised in a charging statement. National Grid is responsible under its transmission licence to ensure that the charging methodologies are up to date. The charging methodologies are designed to enhance stability and predictability of the transmission charges, to encourage competition in the electricity sector and to reflect costs of operating the grid.

Ofgem is responsible for setting price controls for transmission companies and uses a performance-based framework – the current price control, RIIO-T1 (revenue = incentives + innovation + outputs), is in place until 2021 and is designed to encourage efficient investment and innovation to reduce network costs.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Ofgem can use its powers to regulate the activities of transmission grid operators and set price controls. A transmission licence holder has a statutory obligation to develop and maintain an efficient, coordinated and economical system of electrical transmission and to facilitate competition in the supply and generation of electricity. In addition, both offshore and onshore transmission licensees must abide by the National Electricity Transmission System Security and Quality of Supply Standards (NETS SQSS), which is a set of standards to be used when planning and operating the transmission system. National Grid and Ofgem have the power to grant derogations from the obligation to comply with certain requirements under the NETS SQSS.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Authorisations required to construct distribution networks are discussed in question 9.

A distribution licence is required for the operation and maintenance of a distribution network.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Section 16 of the Electricity Act 1989 provides that an electricity distributor must make a connection between the distribution grid and any premises (including providing the electric lines as necessary to enable the connection), when required by the owner or occupier of such premises or an authorised supplier acting with consent of the owner or occupier. Transmission system operators and distribution system operators must, in accordance with their respective licence conditions, provide equal access to third parties.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Distribution licence holders are under a statutory duty to develop and maintain an efficient, coordinated and economical system of electricity distribution and to facilitate competition in the supply and generation of electricity.

Electricity distributors can participate in the annual Electricity Network Innovation Competition administered by Ofgem, where electricity network companies compete for funding for development projects that improve the electricity network. Distribution network operators (DNOs) also operate under a price control framework.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

Ofgem operates a price control regime for distribution network operators. The current price control framework for DNOs, RIIO-ED1, is based on the RIIO model and limits the revenues DNOs can collect until 2023.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

An electricity supplier must hold a supply licence from GEMA prior to the sale of power to customers. A supply licensee must, among other things, adhere to various industry codes (such as the Balancing and Settlement Code and the Smart Energy Code). Suppliers must also enter into a Master Registration Agreement with electricity distribution companies which governs the process for the transfer of customers between suppliers.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Electricity prices are set by electricity suppliers although there are provisions in the Energy Act 2013 that allow the Secretary of State to modify conditions of supply licences to ensure consumers obtain the cheapest tariffs from their electricity supplier – for example, the Secretary of State may require the supply licensee to adopt one or more standard domestic tariffs, or restrict the number of domestic tariffs (or domestic tariffs of a particular category) that a supply licensee may adopt.

On 26 June 2014, GEMA referred the energy market in Great Britain to the Competition and Markets Authority (CMA) following a review of competition in the retail energy market. The CMA's investigations concluded on 24 June 2016. The CMA found that limitations on suppliers' tariffs (such as a ban on complex tariff structures and restrictions on discounts suppliers can offer) are hindering competition and the CMA recommended that Ofgem removes the relevant conditions in the electricity supply licences. The CMA called for electricity suppliers to provide details of domestic customers who have been on a default tariff for over three years to create an Ofgem-controlled database that can be disclosed to rival suppliers, who will be able to contact such customers to offer cheaper rates tailored to their individual energy usage. Domestic customers would have the option to opt out at any time. Ofgem will oversee access to information, including compliance with data protection legislation, to ensure that consumers benefit from better tariffs and increased competition.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Rates for sale of wholesale power are determined by market forces.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

The Energy Companies Obligation (ECO) is a government scheme administered by Ofgem E-Serve and is aimed at helping to reduce carbon emissions and fight fuel poverty. Very broadly, the ECO requires supply licensees with over 250,000 domestic customers to deliver energy efficiency measures to domestic premises according to their relative share of the gas and electricity market. Such measures will include, for example, installing home insulation, promoting connections to district heating systems in areas of low income and making it easier for low-income households to heat their homes. It is expected that the ECO will run until 31 March 2017, when it will be replaced with a new five-year scheme under which suppliers must reduce carbon emissions and fuel poverty.

In addition, if an electricity supplier fails and Ofgem revokes the relevant supply licence, Ofgem may direct any other electricity supplier to take over the failed supplier's customers as a supplier of last resort.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

DECC was formed in 2008 to focus on setting policies and implementing legislation with respect to energy and climate change. In July 2016, DECC's functions were transferred to the newly created BEIS with the Secretary of State for Business, Energy and Industrial Strategy overseeing BEIS' functions.

The Department for Economy is responsible for energy policy in Northern Ireland in relation to certain devolved matters concerning energy.

GEMA is an independent body with primary responsibility for regulation of the energy sector – its members are appointed by the Secretary of State. It can determine regulatory policy within the boundaries set out in various enabling legislation. The Energy Act 2013 includes powers for the Secretary of State to prepare a strategy and policy statement, setting out matters such as strategic priorities of the government when determining energy policy and the roles and responsibilities of persons who are involved in the implementation of the policy. GEMA is required to consider these strategic priorities when carrying out its regulatory functions.

GEMA's day-to-day functions are delegated to Ofgem and GEMA oversees Ofgem's work and provides strategic direction. The Utility Regulator for Northern Ireland is Ofgem's counterpart in Northern Ireland.

23 Scope of authority

What is the scope of each regulator's authority?

The Electricity Act 1989 sets out the principal objective and general duties of GEMA. GEMA's powers are largely set out in statute, such as the Utilities Act 2000, Competition Act 1998, Enterprise Act 2002 and Energy Acts 2004, 2008, 2010 and 2011. It also has powers under directly effective EU legislation and it is required to carry out its functions in a manner compliant with any binding decisions of the Agency for the Cooperation of Energy Regulators and of the European Commission.

Subject to the Enforcement Guidelines, GEMA can conduct investigations into breach of licence conditions and/or legislation. GEMA also has the power to require disclosure of information and impose fines and enforcement orders.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

GEMA was established under section 1 of the Utilities Act 2000 to regulate the UK's gas and electricity markets. GEMA delegates its functions to Ofgem, which operates independently from the government and participants in the electricity sector.

The CMA was established under the Enterprise and Regulatory Reform Act 2013 (ERRA 2013). It is an independent non-ministerial department which promotes competition for the benefit of consumers within and outside the UK.

The Office for Nuclear Regulation is an independent statutory body, which was created by the Energy Act 2013. It is responsible for ensuring nuclear safety in the UK.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

It is possible to challenge or appeal GEMA's decisions. The route for challenge will depend on the nature of the decision, but some of the main routes are as follows:

Section 11C of the Electricity Act 1989 allows a licence holder to appeal to the CMA against GEMA's decision to modify licence conditions – the licence holder will need to obtain permission from the CMA in order to bring an appeal. Depending on the nature of the decision

that is the subject of the appeal, the CMA may, among other things, quash the decision or require GEMA to reconsider the matter in accordance with any directions from the CMA.

A licence holder may challenge a provisional or final decision of GEMA on the grounds that such decision was not within the powers conferred on GEMA under the Electricity Act 1989 or that relevant procedural requirements have not been followed. Such a challenge is brought by making an application to the High Court (or the Court of Session in Scotland) under section 27(1) of the Electricity Act 1989 within 42 days of the date of service of the decision.

A licence holder aggrieved by GEMA's decision to impose a penalty (including the amount of the penalty or the deadline for payment) may make an application to the High Court (or the Court of Session in Scotland) under section 27E of the Electricity Act 1989 – such appeal must be made within 42 days of the date of service of the notice of penalty.

Decisions made by local authorities or regulatory bodies may be challenged by way of judicial review. The court will review the lawfulness of the decision, rather than whether the decision is correct. The grounds for challenge are, broadly speaking, illegality, irrationality, procedural unfairness and legitimate expectation. The procedure is primarily governed by the Civil Procedure Rules and a claim may only be brought with the permission of the court.

If a party wishes to appeal a decision made by the CMA, it may appeal to the Competition Appeal Tribunal.

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

European Commission

The European Commission (Commission) has the authority to review mergers in the electricity sector with a 'community dimension' under Regulation 139/2004 on the control of concentrations between undertakings (OJ 2004 L24/1) (Merger Regulation). A concentration has a 'community dimension' if it meets one of the two alternative sets of thresholds related to turnover of the undertakings set out in the Merger Regulation. The Commission also issues various notices and guidelines to aid interpretation of the Merger Regulation. If a concentration has a community dimension then the Commission has exclusive jurisdiction to investigate the proposed transaction and the domestic regulatory bodies, such as the CMA, will not be able to apply national rules to review the proposed transaction. Member states may, however, request a referral of such a concentration under article 9 of the Merger Regulation, where the concentration affects competition in a distinct market within that member state's territory. The analysis by the national competition authority will in that case be conducted under national competition law.

CMA

The CMA is responsible for the initial investigation of merger cases in the UK that do not have a community dimension and, if deemed necessary, to agree voluntary measures with the parties of a merger transaction to mitigate any anticompetitive effects. The Secretary of State may also give notice of a proposed merger to the CMA if the transaction raises certain public interest issues (such as those concerning national security).

Ofgem

Under section 54 of the Competition Act 1998, regulators such as Ofgem have concurrent powers in relation to certain anticompetitive practices. The ERRA 2013 also introduced certain measures to increase cooperation between sectoral regulators and the CMA. The United Kingdom Competition Network is a group composed of UK regulators (including Ofgem and the Northern Ireland Authority for Utility Regulation) which seeks to strengthen collaboration between the regulators to encourage competition and prevent anticompetitive behaviour.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

It is worth noting that the current legislation relating to merger control, as described below, allows companies to benefit from a 'one-stop shop' regime, which means that a transaction subject to the Merger Regulation will generally not be subject to UK merger control rules. Following the results of the EU Referendum, if the UK remains a member of the EEA post-Brexit, then it will be subject to the EEA provisions on competition, which generally reflect the equivalent EU provisions. The Commission has exclusive jurisdiction to deal with all mergers with a community dimension in the EEA. If the UK is no longer part of the EU or the EEA, then many of the domestic competition law provisions closely mirror those of the EU and such provisions will remain in force until amended or revoked by the UK parliament. Whether UK competition law will continue to reflect developments in EU competition law post-Brexit is difficult to predict. It is also likely that upon the UK's exit of the EU/EEA, companies may no longer be able to take advantage of the 'one-stop shop' regime and any proposed merger may have to be reviewed in parallel by the CMA and the Commission.

European Commission

Under the Merger Regulation, concentrations with a community dimension must be notified to the Commission prior to their implementation. The Commission must complete its initial assessment (Phase I Investigation) within 25 working days from the working day following the date of receipt of the notification (or receipt of complete information if later). This period may increase to 35 working days if the Commission receives a request from a member state (either on its own initiative or upon invitation from the Commission) for the proposed merger to be referred back to the national competition authority as the proposed transaction threatens competition in a distinct market in that member state, or if the undertakings concerned offer commitments to ensure the merger will not impede competition. From the Phase I Investigation, the Commission may:

- find that the proposed merger does not fall within the ambit of the Merger Regulation and thus it has no jurisdiction (in which case the parties should then consider if notification to the national authority, the CMA, is required);
- clear the proposed merger as it does not raise serious doubts as to its compatibility with the common market (note that the Commission may clear the merger subject to certain conditions); or
- initiate proceedings and conduct an in-depth investigation (Phase II Investigation) if it considers that the proposed merger raises serious doubts as to its compatibility with the internal market.

If the Commission begins a Phase II Investigation, it must review the proposed merger in the context of the objectives of the Merger Regulation to determine whether it is compatible with the common market. The Commission must make a decision within 90 working days of the date on which such investigations are initiated. The period is automatically increased to 105 working days if the undertakings concerned offer commitments to ensure that the merger will not obstruct competition, unless the parties offer such commitments within 55 working days from the start of Phase II Investigation. Upon the conclusion of Phase II Investigation, the Commission may clear the concentration (often subject to certain conditions) or declare the concentration incompatible with the internal market and prohibit the transaction. If the proposed merger has already been implemented, the Commission may impose a fine for the so called 'gun-jumping' and require the parties to undo the transaction or take any other appropriate measures.

CMA

Notification of a merger to the CMA remains voluntary, but the CMA can review a transaction on its own initiative if there is a 'relevant merger situation'.

The parties may apply to the CMA for informal advice on likely competition issues of the proposed merger as part of the pre-notification process. Once the merger is announced, the parties may submit a notice using a prescribed form of 'Merger Notice'. The CMA has 40

Update and trends

The UK's vote to leave the EU has resulted in significant uncertainty for the foreseeable future. It is currently unclear what form the future UK/EU relationship will take and in particular whether the UK will continue to have access to the IEM.

The UK must serve a formal notice under article 50 of the Treaty of Lisbon (the article 50 Notice) to commence the exit process. Once the article 50 Notice has been served there will be a two-year period during which the UK and EU will seek to agree the terms of the UK's exit. As a result it is unlikely that substantive changes to UK electricity legislation will arise in the near term.

The UK will remain a member of the EU during this two-year transition period – EU regulations will continue to have direct effect and domestic legislation transposing EU legislation will continue to be in force. The UK will also remain a party to key international climate change conventions, such as the Paris Agreement and the Kyoto Protocol, and continue to be bound by domestic climate change targets such as those set out in the Climate Change Act 2008.

However, following the UK's departure from the EU there may be changes in UK energy policy which may lead to existing UK electricity legislation being amended or revoked. Any such changes will depend not only on the policy direction of a post-Brexit government but also whether the UK remains part of the EEA, which will enable the UK to continue in the IEM, but will require the country to ensure its domestic legislation is harmonised with EU regulations.

As of today, the full and long-term impact on UK electricity regulation of the UK's vote to leave the EU remains to be seen.

working days to conduct Phase I merger investigations. The 40-working-day period may be extended if, for example, any of the parties fail to comply with the CMA's request for information or if the CMA has referred the proposed merger to the Commission under article 22(1) of the Merger Regulation.

The CMA will conduct a more in-depth Phase II merger investigation if it believes that there is a relevant merger situation that has resulted in or may be expected to result in a substantial lessening of competition within any UK market. The parties may offer undertakings to remedy, mitigate or prevent the anticompetitive effects of the proposed merger – such undertakings must be offered to the CMA within five working days after CMA's Phase I decision. The CMA has 10 working days from the day after the CMA's Phase I decision to determine whether such undertakings are acceptable in principle. If they are, the CMA must decide whether to accept the proposed undertakings within 50 working days (which may be extended by a maximum of 40 working days for special reasons) from the date of notification of its Phase I decision.

A Phase II merger investigation by the CMA will typically take up to 24 weeks, which may be extended by up to eight weeks in certain cases. Once a merger has been referred for Phase II merger investigation, the CMA has the power to make interim orders (for example, to stop the parties from starting or continuing with the merger until the CMA has concluded its investigation) or to accept interim undertakings from the parties. If the CMA concludes that the proposed merger would lead to a substantial lessening of competition, it may impose remedies which must be implemented within 12 weeks. The deadline for implementation of remedies may be extended once by up to six weeks if there are special reasons. Under section 92 of the Enterprise Act 2002, the CMA must keep under review any undertakings and orders. A fee is payable if the proposed merger is referred for a Phase II merger investigation (certain exceptions may be available for small or medium-sized entities) – the amount will depend on the value of the UK turnover of the target business being acquired but it ranges from £40,000 to £160,000.

The CMA will also liaise with sectoral regulators such as Ofgem as a merger in the electricity industry may require modification of the operator's licence or give rise to sector-specific issues.

It should be noted that given the complexity of mergers in the energy sector, pre-notification to the Commission or the CMA or both is advisable and such pre-notification can add to the timetable generally.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

As further detailed in question 29, Chapters I and II of the Competition Act 1998 (CA 1998) set out the substantive standards which are applied to determine whether the conduct of an undertaking is anticompetitive. The CMA has the power to investigate and prosecute anticompetitive behaviour set out in CA 1998.

The Commission can enforce articles 101 and 102 of the Treaty on the Functioning of the European Union (TFEU). The CMA may also apply articles 101 and 102 directly. Under the CA 1998, the courts and the CMA are required to ensure that competition issues arising within the UK are dealt with in a manner consistent with the treatment of corresponding competition issues arising within the European Union. Licences issued by GEMA also facilitate the prevention and prosecution of anticompetitive behaviour. Under the Energy Act 2010, there are provisions for the Secretary of State to modify licence conditions to limit or eliminate circumstances in which a licence holder may gain excessive benefit from electricity generation.

GEMA has concurrent powers with the CMA to enforce competition regulations. ERRA 2013 introduced various measures to encourage sectoral regulators such as GEMA to use its competition enforcement powers. For example, GEMA is required to consider whether the exercise of its competition law enforcement powers is more appropriate prior to using its sectoral powers.

In addition, any state support measures to market operators could potentially constitute state aid, which in principle is prohibited under article 107 TFEU, unless approved by the European Commission under the EU state aid rules.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

The prohibitions on anticompetitive behaviour are contained mainly in CA 1998 and the relevant provisions closely mirror articles 101 and 102 of the TFEU. Section 2 of CA 1998 prohibits agreements between undertakings which are intended to or which have the effect of preventing, restricting or distorting competition within the UK and may affect trade within the UK (Chapter I Prohibition). Certain agreements may be exempt if they yield benefits such as improving production or distribution or promoting technical or economic progress, and a share of the benefit is allocated to the consumers, provided that the agreement does not give rise to the possibility of eliminating competition in respect of a substantial part of a product or a service market. Under section 10 of CA 1998, if an agreement is exempt from restrictions of article 101 of the TFEU then it will also be exempt from the Chapter I Prohibition. Article 101 of the TFEU contains the same restrictions as a Chapter I Prohibition, except it applies to agreements that have an EU-wide impact. There are also similar exemptions to article 101 of the TFEU and there are block exemptions for certain types of agreements which are automatically exempt from article 101.

Section 18 of CA 1998 prohibits any conduct which amounts to abuse of a dominant position in a market if it may affect trade within the UK (Chapter II Prohibition). Article 102 of the TFEU prohibits abuse of dominant position as applied to trade between EU member states. In order to assess whether an undertaking enjoys a dominant position, it will be necessary to identify the product and geographical market and assess the relevant undertaking's position within that market. Very broadly, there is a presumption of dominant position if an undertaking has over 50 per cent of the market share, but depending on the circumstances an undertaking with a smaller market share may be found to be dominant.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

The CMA, GEMA or the Commission may take certain actions if an undertaking has intentionally or negligently breached competition rules.

If an undertaking has breached article 101 of the TFEU or the Chapter I Prohibition, it may be fined up to 10 per cent of its worldwide group turnover and be ordered to cease the operation of an anticompetitive agreement.

If an undertaking has breached article 102 of the TFEU or the Chapter II Prohibition, it may be fined up to 10 per cent of its worldwide group turnover and be ordered to cease or modify its conduct. The Commission may impose structural or behavioural remedies which are proportionate to the anticompetitive behaviour.

The CMA can also apply to court to have a director of a company that is in breach of UK or EU competition law disqualified for up to 15 years. Individuals involved in cartels may also face criminal liability under the Enterprise Act 2002.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

There are no specific restrictions, but the Electricity and Gas (Internal Markets) Regulations 2011 requires Ofgem and the Commission to consider whether a foreign entity's acquisition of interest in the electricity sector poses a threat to security of supply.

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

A licence from GEMA is required to participate in the operation of an electricity interconnector. The consents required for construction will differ depending on whether the works required are offshore and/or onshore.

For offshore works, a licence from the MMO is required under Marine and Coastal Access Act 2009 for laying cables within UK territorial waters. In addition, consents from relevant harbour authorities may be required for works within a harbour and wider area. It may be beneficial to enter into cable-crossing agreements with holders of existing active cables and other submarine infrastructure. For onshore development, a planning permission under the Town and Country Planning Act 1990 will need to be obtained.

The Trans-European Energy Networks Regulation (EU 347/2013) sets out guidelines for streamlining the permission process for projects of common interest, which are major infrastructure projects that contribute market integration of at least two EU countries, foster competition and energy security and contribute to climate change and energy goals.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

An interconnector licensee may not hold a generation licence, transmission licence, distribution licence or a supply licence. Interconnectors must provide non-discriminatory access in accordance with EU legislation and its licence conditions. It may be able to obtain an exemption from certain provisions of EU legislation – Ofgem will consider each request for exemption on a case-by-case basis and may attach certain conditions to the interconnector licence.

Under the 'cap and floor' regime, an interconnector developer's revenue is capped and any excess revenue is returned to the consumers. If an interconnector's revenue falls below a minimum threshold then the consumers (via transmission charges) will top up the revenues to meet such threshold.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

The licences contain various conditions requiring the separation of function at a financial, operational and management level. The nature and extent of such separation requirements varies depending on the licensee entity.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

GEMA can enforce any breaches of licence conditions. Under the Electricity Act 1989, GEMA can impose financial penalties up to 10 per cent of the licence holder's annual turnover.

WHITE & CASE

Kirsti Massie **kmassie@whitecase.com**

5 Old Broad Street
London
EC2N 1DW
United Kingdom

Tel: +44 207 532 2314
Fax: +44 207 532 1001
www.whitecase.com

United States

Daniel A Hagan, Jane E Rueger and John N Forbush
White & Case LLP

1 Policy and law

What is the government policy and legislative framework for the electricity sector?

No single government body sets government policy for the electricity sector. The federal government, which regulates wholesale markets, follows a generally pro-competitive policy. The competition reforms that transformed the US electricity sector represent the latest chapter in three decades of restructuring, deregulation, and regulatory reforms that affected utility sectors of the economy historically subject to price regulation. Retail sales are regulated by the states. Several states have adopted choice programmes intended to introduce competition among retail suppliers of electricity. While some states have delayed or suspended retail choice plans amid concerns that deregulation may not benefit end-use consumers, retail choice is thriving in other states, such as New York.

US Congress

The Energy Policy Act of 2005 (EPAct 2005) represents the most significant change in US energy policy since the Federal Power Act of 1935 (FPA) and the Natural Gas Act of 1938 (NGA). EPAct 2005 granted the Federal Energy Regulatory Commission (FERC) the authority to issue rules to (i) prevent market manipulation in wholesale power and gas markets, and in electric transmission and gas transportation services; (ii) assess enhanced civil penalties for violations of the FPA and other energy statutes; (iii) oversee mandatory reliability standards governing the nation's electricity grid; and (iv) approve the siting of transmission facilities, traditionally a matter of state or local jurisdiction, under certain limited circumstances.

Federal administrative agencies

Federal administrative agencies are tasked with implementing energy legislation passed by the US Congress. The mission of the US Department of Energy (DOE) is to 'ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions' (www.energy.gov/mission). FERC, an independent regulatory agency within the DOE, is the principal economic and policy regulator at the federal level for the electric power industry. FERC is charged with implementing, administering and enforcing most of the provisions of EPAct 2005, FPA, NGA and other statutes regulating the electric utility industry.

States

Beginning in the 1990s, a number of states undertook measures to require or encourage vertically integrated utilities to disaggregate into separate generation, transmission or distribution entities. Also, participation in independent system operators (ISOs) or regional transmission organisations (RTOs) was encouraged at the federal level and in some states. The American Public Power Association's (APPA) most current data indicates that 15 states and the District of Columbia have active retail choice programmes in the electric sector (APPA, 2014 Retail Electric Rates in Deregulated and Regulated States, www.publicpower.org/files/PDFs/2015RetailRatesReportFinal.pdf).

2 Organisation of the market

What is the organisational structure for the generation, transmission, distribution and sale of power?

According to the APPA, the US electric industry is composed of 3,306 electricity providers, including 2,013 publicly owned utilities, 877 cooperatives, 189 investor-owned utilities, 218 power marketers, and nine federal utilities (APPA, 2014–2015 Annual Directory & Statistical Report, www.publicpower.org/files/PDFs/USElectricUtilityIndustryStatistics.pdf). Together, those utilities combine to serve almost 148 million customers, with investor-owned utilities serving the largest share at approximately 68 per cent of the total customers.

The private sector includes traditional utilities that are vertically integrated, generation-owning companies and power marketers, and transmission or distribution 'wires-only' companies. These companies may be privately owned or publicly traded. The public sector includes municipally owned utilities, public power districts, state agencies, irrigation districts and other government organisations, and at the federal level, the Tennessee Valley Authority (TVA) and federal power marketing administrations. Rural electric cooperatives, formed by residents, operate in 47 states and comprise about 11 per cent of total US kilowatt-hour sales and revenue (www.nreca.coop/about-electric-cooperatives/co-op-facts-figures/).

Generation

According to the Energy Information Administration's (EIA, part of the DOE) most recent statistics, net generation of electric power decreased slightly by 0.14 per cent in 2015, to 4,087,381kWh, as compared to 4,092,935kWh in 2014, and as of June 2016, net generation of electric power has decreased approximately 2.53 per cent from June 2015 levels (www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_1_1).

The primary energy sources for generating electric power in the US are fossil fuels such as coal and natural gas, with limited use of oil. Fossil fuels accounted for slightly less than 67 per cent of energy consumption in the US in 2015, and 62.71 per cent in the first half of 2016. The predominant fuel source remains coal, accounting for 33.18 per cent of total net generation in 2015, a decrease from the 2014 level of 38.7 per cent of total net generation. Domestic production of crude oil and natural gas has been facilitated by ongoing improvements in extraction technologies and resultant low prices. Crude oil production has increased sharply since 2008. In 2015, the US produced 9.4 million barrels per day, a number that approaching the record high (set in 1970) of 9.6 million barrels per day. The EIA, however, predicts that domestic crude oil production will soon level off and eventually decline after 2020. Development of natural gas resources has also steadily grown, with a predicted 32 per cent increase in production between 2012 and 2040 (/www.eia.gov/beta/aeo/#/?id=13-AEO2015). Driving this growth is the increased use of natural gas as a fuel source for generation, comprising 32.66 per cent of total net generation in 2015. Generation from renewable energy sources including hydroelectric continues to rise, accounting for over 14 per cent of total US net generation in 2014. In fact, through the first six months of 2016, generation from renewable sources has exceeded levels from previous years in every month thus far (www.eia.gov/todayinenergy/detail.cfm?id=27672).

The EIA has predicted that total US electricity consumption will increase at an average annual rate of 0.9 per cent in the next two decades, but that energy intensity (measured as energy use per person and per dollar of GDP) will actually decline (www.eia.gov/forecasts/aeo/sector_energydemand_all.cfm#declines). This forecast is based on the assumption that the US population will increase by 0.9 per cent per year and the GDP will increase at an average annual rate of 2.5 per cent per year. The projected decline in energy use per capita reflects anticipated gains in energy efficiency of appliances and vehicles, an economic shift away from energy-intensive manufacturing, and the retirement of less efficient generators.

Power sales

Power marketers do not generate, transmit or distribute electricity, but are classified as public utilities under the FPA because they sell electricity at wholesale. In addition to the numerous privately owned power marketers, there are four federally owned power marketing administrations that market and sell the power produced at federal hydroelectric and nuclear plants. The APPA reported in its 2015–2016 Annual Directory and Statistical Report that sales of energy to ultimate consumers by power marketers equal 20.2 per cent of total sales (www.publicpower.org/files/PDFs/USElectricUtilityIndustryStatistics.pdf).

Transmission

The US bulk power transmission system is composed of facilities that are privately, publicly, federally or cooperatively owned that form all or parts of three electric networks (power grids): the Eastern Interconnection that stretches from central Canada to the Atlantic coast (excluding Quebec), south to Florida and west to the Rockies (excluding much of Texas); the Western Interconnection that stretches from western Canada south to Mexico and east over the Rockies to the Great Plains; and the Electric Reliability Council of Texas (ERCOT) that serves a large portion of Texas.

Historically, transmission lines owned by private-sector companies were part of a vertically integrated utility. In 1996, FERC issued Order No. 888, requiring each public utility subject to FERC's jurisdiction to file an open-access transmission tariff (OATT) declaring the terms and conditions for using its transmission system; and functionally unbundle its services.

FERC has encouraged the development of ISOs and RTOs as independent transmission providers within a region. These entities are formed by utilities that transfer operational control – but not ownership – of their transmission assets to the ISO or RTO, which is then responsible for operating the regional transmission grid and administering wholesale markets. Today, two-thirds of electricity consumers in the US are served within markets administered by seven ISOs or RTOs: the PJM Interconnection, the Midcontinent ISO, the Southwest Power Pool, the New York ISO, ISO New England, ERCOT and the California ISO. In addition, on 1 November 2014, the California ISO and PacifiCorp launched the Energy Imbalance Market (EIM), which is a real-time energy balancing authority with the overall goal of dispatching least-cost energy on a real-time basis across the EIM. The California ISO EIM continues to expand, as Las Vegas-based NV Energy recently began participating in October 2015 and utilities in Washington and Arizona are expected to begin participating by October 2016. It was also recently announced that Idaho Power, which serves customers in southern Idaho and a portion of eastern Oregon, intends to begin participating in the EIM in 2018.

One of the responsibilities of ISOs and RTOs, as well as other transmission providers, is to maintain the operation of the grid. Pursuant to EPAct 2005, FERC certified the North American Electric Reliability Corporation (NERC) as the nation's Electric Reliability Organisation (ERO) to develop and enforce mandatory reliability requirements to address medium- and long-term reliability concerns, subject to FERC oversight and enforcement. Today, enforcement of electric reliability standards, including the protection of critical energy infrastructure, is a major focus of the ERO and of FERC, which may impose penalties of up to US$1 million a day on transmission or generation owners and operators and certain other regulated entities for a violation of mandatory reliability standards. See question 12 for further discussion on reliability.

Regulation of electricity utilities – power generation

3 Authorisation to construct and operate generation facilities

What authorisations are required to construct and operate generation facilities?

The siting and construction of electric generation, transmission and distribution facilities has historically been a state and local process, although EPAct 2005 altered this traditional arrangement by vesting limited transmission siting authority with FERC in certain cases. In making siting decisions, state public utility commissions (PUCs) consider environmental, public health and economic factors. The PUCs exercise their authority in conjunction with state environmental agencies or local zoning boards. A few states have a siting board or commission that provides a single forum where an electric utility or independent developer can obtain all necessary authorisations to construct electric facilities. Other states have not consolidated the siting process, and electric utilities or independent developers in those states are required to obtain the necessary permits separately from each of the relevant state and local agencies. State and local permits required for the construction of electric generation facilities include air permits and water use or discharge permits from the state environmental commission, and zoning and building permits from local commissions.

Regulated utilities are required to obtain a certificate of public convenience and necessity from the relevant PUC for the construction of generation, transmission and distribution facilities that will be subject to cost-base rate regulation. Except in limited circumstances where the relevant state commission refuses to act on an application for a year, or does not have jurisdiction to act (as in the case of certain federally designated National Transmission Corridors), no federal certificate of public convenience or necessity is available from FERC for the siting and construction of electric generation, transmission or distribution facilities under Part II of the FPA.

A FERC licence must be obtained under part I of the FPA for the construction of hydroelectric facilities on navigable waters. Construction affecting federal lands may also require authorisation from agencies such as the Bureau of Land Management, the US Forest Service or the National Park Service. The US Army Corps of Engineers reviews projects affecting wetlands or navigable waters. Nuclear facilities must be licensed by the US Nuclear Regulatory Commission (NRC). The Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement within the Department of the Interior are responsible for offshore oil and gas lease sales and offshore renewable energy development.

4 Grid connection policies

What are the policies with respect to connection of generation to the transmission grid?

FERC-jurisdictional transmission providers are required to provide interconnection service under the terms of an OATT. Generators have the right to request interconnection services separately from transmission services.

In response to complaints by generators that interconnection procedures were being used by some transmission providers in a discriminatory manner, FERC implemented rules to standardise agreements and procedures for generators and required FERC-jurisdictional transmission providers to interconnect generators to the grid in a non-discriminatory manner. Under the standard interconnection procedures, generators are required to pay the full cost of any interconnection facilities up front (from the generator to the point of interconnection) and network transmission facilities (beyond the point of interconnection) necessary to connect the generator with the transmission grid. The generator is reimbursed for the cost of any network transmission facilities through credits for future transmission service on the grid. ISOs and RTOs have the flexibility to propose changes to the standard interconnection agreement and procedures, as well as to the procedures for recovering interconnection costs. For example, ISOs and RTOs may seek authorisation to allocate the costs of network upgrades to the generator requesting the upgrades (in exchange for granting capacity rights on the transmission system). FERC does not regulate local distribution facilities, but has authority to regulate the rates, terms and conditions of any wholesale sales transaction using such a facility. See question 11 for further discussion.

To encourage development of new generation, FERC issued Order No. 807, easing the requirement for certain generator owners and operators to have an OATT on file with FERC for public utilities who are subject to those regulations solely because they own or operate Interconnection Customer Interconnection Facilities (ICIF) (ie, those that own generator tie lines). Previously, an ICIF owner must have either had on file an OATT or received a case-by-case waiver of the OATT requirement, and also was obligated to provide interconnection service to other generators that sought to interconnect to the grid using its ICIF. To ease the regulatory burden on new generation developers, the new rule grants a blanket waiver of all OATT and other open-access requirements to any public utility that is subject to those requirements solely because it owns, controls, or operates an ICIF, including entities that do not sell electricity. In addition, the rule provides a 'safe harbour' period for five years in which there would be a rebuttable presumption that the ICIF owner has definitive plans to use its capacity and therefore are not required to provide interconnection service to other generators seeking to interconnect generation in the same location during the safe harbour period.

5 Alternative energy sources

Does government policy or legislation encourage power generation based on alternative energy sources such as renewable energies or combined heat and power?

Yes. Legislation passed and signed into law by the president in 2009, the American Recovery and Reinvestment Act of 2009 (Recovery Act), contains provisions for direct spending, tax credits and loan guarantee programmes designed to promote development of renewable energy projects. The Recovery Act extended the production tax credit (PTC) on renewable energy systems, while also offering expansions on and alternatives for PTCs (http://energy.gov/savings/renewable-electricity-production-tax-credit-ptc). The PTC is available for most renewable energy systems for facilities that have commenced construction before 1 January 2017. In December 2015, the relevant laws were amended to further extend the PTC for wind facilities to include those for which construction begins before 1 January 2020, but this extension was accompanied by a phase-out of the PTC for wind facilities over a four-year period. Where construction of a wind facility begins prior to 1 January 2017, the full PTC is available. For wind facilities where construction is commenced after 2016 and before 2020, the PTC available is reduced by 20 per cent; for facilities with construction beginning in 2017, by 40 per cent; where construction is commenced in 2018; and by 60 per cent for facilities begun in 2019.

Solar facilities are eligible for an investment tax credit (ITC) in which, as an alternative to the PTC, a project developer may elect a grant equal to a percentage of the facility's tax basis, so long as the facility is depreciable and amortisable and placed into service before 1 January 2022. The ITC applies in the year in which the qualifying property is placed in service and is a credit equal to a percentage of the taxpayer's tax basis in certain qualifying investments. For solar facilities placed in service by 2020, the credit is 26 per cent, and 22 per cent for facilities placed in service by 2021. A solar facility for which construction commences before 1 January 2022 but which was placed in service after 31 December 2021 is eligible only for a 10 per cent ITC.

The DOE Office of Energy Efficiency and Renewable Energy (EERE) is the focal point for several alternative energy programmes, including the biomass programme, the geothermal technologies programme, the solar energies technologies programme, the hydrogen, fuel cells and infrastructure technologies programme, and the wind and hydropower technologies programme (www.eere.energy.gov). The EERE provides a variety of forms of financial assistance for the research and development of renewable energy, including grants, laboratory subcontracts, and cooperative research and development agreements (www1.eere.energy.gov/financing/types_assistance.html). Moreover, as of August 2016, 29 states plus the District of Columbia and three US Territories have adopted renewable portfolio standards that require electricity providers to obtain a minimum percentage of their power from renewable energy resources by a certain date, and eight others (and one US territory) have set voluntary goals for adopting renewable energy resources (http://ncsolarcen-prod.s3.amazonaws.com/wp-content/uploads/2014/11/Renewable-Portfolio-Standards.pdf). As of March 2015, 20 of these states include combined heat and power (CHP) and/or waste heat recovery as an eligible resource (https://www.epa.gov/sites/production/files/2015-07/documents/portfolio_standards_and_the_promotion_of_combined_heat_and_power.pdf).

Cogeneration and small power production purchase and sale requirements

EPAct 2005 amended the mandatory purchase and sale requirements of the Public Utility Regulatory Policies Act (PURPA). Historically, electric utilities were obligated to purchase or sell electric energy from or to a facility that is an existing qualifying cogeneration or small power production facility (QF). However, if the QF is selling in a market that meets certain criteria established by FERC, that purchase obligation may be terminated. In 2006 FERC issued Order No. 688, which permits the termination of the requirement that an electric utility enter into new contracts to sell energy to or purchase energy from a QF after the electric utility files for such relief from FERC, and FERC makes appropriate findings. Several utilities have successfully pursued relief under Order No. 688. These changes do not affect pre-existing contracts or obligations.

6 Climate change

What impact will government policy on climate change have on the types of resources that are used to meet electricity demand and on the cost and amount of power that is consumed?

Federal and state climate change policies promoting carbon-free energy sources are more likely to have an impact on the types of resource used to meet US electricity demand in the medium- or long-term time frame than in the short term. The US electric industry's reliance on fossil fuels (particularly coal) to meet rising energy demands is driven primarily by cost considerations: coal is a cheap and plentiful domestic fuel source. However, the influx of low variable cost renewable projects and the growth of shale gas have reduced some of the energy cost advantages of coal generation with the most significant impact on older, less efficient coal units. Although recent federal and state legislative initiatives have provided down payments toward the creation of cost-competitive renewable energy technologies, the large-scale deployment of these technologies is still hampered by variability of resources such as wind, the need for additional backbone transmission capacity between regions, and the lack of storage capacity.

Other proposed state and federal legislation (for example, cap-and-trade schemes) and foreign policy initiatives could impose additional costs on electricity generators using carbon-rich fossil fuels. In general, legislative proposals and environmental regulations are likely to impose greater costs on the energy that is consumed. State or federal governments could subsidise renewable energy and carbon mitigation initiatives by surcharges on electricity generation or consumption. Compliance costs incurred by utilities arising from state or international cap-and-trade legislation, federal regulations, or state regulation of vehicular carbon emissions would be passed on through every transaction involving electricity.

The Environmental Protection Agency (EPA) is the chief US agency tasked with issuing regulations under the Clean Air Act (CAA) regarding pollutants and carbon dioxide emissions from power generation sources. For instance, new and existing coal-fired plants may be incentivised or required to have carbon capture and sequestration (CCS) capabilities. In 2011 the EPA issued the Cross-State Air Pollution Rule under the Clean Air Act that requires coal companies in 28 states to reduce emissions of sulphur dioxide and nitrogen dioxide by 73 per cent and 54 per cent, respectively, from 2005 levels by 2014. The rule was controversial, with many in the coal industry claiming that it will be cost-prohibitive to obtain and install the CCS technology necessary to meet the standard. As a result, the coal industry warns that coal generating facilities will be forced to prematurely shut down. In April 2014, the US Supreme Court upheld the EPA rule, affirming EPA's authority to regulate existing power plants for greenhouse gases so long as they are being regulated for other pollutants as well.

The issue of how to properly account for compliance costs of pollution reduction was at the heart of another recent US Supreme Court case. There, the US Supreme Court remanded an EPA rule setting limits on mercury and other toxic pollutants from power plants, ruling that the EPA violated the CAA by failing to consider costs when deciding

whether to set those emissions limits in the first place, although the EPA did eventually undertake a cost-benefit analysis when subsequently deciding how to regulate. As the EPA continues to issue new regulations related to pollution and climate change, whether and how to account for compliance costs will remain a key issue.

Perhaps the largest and most impactful regulatory initiative pertaining to climate change concerns the regulation of carbon dioxide emission limits from existing power plants. In June 2013, the US president ordered the EPA to create the first ever carbon emissions limit for existing power plants, stating that the US should lead the world in a 'coordinated assault' on climate change (www.whitehouse.gov/the-press-office/2013/06/25/remarks-president-climate-change). In August 2015, pursuant to the president's directive, the EPA promulgated its final regulations under part 111(d) of the CAA, which is known as the Clean Power Plan (CPP). In general, the CPP establishes broad carbon-dioxide emission targets for coal- and natural-gas fired power plants intended to cut CO_2 emissions by 32 per cent by 2030, leaving the states (excluding Vermont, Hawaii, Alaska and the District of Columbia) to choose from a variety of methods – such as renewable energies, efficiency improvements, or participating in an emission credit trading programme – to develop a plan to meet individual targets. The CPP calls for states to submit their emissions reduction plan for EPA review by 2018 and to demonstrate initial compliance by 2022. A state must meet a final emissions goal starting in 2030. However, currently, those timelines may change following the outcome of pending court challenges. In February 2016, the US Supreme Court granted a request from several states and industry participants to stay implementation of the CPP while a challenge to the CPP is being litigated before the US Court of Appeals for the DC Circuit. The US Court of Appeals for the DC Circuit will hear arguments in that case in September 2016, with the losing side widely expected to appeal to the US Supreme Court. A final ruling on the CPP may not come until 2017 or 2018.

Should the CPP be implemented in its current form, however, the most notable effect will likely be the retirement of a number of coal-fired power plants, as the CPP calls for a decreased reliance on coal-fired generation in favour of an increased reliance on natural gas-fired generation. However, the CPP places limit on the use of natural gas resources and over the medium to longer-term, so it is expected that more generation capacity will come from renewable sources.

An issue raised by the increased incorporation of renewable resources (as is required under the CPP) is grid reliability. In general, FERC and NERC are tasked with maintaining reliability for the Bulk Electric System. For the CPP, FERC has pledged to coordinate with EPA and DOE to ensure continued reliable electricity generation and transmission as it is implemented (http://ferc.gov/media/headlines/2015/CPP-EPA-DOE-FERC.pdf). As generating capacity from coal-fired resources decreases, developing suitable replacement generation and transmission resources sufficient to maintain capacity and meet electricity demand, particularly during peak usage periods, could cause significant reliability problems. Moreover, as most renewable generation resources, such as wind and solar sources, are in remote locations, additional transmission infrastructure must be constructed. Energy storage resources may also be needed to ensure reliability, such that sufficient capacity can be deployed during times of peak usage, as generation of variable resources inherently fluctuate.

In addition, a number of utilities have closed or announced plans to shut down certain, mostly older, less efficient, coal power plants. Meanwhile, the US export of coal continues to decline, with exports falling for the third consecutive year in 2015, exporting 74 million short tons, which is almost 23 million short tons lower than 2014 and 50 million short tons lower than the record volume of coal exported in 2012 (www.eia.gov/todayinenergy/detail.cfm?id=25252). However, despite this decrease, given the overall amount of US coal exports, some wonder if it makes sense to limit the domestic use of coal only to ship it elsewhere to be consumed.

7 Storage

Does the regulatory framework support electricity storage including research and development of storage solutions?

Most direct support for development of commercial energy storage resources has occurred at the state level. For instance, California adopted in 2014 a mandate to require utilities to create 1.3 gigawatts of energy storage capacity by 2022. Federal legislation has primarily been focused on research and development of innovative storage technologies that are not yet ready for private investment. For instance, in 2007, Congress passed the America COMPETES Act, which established the Advanced Research Projects Agency within the DOE (ARPA-E) to fund research and development of new innovative technologies including storage. In addition, recently, legislation was introduced by several US senators to establish an income tax credit for businesses and home use of energy storage (www.heinrich.senate.gov/press-releases/heinrich-introduces-bipartisan-bill-to-create-tax-credit-for-energy-storage). In the CPP, EPA noted the potential for energy storage to assist with the integration of renewable resources into the grid, but did not include energy storage resources as a way to reach pollution reduction targets.

From a regulatory perspective, FERC, in recent years, has issued several rules that, while not specifically aimed at energy storage resources, accommodate and encourage participation of non-traditional resources, including energy storage resources, in the wholesale energy markets. For instance, in 2011, FERC issued Order No. 755, requiring RTOs and ISOs to implement a 'pay for performance' compensation structure for frequency regulation service. Though not specifically aimed at energy storage resources, the intention of Order No. 755 was to ensure that flexible resources were receiving adequate compensation in the wholesale electric markets. In 2013, FERC issued Order No. 784, requiring all public utility transmission providers to have in their OATT a statement that it will take into account the speed and accuracy of regulation resources, as well as amended its accounting regulations to improve the accounting for and reporting of transactions associated with energy storage resources. Other FERC orders since, such as those concerning small generator interconnection policies and frequency response, also are intended to ensure RTO and ISO rules do not discriminate against newer technologies. Most recently, in April 2016, FERC commenced an informational proceeding to examine 'whether barriers exist to the participation of electric storage resources in the capacity, energy, and ancillary service markets potentially leading to unjust and unreasonable wholesale rates' (www.ferc.gov/industries/electric/indus-act/rto/A-4-Presentation.pdf). In some RTO/ISO markets, steps have been taken to revise market rules to improve the ability of storage resources to participate; for example, recently FERC approved changes to the California Independent System Operator Inc (CAISO) tariff allow market participants to submit state of charge as a bidding parameter, allowing storage providers flexibility in their offers.

8 Government policy

Does government policy encourage or discourage development of new nuclear power plants? How?

Historically, government policy has encouraged the development of new nuclear power plants. In 2010 the DOE launched a nuclear power programme in an attempt to jump-start the proposed construction of new nuclear plants by co-funding with the nuclear industry efforts to evaluate and bring new technologies to market. This included utilising a new NRC licensing process intended to streamline NRC approval of such projects. The DOE also put in place a Generation IV Nuclear Energy Systems initiative, which aims to develop new plant designs that minimise waste and are safer and more proliferation-resistant than today's nuclear plant designs (www.nuclear.energy.gov/genIV/neGenIV1.html). EPAct 2005 also encouraged the construction of new nuclear plants by establishing a production tax credit. Under that plan, operators of the first 6,000MW of capacity from new nuclear power plants that are placed in service before 2021 will receive a production tax credit of 1.8 cents per kWh during the first eight years of the plant's operation.

The US DOE Loan Guarantee Program was designed to promote development of the nuclear power industry through loan guarantees for the construction of new nuclear power plants in the US. These loan guarantees help developers of new nuclear plants in the US to obtain favourable financing terms, which is of critical importance when constructing plants with a projected price tag in the range of US$7 to US$10 billion per unit. Indeed, many companies that are considering building new plants have publicly stated that, absent a federal loan guarantee, they will not be able to finance and build their proposed projects. Seventeen companies building 21 nuclear units have applied for the guarantees. To date, a conditional loan guarantee of US$8.33 billion

has been granted to the developers of two nuclear units in Georgia. The DOE's Loan Guarantee Program also has earmarked an additional US$4 billion for the construction of new uranium enrichment facilities in the US. Access to additional supplies of enriched uranium fuel will be critical to support the development of new nuclear plants in the US. In May 2010, the DOE announced that it would grant a conditional loan guarantee of US$2 billion for the construction of a uranium enrichment plant in Idaho. In December 2014, the DOE Loan Guarantee Program issued a solicitation for an additional US$12.5 billion in available loan guarantees to support the construction of new large or small nuclear reactors, or provide upgrades to existing facilities, including US$2 billion set aside for uranium conversion or enrichment projects.

Since the Fukushima nuclear reactor crisis in March 2011, however, development of nuclear power plants in the US has slowed, particularly with respect to licensing of new power plants or the relicensing of existing plants. Following an August 2012 decision by the US Court of Appeals for the DC Circuit ruling that the NRC did not sufficiently examine proper storage of nuclear waste in its regulations, the NRC suspended new licensing and licensing renewal for nuclear plants until a full reassessment of nuclear waste storage was completed. In September 2014, the NRC issued its new rule and resumed licensing decisions. The NRC's new rule was upheld in a June 2016 decision by the US Court of Appeals for the DC Circuit. Additionally, in August 2013, the US Court of Appeals for the DC Circuit ordered the NRC to make a key decision regarding a proposed nuclear waste disposal site in Yucca Valley, NV, stating that the NRC did not have the legal authority to continue to delay making a decision regarding the licencing of the project (www.cnn.com/2013/08/13/us/nevada-yucca-mountain-order). That process remains ongoing, with DOE and NRC working to develop an Environmental Impact Statement. Whether and when this site becomes operational impacts the licensing and relicensing of nuclear power plants, as those decisions may require a permanent storage and disposal site for nuclear waste.

A new hurdle facing nuclear power is the relative low price of other energy resources, such as natural gas and subsidisation of renewable resources, which combine to reduce the economic viability of nuclear generation. In May, 2014, for example, several nuclear power facilities failed to be selected to sell energy into a capacity market run by PJM Interconnection, Inc (PJM) because the price offered in the capacity market was insufficient to cover the costs of the nuclear facilities. As a result, the nuclear facilities must either cease production or find private purchasers and some utilities have announced that they will close certain nuclear plants. For instance, Exelon Corporation, operator of the largest nuclear fleet in the US, announced it was permanently closing two facilities in Illinois, citing the fact that the facilities had lost $800 million over the past seven years (www.nytimes.com/2016/06/03/business/exelon-to-close-2-nuclear-plants-in-illinois.html?_r=0). It remains to be seen, however, whether changes to capacity auctions that seek to reward high-performing generating units, such as those planned for the PJM and ISO New England markets, will benefit nuclear power generators.

The EPA's new Clean Power Plan (CPP) rules include new rules that benefit nuclear plants currently under construction or facilities planned for the future. Under the CPP, future or nuclear power facilities currently under construction will count toward complying with the state-specific carbon-dioxide emission's reduction goal. This represents a change from an earlier proposal, which would have excluded plants under construction or slated for upgrades, such as those in Tennessee, South Carolina and Georgia.

In July 2016, New York adopted a proposal that would allow nuclear facilities in the state to earn 'Zero Emission Credits' (ZECs) as part of New York's renewable energy standard. The ZECs would be calculated using a formula that uses the expected power costs in the region and the federal government's calculation of the social price on carbon used by federal agencies use in rulemaking. Utilities in the state would then be required to purchase a pro rata share of ZECs, thus providing a value for the emissions-free energy produced by nuclear facilities. The result of this proposal was immediate – a New York nuclear facility that had been slated to close was purchased by a buyer that agreed to keep the facility open. However, New York's plan is controversial and remains subject to likely legal challenge. If the plan survives legal challenge, it could spur similar action in other states.

Regulation of electricity utilities – transmission

9 Authorisations to construct and operate transmission networks

What authorisations are required to construct and operate transmission networks?

Construction

Construction of transmission facilities is primarily a state-regulated function, but federal authorities have jurisdiction over siting on federal lands, and multi-state projects may require the authorisation of several states. Historically, this fragmented system for siting new power lines, in addition to other factors such as regulatory uncertainty on the state and federal levels associated with transmission cost recovery, has been a significant barrier to the development of new transmission in the US. EPAct 2005 provides tools to facilitate new construction and improvements to the existing transmission infrastructure.

EPAct 2005 directed the DOE to conduct a nationwide study of electric transmission congestion and identify areas in which transmission capacity constraints or congestion adversely affects consumers and designate such areas as national interest electric transmission corridors (NIETCs). The most recent draft nationwide electric transmission congestion study was published in August 2014, but it did not propose nor designate any new NIETCs. EPAct 2005 gave FERC supplemental permitting authority to ensure timely construction of transmission facilities to remedy transmission congestion in those corridors. The DOE initially designated two such corridors in 2007, but the US Court of Appeals for the Ninth Circuit vacated and remanded the designations to the DOE for further proceedings in February 2011 (www.ca9.uscourts.gov/datastore/opinions/2011/02/01/08-71074.pdf). DOE announced that it will collaborate with FERC to prepare drafts of transmission congestion studies and environmental analyses for proposed NIETCs in the future (energy.gov/articles/doe-and-ferc-joint-public-statement-back-stop-siting). In addition, the US Court of Appeals for the Fourth Circuit limited FERC's supplemental backstop siting authority, ruling that it applied only in situations where a state refuses to act on a permit application or imposes uneconomic conditions, but determined FERC lacked the authority to overrule a state denial of a permit application. Thus, a state may be able to circumvent FERC backstop siting authority by properly denying an application (https://www.ferc.gov/legal/court-cases/opinions/2009/07_1651.P_opinion.pdf).

EPAct 2005 also provides a mechanism for the private use of the eminent domain power of the US government, where necessary, to obtain property for transmission infrastructure projects. In addition, EPAct 2005 requires that the federal government identify rights of way across federal lands that can be made available for siting electric transmission.

On 21 July 2011, FERC issued Order No. 1000, a final rule on Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities (www.ferc.gov/whats-new/comm-meet/2011/072111/E-6.pdf). The goal of Order No. 1000 is to ensure more reliable transmission service at just and reasonable rates. Order No. 1000 lays out certain requirements for coordinating transmission planning and allocating transmission costs so that transmission planners seek the most efficient and cost-effective way to meet needs in their respective regions and between regions. The implementation of Order No. 1000 is left largely to public utility transmission planners, which were directed to submit compliance filings in October 2012. The process of review, clarification, and refiling is largely still under way for most transmission planners. Pending the final approval and implementation of the compliance plans, as well as the outcome of any legal challenges to FERC's decisions, the impact of the order is at present unknown.

Operation

FERC issued a series of orders, beginning with Order No. 890, which were intended to eliminate the broad discretion that transmission providers had in calculating available transfer capacity (ATC), increasing non-discriminatory access to the grid and ensuring that customers are treated fairly in seeking alternative power supplies. Since Order No. 890-A, transmission providers have implemented new service options for long-term firm point-to-point customers and adopted modifications to other services. Instead of denying a long-term request for point-to-point service because as little as one hour of service is unavailable in the course of a year, transmission providers are now required to consider

their ability to offer a modified form of planning redispatch or a new conditional firm option to accommodate the request. This increases opportunities to utilise transmission efficiently by eliminating artificial barriers to the use of the grid. This standardisation reduces the potential for undue discrimination, increases transparency and reduces confusion in the industry that resulted from the prior lack of consistency. Also, FERC regulations require the posting of ATC values associated with a particular path, not available flowgate capacity values associated with a flowgate. With respect to energy and generation imbalance charges, a transmission provider must post the availability of generator imbalance service and seek imbalance service from other sources in a manner that is reasonable in light of the transmission provider's operations and the needs of its imbalance customers. FERC also limited roll-over rights to contracts with a minimum term of five years. In Order No. 890-B, FERC reiterated that a power purchase agreement must meet all of the requirements for designation as a network resource in order to be designated by the network customer or transmission provider's merchant functions.

10 Eligibility to obtain transmission services

Who is eligible to obtain transmission services and what requirements must be met to obtain access?

See questions 3 and 11.

11 Government transmission policy

Are there any government measures to encourage or otherwise require the expansion of the transmission grid?

Pursuant to EPAct 2005, FERC has established incentive-based rate treatments to encourage investment in and expansion of the US's aging transmission infrastructure. FERC Order No. 679, issued in 2006, includes a number of key provisions to promote transmission investment, including:

- incentive rates of return on equity for new investment by public utilities (both traditional utilities and stand-alone transmission companies);
- a higher rate of return on equity for utilities that join or continue to be members of transmission organisations (for example, RTOs and ISOs); and
- various advantageous accounting methods, including:
  - full recovery of prudently incurred construction work in progress, pre-operation costs, and costs of abandoned facilities;
  - use of hypothetical capital structures for ratemaking purposes;
  - accumulated deferred income taxes for stand-alone transmission companies;
  - adjustments to book value for stand-alone transmission company sales or purchases;
  - accelerated depreciation; and
  - deferred cost recovery for utilities with retail rate freezes.

In Order No. 679 and Order No. 679-A, FERC extended incentive rate treatments to all utilities joining ISOs or RTOs, irrespective of the date they join. However, this incentive does not apply to the transmission rate base that has already been built, as the incentive's purpose is to attract new investment in transmission.

12 Rates and terms for transmission services

Who determines the rates and terms for the provision of transmission services and what legal standard does that entity apply?

FERC has jurisdiction over unbundled transmission services (including transmission services provided over low-voltage facilities) provided by public utilities to wholesale customers or to retail customers with direct access. The states have jurisdiction over bundled retail service (namely, a combined generation and delivery product sold to retail customers) where direct access is not available. Court decisions and the interconnectivity of the transmission grid in the continental US have led to an expansive view of what constitutes transmission service in interstate commerce in all areas of the US except Alaska, Hawaii and ERCOT. The FPA, however, defers to the states jurisdiction over the local distribution of electricity.

FERC-jurisdictional utilities offering transmission services must do so under FERC-approved tariffs. Order No. 888 required jurisdictional electric utilities to submit pro forma OATTs that functionally unbundled transmission operations and services, and set forth rates for transmission and ancillary services. In 2007, FERC issued Order No. 890, which modified the pro forma OATT to better remedy undue discrimination by, among other things, providing greater transparency and consistency in the calculation of available transmission capacity, and requiring coordinated open transmission planning between regions.

Transmission providers are also required to maintain an open-access, same-time information system (OASIS) to publish information with respect to their transmission systems, including services, rates, and available transmission capacity as well as business rules, practices, and standards that relate to transmission services provided under the pro forma OATT.

Finally, the FPA empowers FERC to review rates and terms of transmission services to ensure that they are just and reasonable and not unduly discriminatory or preferential. Generally, tariffs and contracts for transmission services must be filed with FERC before service commences to allow an opportunity for Commission review, as well as public notice and comment. Because transmission services are a natural monopoly, Order No. 888 envisions that FERC will determine whether a particular tariff is just and reasonable via a traditional cost-of-service ratemaking inquiry that balances ratepayers and the utilities' financial interests to realise a rate within the zone of reasonableness. Tariffs can be challenged for being unjust, unreasonable, unlawful, or discriminatory.

EPAct 2005 authorises FERC to require transmission providers not subject to its jurisdiction to provide open access to their transmission system at terms and conditions comparable to those the unregulated entity provides to itself. An unregulated entity may be exempt from this requirement if it sells less than 4 million MWh of electricity annually or if it does not own or operate the transmission facilities needed to operate an interconnected system. However, many of these regulated entities already provide open access based on reciprocity agreements with transmission providers.

13 Entities responsible for grid reliability

Which entities are responsible for the reliability of the transmission grid and what are their powers and responsibilities?

Since 1968, NERC has operated as the primary entity responsible for assuring the reliability of the grid. NERC was founded by the electric utility industry to develop and promote rules and protocols to enhance the reliability of the bulk power electric system in North America through a voluntary, self-regulatory process. EPAct 2005 added section 215 to the FPA, which provides for the creation of an ERO to be the organisation responsible for establishing and enforcing reliability standards for the bulk power system in North America. In 2006, FERC certified NERC as the ERO. The ERO oversees an enforcement programme that includes compliance audit monitoring and reliability readiness review.

In 2007, FERC strengthened the reliability regime by approving mandatory reliability standards for the bulk electric system proposed by the ERO, approving delegation agreements between the ERO and eight regional entities and creating a new internal Office of Electric Reliability. The mandatory reliability standards apply to entities designated by NERC as users, owners, and operators of the bulk electric system. Both monetary and non-monetary penalties may be imposed for violations of these standards. In July 2014, a revised definition of the bulk electric system went into effect. The new definition expands the scope of facilities that form part of the bulk electric system to facilities operated at or above 100kV, thereby covering entities that own or control these facilities with certain limited exceptions. However, in March 2015, FERC gave approval for NERC to develop a new risk-based assessment and registration initiative intended to reduce regulatory burden and align compliance obligations with issues that pose a greater potential impact to reliability. Additional proposed NERC reliability initiatives include developing standards to minimise potential disruption from geomagnetic disturbance events as well as to create cyber security standards to protect operational infrastructure.

In addition, the replacement of coal-fired, nuclear, or other conventional generation resources with natural gas-fired or variable energy resources stands to impact grid reliability. As such, grid operators, such as RTO and ISOs, will likely need to develop approaches to effectively manage capacity during hours of peak demand, as well as manage overgeneration during off-peak hours. For instance, PJM, the RTO tasked with administering the transmission grid and energy and capacity markets for the Mid-Atlantic region, is in the process of transitioning to a new auction model for capacity called the Capacity Performance Resource model intended to improve overall reliability. The new model was created after the Polar Vortex in the winter of 2014 in which natural gas shortages resulted in the failure of multiple generating units. The Capacity Performance Resources structure contains bonus and penalty payments that are structured to provide greater assurance that energy and reserves will be available during instances of peak demand created as a result of emergency operating conditions. In addition, technological developments, such as improvements to grid forecasting and the development of smart grid technology, will likely assist grid operators in providing the flexibility needed to address the challenges presented by variable resources and decreased generation capacity from more traditional resources.

Regulation of electricity utilities – distribution

14 Authorisation to construct and operate distribution networks

What authorisations are required to construct and operate distribution networks?

Similar to generation siting, distribution is regulated primarily at the state level.

15 Access to the distribution grid

Who is eligible to obtain access to the distribution network and what requirements must be met to obtain access?

Specific procedures for connection to the distribution grid vary from state to state. However, state laws generally provide that distributors cannot deny service that is in the public interest.

16 Government distribution network policy

Are there any governmental measures to encourage or otherwise require the expansion of the distribution network?

Specific governmental measures to encourage or require the expansion of the distribution network vary by state.

17 Rates and terms for distribution services

Who determines the rates or terms for the provision of distribution services and what legal standard does that entity apply?

FERC has jurisdiction over transmission of electric energy in interstate commerce by public utilities, regardless of the voltage level of the delivery facilities. Section 201 of the FPA reserves regulatory authority over all facilities used in the local distribution of electricity to the state utility commissions. FERC in Order No. 888 promulgated a seven-factor functional test for the case-by-case determination of the jurisdictional separation between FERC-jurisdictional interstate transmission service (including service over low-voltage distribution lines) and state-jurisdictional local distribution service, and FERC generally defers to the states' application of this test. The functional test looks at the proximity of the facilities to retail customers; whether the facilities are radial in character; whether power flows into or out of the facilities; whether power entering the facilities is transported to another market; whether power is consumed in a defined area; whether the facilities include meters to measure power flow into the facilities; and the voltage of the power flowing through the facilities.

FERC determines the rates, terms, and conditions of transmission service in interstate commerce (including service over low-voltage facilities) under the FPA's just and reasonable standard based on cost-of-service principles. Where retail customers buy electricity from a wholesale provider, and the electricity is then delivered over distribution facilities by the load-serving entity, the state determines the rates, terms, and conditions of such distribution service. Because distribution services are considered to be a natural monopoly, state public utility commissions generally review tariffs for distribution services proposed by the utilities via a traditional cost-of-service ratemaking inquiry. State utility commissions generally approve the tariffs submitted by utilities if they are just and reasonable. The tariffs offered by various utilities will typically vary, even within a state.

Regulation of electricity utilities – sales of power

18 Approval to sell power

What authorisations are required for the sale of power to customers and which authorities grant such approvals?

FERC has jurisdiction over sales of power at wholesale in interstate commerce other than sales by federal or state governmental bodies and rural cooperatives that are indebted to the Rural Utilities Service (RUS) or cooperatives that sell less than 4 million MWh of electricity per year. Retail sales of electricity are regulated at the state level, with variation from state to state.

19 Power sales tariffs

Is there any tariff or other regulation regarding power sales?

Tariffs and contracts pursuant to which public utilities sell power generally must be filed with FERC (wholesale sales) or the applicable state PUC (retail sales) before service commences to allow the applicable regulatory entity an opportunity for review, as well as for public notice and comment. Under the FPA, FERC has jurisdiction over wholesale rate-making and is charged with assuring the rates, terms and conditions pursuant to which public utilities offer wholesale power sales are 'just and reasonable'.

FERC permits wholesale sales of power at market-based rates if the seller demonstrates a lack of market power by passing a series of horizontal and vertical market screens. FERC has commenced investigations to determine whether utilities should retain their authority to sell power at market-based rates after finding that certain utilities did not pass at least one of the screening tests. In response, several utilities voluntarily agreed to implement cost-based rate caps in the areas where FERC found a presumption of market power and revoked the market-based rate authority of a utility.

Sellers of wholesale power that have applied for and received FERC approval to sell power pursuant to a market-based rate tariff can thereafter enter into new power sales contracts and transactions without filing the contracts before commencing service. Instead, such sellers file quarterly reports of their power sales contracts and transactions under their market-based rate tariff. In the absence of a showing of a lack of market power, FERC regulates the rates for wholesale sales under cost-of-service rate-making principles, and each new contract must be filed with FERC before the commencement of service.

Unlike the situation with respect to transmission tariffs, FERC does not generally dictate specific non-price terms and conditions in wholesale power sales contracts but does dictate specific non-price terms and conditions in the market-based rate tariff. The regulatory structure allows complaints to be filed challenging contracts or reported power sales transactions as being unjust, unreasonable, unlawful or discriminatory.

Retail sales are regulated at the state level, with significant variation from state to state. In the absence of a competitive retail market, retail rates are typically established based on cost of service.

20 Rates for wholesale of power

Who determines the rates for sales of wholesale power and what standard does that entity apply?

Section 201 of the FPA grants FERC exclusive regulatory authority over the wholesale sale of electricity in interstate commerce by jurisdictional entities. The state utility commissions retain regulatory authority over wholesale sales of electricity by purely intrastate wholesale sales (in practice, this class is limited to wholesale sales in Alaska, Hawaii and ERCOT), as well as wholesale sales by non-jurisdictional entities such as rural electric cooperatives, municipal utilities, and state or federally created utilities.

FERC's exclusive regulatory authority was reaffirmed in a recent decision by the US Supreme Court that invalidated a state incentive

programme that provided a guaranteed income to new natural gas-fired generating facilities to ensure the facility would clear the wholesale capacity auction operated by the RTO. A unanimous US Supreme Court struck down the programme, finding that subsidy artificially suppressed wholesale power prices, and therefore infringed on FERC's exclusive authority to regulate wholesale sales of electricity in interstate commerce.

The FPA grants FERC authority over all jurisdictional wholesale sales of electricity to ensure that wholesale rates are just, reasonable and not unduly discriminatory or preferential. Although traditionally FERC had employed a cost-of-service ratemaking inquiry when reviewing wholesale rates to realise this statutory mandate, FERC has also allowed the market to determine wholesale power rates where it has found that the seller and its affiliates lack or have mitigated vertical or horizontal market power, and have adequately restricted affiliate transactions with captive customers. Once FERC approves a jurisdictional entity's generic market tariff, the jurisdictional entity is free to negotiate with other parties in the marketplace over the specific rate charged for the wholesale sale without having to seek FERC approval of the agreement before commencing service.

21 Public service obligations

To what extent are electricity utilities that sell power subject to public service obligations?

At the retail level, electric utilities have traditionally operated under an obligation to serve. In exchange for what is generally an exclusive service territory and an opportunity to recover prudently incurred expenses through cost-based rates, utilities are obliged to provide service to all customers in that service territory, as well as to plan adequately for the future needs of customers. In states that adopt retail competition, certain electric utilities may still retain an obligation to provide service to customers who do not select a competitive supplier.

FERC has recognised that wholesale electricity sales are generally governed by private contract, rather than by regulatory order or an express obligation to serve.

Regulatory authorities

22 Policy setting

Which authorities determine regulatory policy with respect to the electricity sector?

A number of governmental agencies are involved in different aspects of the regulatory policies governing electricity. At the federal level, Congress ultimately determines the direction of national energy policy through legislation, but it delegates broad authority to implement legislative mandates to FERC, the Department of Energy, and other administrative agencies. At the state level, electric utilities are regulated by PUCs.

23 Scope of authority

What is the scope of each regulator's authority?

FERC has authority to regulate sales of wholesale power and transmission in interstate commerce and to grant and administer licences for hydroelectric plants on navigable waters. Under the Public Utility Holding Company Act of 2005 (PUHCA 2005), FERC also has authority to grant exempt wholesale generator (EWG) status and foreign utility company (FUCO) status. FERC exercises authority under PURPA with respect to qualifying small power production facilities and cogeneration facilities (QFs).

FERC has jurisdiction over the disposition of assets subject to its jurisdiction, including through mergers, asset divestitures, corporate reorganisations and other transactions in which there is a change in the control of jurisdictional assets. FERC also has oversight authority with respect to the issuance of securities (except if regulated by a state) and interlocks among the officers and directors of public utilities and financial institutions, or the utility's suppliers of electrical equipment. Public utilities under FERC's jurisdiction are subject to various requirements with respect to accounting and record retention and are required to satisfy various reporting requirements.

Under PUHCA 2005, FERC has increased oversight over, and access to, the books and records of public utility holding companies and their subsidiaries and affiliates to the extent that such books and records pertain to FERC-jurisdictional rates or charges. Any service company in a holding company system providing non-power goods and services to an affiliated FERC-jurisdictional public utility or natural gas company must file annual reports disclosing detailed information about their businesses. Public utility holding companies may seek exemptions and waivers from these regulatory requirements. However, an automatic exemption from all of the requirements is available to companies that are holding companies solely with respect to ownership of EWGs, QFs or FUCOs. In addition, single-state holding companies are entitled to a waiver from some, but not all, of the requirements but must seek the waiver from FERC.

The NRC licenses the construction and operation of nuclear power plants and other nuclear facilities to ensure the protection of public health and safety. The Atomic Energy Act governs the use of nuclear materials by both military and civilian entities, requires that all nuclear facilities be licensed, and establishes compensation for, and limits damages arising from, nuclear accidents. The NRC has developed detailed regulations and guidelines concerning all aspects of the operations of a nuclear power plant.

State PUCs regulate terms and rates for retail sales and delivery of electricity. PUCs are charged with ensuring that the public has access to safe, reliable utility service at reasonable rates and, thus, also have authority over at least some aspects of the organisation and finances of public utilities. Many PUCs also have authority to make siting decisions for transmission lines and generation facilities. However, in other states, siting decisions are delegated to other agencies.

Many local governments operate municipal utilities to provide electric service to their local communities. While the majority of municipal utilities serve smaller communities, several large cities, such as Los Angeles, San Antonio, Seattle and Orlando, operate publicly owned electric utilities. City councils and boards of elected or appointed officials generally govern municipal utilities.

The RUS promotes electrification of rural America by providing financing to local cooperatives. Electric cooperatives are governed by their member customers through an elected board of directors. Cooperative boards set rates as well as determine the types of services available and other policies. PUCs regulate some aspects of cooperatives' activities in approximately 20 of the states in which cooperatives operate (The Regulatory Assistance Project, Electricity Regulation in the US: A Guide, page 24 (March 2011)). Rural cooperatives with loans outstanding from the RUS are also obliged to comply with various loan covenants and regulations that affect their operations. The TVA, formed in 1933 as a wholly owned corporation of the US government, generates and transmits power in seven south-eastern states. Under the Consolidated Appropriations Act of 2005, TVA is governed by a nine-member, part-time board, appointed by the president and confirmed by the Senate to serve staggered five-year terms (www.tva.com/abouttva/board/faq.htm).

The four federal power marketing administrations (PMAs) (the Bonneville, Southeastern, Southwestern and Western Area Power Administrations – the Alaska Power Administration was privatised in 1998) operate as agencies of the DOE. The PMAs do not own or operate generating facilities but market the power produced by federally owned hydro-facilities. Administrators of the PMAs have authority to set rates and must certify that rates are 'consistent with applicable law' and 'the lowest possible rate to customers consistent with sound business principles'.

24 Establishment of regulators

How is each regulator established and to what extent is it considered to be independent of the regulated business and of governmental officials?

FERC and NRC are each authorised to have five commissioners. The president nominates and Congress confirms commissioners for FERC and the NRC for staggered five-year terms. The president also appoints one commissioner to serve as chair of each commission. No more than three commissioners may belong to a single political party. Furthermore, FERC and NRC decisions are not subject to review by the president, Congress, the DOE or other agencies.

State PUCs vary in size, but generally have between three and seven commissioners. It is common to limit the number of commissioners

who may be from a single political party. In most states, the governor appoints commissioners, with approval by the upper house of the state legislature, for staggered five or six-year terms. In some states, commissioners are elected. The governor typically designates one commissioner to serve as chair of the commission, although in some states the commissioners select the chair. State commissioners are generally subject to restrictions similar to those of their federal counterparts with respect to employment, investments and ex parte communications.

25 Challenge and appeal of decisions

To what extent can decisions of the regulator be challenged or appealed, and to whom? What are the grounds and procedures for appeal?

Decisions by FERC can be challenged on both substantive and procedural grounds. Within 30 days of a final decision or order by FERC, a party to the proceeding (either the applicant or an intervenor) may file a request for rehearing with FERC. Within 60 days of issuance of the decision on rehearing, an aggrieved party may request a review of FERC decisions by a US Court of Appeals. In general, the Court of Appeals will not consider any objections not raised in the request for rehearing to FERC. US Supreme Court review is possible upon a showing of compelling cause (for example, a conflict between decisions of two or more circuits of the US Court of Appeals or often where a major rule issued by a federal agency is invalidated by a Court of Appeals). PUC decisions can also be challenged through judicial appeals in state courts, or if the decision violates federal law, a cause of action could be brought in federal court (subject to various limitations).

Acquisition and merger control – competition

26 Responsible bodies

Which bodies have the authority to approve or block mergers or other changes in control over businesses in the sector or acquisition of utility assets?

FERC approval is required before the disposition of any facilities subject to its jurisdiction under the FPA of a value in excess of US$10 million, as well as direct or indirect mergers or consolidations of public utility facilities with those of any other person regardless of the value of the facilities. Facilities under FERC's jurisdiction under section 203 of the FPA include facilities used for transmission or sale of electric power in interstate commerce (including 'paper facilities' such as contracts for wholesale power sales) as well as generation assets used for wholesale sales. FERC review is required if there is a change in 'control' of jurisdictional facilities. In general, FERC will presume that a transfer of less than 10 per cent of a public utility's holdings is not a transfer of control.

Any holding company that owns an entity selling power at wholesale or transmitting electric energy must obtain FERC authorisation to acquire securities valued in excess of $10 million in any entity that sells at wholesale or transmits electric energy or to otherwise merge with any such entity with a value in excess of $10 million. In addition, the transfer of specific assets or licences may necessitate additional reviews. For example, the transfer of a nuclear generating facility requires NRC approval.

FERC has established blanket authorisations for a variety of transactions. For example, transactions in which a holding company that includes a transmitting utility or an electric utility seeks to acquire or take any security of a transmitting utility or company that owns, operates or controls only facilities used solely for transmission in intrastate commerce or sales of electric energy in intrastate commerce, or facilities used solely for local distribution or sales of electricity at retail, are automatically authorised. Transactions involving internal corporate reorganisations that do not present cross-subsidisation issues or involve a traditional public utility with captive customers or that owns transmission assets are also automatically authorised. Acquisitions by holding companies of non-voting securities do not require prior FERC authorisation. Acquisitions by holding companies of voting securities do not require prior FERC authorisation if, after the acquisition, the acquiring holding company will directly or indirectly own less than 10 per cent of the outstanding voting securities. Moreover, acquisitions by holding companies of foreign utility companies do not require FERC authorisation except where the holding company or its affiliates has captive customers in the US, in which case the holding company must make certain representations that the transaction will not adversely affect such captive customers.

The Federal Trade Commission (FTC) and the Antitrust Division of the Department of Justice (DOJ) (collectively, the antitrust agencies) are the primary agencies with authority to enforce US antitrust and fair trade practice laws. The antitrust agencies can review the antitrust implications of proposed mergers and certain acquisitions of assets or securities in the electricity sector under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (HSR Act). Their authority is not specific to any one industry, but they, in addition to FERC and the states, may challenge in court anticompetitive practices in the electricity sector. The antitrust agencies' authority comes from laws including the HSR Act, the Federal Trade Commission Act (FTCA), the Clayton Act and the Sherman Act.

Finally, individual state regulatory bodies often must approve an acquisition or divestiture of utility companies or assets in that state, pursuant to state law. The procedures and standards for that review vary from one state to another.

27 Review of transfers of control

What criteria and procedures apply with respect to the review of mergers, acquisitions and other transfers of control? How long does it typically take to obtain a decision approving or blocking the transaction?

In considering an application to merge, acquire or transfer control of assets under section 203 of the FPA, FERC must determine whether the proposed transaction is in the public interest. As provided in FERC's merger policy statement in Order No. 592, such determination requires an evaluation of the proposal's effect on competition, rates and regulation. FERC must also consider whether proposed acquisitions will result in cross-subsidisation of any non-utility company in the same holding company system or in any pledge of utility assets for the benefit of any company in the same holding company system. FERC may approve an acquisition resulting in such cross-subsidisation or pledge of utility assets only if FERC determines that such cross-subsidisation or pledge will be consistent with the public interest.

With respect to assessing a proposed transaction's impact on competition under section 203 of the FPA, FERC's merger policy statement generally requires that applicants provide it with a competitive screen analysis (horizontal or vertical, as appropriate) showing the effect of the proposed disposition on relevant products in relevant geographical markets. The competitive screen analysis must:

- identify the relevant products (such as economic capacity and available economic capacity) and the geographical markets in which the competitive effects of the acquisition can be analysed;
- determine the market shares of all participating firms and the degree of concentration in the market, both before and after the proposed acquisition; and
- identify the market characteristics that will influence the ability of the combining entities to adversely affect competition, such as barriers to entry into the relevant market by other firms.

Market power is measured in part using the Herfindahl-Hirschman Index (HHI) measure of market concentration. The current DOJ and FTC guidelines have higher HHI thresholds than FERC for determining market concentration, making it less likely for a particular market to be deemed 'moderately concentrated' or 'highly concentrated' based on HHI alone. However, FERC's appendix A horizontal electric utility merger analysis does not follow the DOJ and FTC guidelines, but instead uses a more stringent standard to measure market concentration.

FERC evaluates both the magnitude of increases in market power and overall post-transaction concentrations of market power to identify those transactions that are likely to have an adverse impact on competition. Applicants, however, are allowed to identify in their analysis other factors that may help to negate the presumption, such as benefits that the proposed acquisition will bring.

FERC will provide expedited consideration of completed applications for approval of transactions that are not contested, do not involve mergers and are consistent with FERC precedent, as well as uncontested transactions involving a disposition of only transmission

facilities under the functional control of a FERC-approved RTO or ISO; transactions that do not require a competitive screen analysis; and internal corporate reorganisations that do not present cross-subsidisation issues. For transactions that do not qualify for such expedited action, FERC is required to act within 180 days after the filing of an application, unless FERC determines there is good cause for requiring additional time, in which case the time for action may be extended up to 180 days. For example, FERC might extend the time frame for action if it finds that an evidentiary hearing is needed to determine whether the transaction is in the public interest.

The antitrust agencies may review the antitrust implications of mergers and certain acquisitions of assets or securities before those transactions are consummated under the HSR Act. The FTC promulgated a set of detailed rules that govern the pre-merger notification that must be filed in connection with such a transaction. A transaction subject to the HSR Act may not close before the expiry of the applicable waiting period, which is initially 30 days. If the antitrust agency decides to open a second-phase investigation, the waiting period will be extended until the 30th day following substantial compliance with a second request. If the reviewing antitrust agency determines that the transaction may harm competition in a relevant market, it may seek a preliminary injunction in a federal court, which would bar the consummation of the merger until the court (in a DOJ action) or the FTC (in an FTC action) has an opportunity to decide whether to seek a permanent injunction following a full trial. Such a preliminary injunction does not issue automatically; in deciding whether to preliminarily enjoin a merger, the courts give heavy consideration to whether the antitrust agency will eventually be able to prove its case at trial.

If the reviewing antitrust agency determines that the transaction may harm competition in a relevant market, such issues must be resolved before the transaction can proceed. In the electric sector, FERC (not the antitrust agencies) generally takes the lead in addressing any anti-competitive issues presented by a proposed transaction. Under the HSR Act, however, merging entities in such a situation often enter into a consent order with an antitrust agency under which the acquiring company agrees to divest a portion of its existing assets or of the assets it will be acquiring.

Finally, individual state regulatory bodies often must approve an acquisition or divestiture of utility companies or assets in that state, pursuant to state law. The procedures and standards for that review vary from one state to another.

28 Prevention and prosecution of anticompetitive practices

Which authorities have the power to prevent or prosecute anticompetitive or manipulative practices in the electricity sector?

The federal agencies that are primarily concerned with anticompetitive practices in the wholesale electricity sector are FTC, DOJ, FERC and the Commodity Futures Trading Commission (CFTC). State utility commissions and attorneys general ordinarily, but not exclusively, focus on such practices in the retail electric sector.

29 Determination of anticompetitive conduct

What substantive standards are applied to determine whether conduct is anticompetitive or manipulative?

FERC enforces compliance with tariffs or contracts in an effort to assure service is 'non-discriminatory' and charges are 'just and reasonable'. EPAct 2005 amended the FPA to prohibit buyers or sellers of interstate wholesale electric energy or transmission services from knowingly providing a federal agency with false information or from using any manipulative or deceptive device or contrivance in violation of FERC regulations. Further, a seller of electric products and services applying for market-based rate authority must show it does not possess unmitigated market power in the affected markets.

The CFTC has authority to ensure futures and options markets operate fairly and orderly under the Commodity Exchange Act. This authority overlaps FERC's authority to the extent conduct involves trading and hedging activities of electricity and similar commodities. On 21 July 2010, President Obama signed into law the Dodd–Frank Wall Street Reform and Consumer Protection Act, which directs an overhaul of the US financial regulatory system and confers additional authority to the CFTC. Although the CFTC is still in the process of developing regulations, it has issued a rule exempting RTO and ISO system operators from CFTC regulation. The exemption covers certain financial transmission rights, energy transactions, and forward capacity transactions sold pursuant to an RTO or ISO governing tariff if the transaction is related to the allocation of physical electric energy and carried out by an 'appropriate person', ie, those individuals or entities meeting certain sophistication or financial thresholds. However, the exemption does not apply to the CFTC's anti-fraud or anti-manipulation regulation.

The FTC has concurrent authority, pursuant to the FTCA, to enjoin 'unfair methods of competition'. The FTC's authority extends to acquisitions that tend to substantially lessen competition, as well as to price discrimination and other anti-competitive actions. The FTC also has authority to directly protect consumers from any 'unfair or deceptive' practice, defined as an act 'that causes or is likely to cause substantial injury to consumers that is not reasonably avoidable by consumers themselves and not outweighed by countervailing benefits to consumers and to competition'.

The FTC and the DOJ have concurrent power to prosecute violations of the other federal antitrust statutes. States and private parties may also bring actions under federal and state antitrust laws. This was recently reaffirmed by the US Supreme Court, which ruled that the federal Natural Gas Act does not pre-empt state antitrust laws, meaning a private party may bring state antitrust claims for alleged pipeline price manipulation.

Section 1 of the Sherman Act prohibits 'agreements, conspiracies or trusts in restraint of trade'. Under the Sherman Act, some agreements (such as agreements of horizontal price fixing or territorial division) are determined to be per se illegal because the conduct of the agreement is overwhelmingly considered to be harmful. Other agreements that might be, but not necessarily, harmful are analysed under the rule of reason, requiring the plaintiff to prove that the agreement caused economic harm. Section 2 of the Sherman Act prohibits monopolies, specifically targeting anticompetitive conduct that creates or maintains market domination. The Clayton Act bars certain types of price discrimination and tying arrangements when they lessen competition.

30 Preclusion and remedy of anticompetitive practices

What authority does the regulator (or regulators) have to preclude or remedy anticompetitive or manipulative practices?

If a proposed tariff or contract is found by FERC to be unjust and unreasonable, FERC will order mitigating revisions. FERC may require the sellers to refund the difference between the rates collected and the rates FERC determines are just and reasonable, beginning with the date the investigation was initiated. In order for a seller to be eligible to sell wholesale energy at market-based rates (instead of at cost-based rates), it must demonstrate to FERC that it and its affiliates lack (or have mitigated) market power. FERC can refuse to grant market-based rate (MBR) authority to an applicant that fails to show it does not possess market power. At any point, FERC has the authority to revoke market-based rate authority upon a determination that the seller possesses market power. In addition, FERC maintains the ability to revoke prior grants of MBR authority if the company's behaviour involves fraud, deception or misrepresentation.

Once initially granted MBR authority, sellers are required to take additional measures in order to maintain the market-based rate authority. For example, sellers that control more than 500MW of generation in any region of the country must file updates every three years in order to demonstrate their continued lack of market power. Also, such an electrical provider must notify FERC within 30 days of any significant change that might affect its qualification for market-based rates. Further, FERC has enacted market behaviour rules in order to govern sellers' conduct in the wholesale market. These rules address unit operations, communications, price reporting and record retention.

On an ongoing basis, FERC has authority under section 206 of the FPA to regulate markets and protect them against anticompetitive activity. Section 206 grants FERC authority to initiate an investigation, upon its own motion or third-party complaint, regarding whether any rate charged by a utility for any transmission or sale is 'unjust, unreasonable, unduly discriminatory or preferential'.

Update and trends

As noted in question 5 above, in 2015, the EPA issued its Clean Power Plan (CPP), a series of regulations intended to reduce carbon dioxide emissions from existing 'stationary sources', most notably, coal-fired power plants. However, the CPP is currently the subject of a highly contentious court challenge that ultimately will likely be decided by the US Supreme Court. Challenges against the CPP were brought almost immediately from several states and industry participants opposing the new requirements. Currently, the challenges have been consolidated into an appeal now pending before the US Court of Appeals for the DC Circuit. However, in a rather unprecedented move, the US Supreme Court agreed to stay the regulations from going into effect while the challenges are being decided, a move that some interpreted to suggest the US Supreme Court was sceptical of the CPP's legality. Further complicating matters, however, was the subsequent passing of one of the Justices on the US Supreme Court (coming only mere days after the Justice voted with the 5-4 majority to issue the stay) and the political stalemate that has ensued over an appointment to fill the vacancy. It now appears the US Congress will not consider a nominee until after the November 2016 presidential election, meaning the fate of the CPP could depend on whichever party wins the election and is able to nominate a replacement Justice. In yet another development, the US Court of Appeals for the DC Circuit recently took the unusual step of deciding that all nine judges on the court would hear the initial appeal, a break from the traditional process in which a three-judge panel first hears an appeal, with the losing party then having the option to request rehearing before the full court. The US Court of Appeals for the DC Circuit acted on its own, the effect of which essentially is to expedite the appeals process. Should the case reach the US Supreme Court still with one vacant seat, a 4-4 decision would uphold whatever ruling is issued by the US Court of Appeals for the DC Circuit. In addition to the uncertainty of the legality of the CPP, the fact that the rule is on hold while the court process plays out will impact the timeline for states to submit their compliance plans. For instance, as proposed, the CPP called for states to submit their initial plans by September 2016, but a decision from the US Supreme Court is not likely to come until some time in 2017 or even 2018.

Assuming the CPP survives the current court challenge, the CPP stands to have a significant impact on electricity generation in the US. The near-term impact of the CPP will be the reduction and retirement of coal-fired generation and an increase in natural gas-fired generation, in turn increasing the demand for natural gas resources. As a result, natural gas prices could rise and there will be opportunities for the development of supporting infrastructure, such as extraction or transportation. Moreover, utilities will need to devote additional investment capital toward developing new generating capacity to replace the loss from the retirement of coal-fired plants. However, there may be some offset by a decreased demand in electricity as consumption becomes more efficient through technological advancements. Finally, the loss of coal-fired generating capacity raises reliability concerns, although FERC has pledged to work with the EPA and other federal agencies to ensure that reliability issues are addressed as the CPP is implemented. Long term, the CPP is intended to ultimately drive development of variable energy resources, such as wind and solar generation. Variable resources entail reliability concerns as well. In general, as government environmental policy shifts generation capacity away from coal-fired generation toward natural gas-fired and variable resources, grid operators must be prepared to meet the challenges that will arise from having to adapt to decreased capacity and with the inherently variable nature of those resources. It will also be incumbent on regulators at both the state and federal level to develop emissions regulations with reliability concerns in mind.

Gas-electric coordination

There has been increased focus on coordination between the gas and electric industries as the share of gas-fired generation in the US generation mix has increased. On 16 April 2015, FERC issued a final rule revising its regulations to better coordinate the scheduling of wholesale natural gas and electricity markets to adjust for the increased reliance on natural gas for electric generation, a trend that is expected to continue. The new regulations are intended to better coordinate the scheduling between the two industries as well as provide additional scheduling flexibility to all shippers on interstate natural gas pipelines. Moreover, individual system operators, such as RTOs and ISOs, have undertaken operational and market actions, such as coordinating information exchange between interstate pipelines, enhancing offer flexibility, and requiring operational information on dual fuel capacity be provided to market operators. The efforts will likely increase as natural-gas fired resources becoming increasing utilised as government environmental policies continue to result in the loss of coal-fired generation capacity.

Shale gas revolution

Based on current projections, the US is likely to become a net exporter of natural gas by 2017 (www.eia.gov/todayinenergy/detail.cfm?id=20992), particularly driven by the development of extraction methods from shale gas reservoirs, such as those in Texas, Pennsylvania, and North Dakota. However, many energy-related laws and regulations rest on the assumption the US is a net importer. As a result, a number of US legislators have called for new laws on topics such as the trade deficit, the import and export of natural gas, and the reliance on importing fossil fuels from elsewhere around the world (https://reed.house.gov/press-release/us-set-be-net-exporter-natural-gas).

Demand response

Another area of development concerns 'Demand Response' and whether FERC has the authority to regulate it. Generally, demand response permits the operators of wholesale electricity markets to pay customers for the reduction in electricity consumption and then recoup those payments through adjustment to wholesale rates. To encourage participation in those markets by demand response resources, FERC issued Order No. 745, which required demand response to be compensated on an equivalent basis to wholesale generation. The US Supreme Court recently upheld Order No. 745, ruling that FERC had the authority to regulate Demand Response and the compensation structure was reasonable. The US Supreme Court's decision will allow continued development of regional efforts to create and implement various demand response initiatives, such as those in the PJM region and others.

EPAct 2005 amended the FPA to allow for increases in the maximum penalty amounts for violations of the FPA. FERC is now able to assess civil penalties and fines of approximately $1 million or imprisonment for not more than five years, or both, for wilful and knowing violations, through acts or omissions, of any section of the FPA. Also, EPAct 2005 provides for civil penalties of approximately $1 million per violation per day to be assessed for violations of regulations located in section II of the FPA after notice and the opportunity for a public hearing. While FERC has used its penalty authority sparingly in the past, FERC has been acting more forcefully on enforcement matters pursuant to its expanded authority. In fiscal year 2015, FERC's enforcement division obtained settlements to assess civil penalties in the amount of approximately $26.25 million for violations of the FPA and ordered disgorgement of unjust profits in the amount of approximately $1 million (www.ferc.gov/legal/staff-reports/2015/11-19-15-enforcement.pdf). Since 2007, FERC has assessed almost $645 million in civil penalties and over $302 million in disgorgement (not including several significant pending matters).

The FTCA authorises the FTC to issue 'cease and desist' orders requiring electric utilities to refrain from prohibited unfair trade practices and may assess civil penalties for violations, up to $11,000 per violation per day. Violations of sections 1 and 2 of the Sherman Act may result in fines up to US$100 million for corporations, or by imprisonment of up to 10 years, or both. In addition, under the antitrust acts, private parties are able to bring enforcement actions to address unfair trade practices in the electric sector, including tying arrangements, price squeezes and denial of access to essential facilities.

International

31 Acquisitions by foreign companies

Are there any special requirements or limitations on acquisitions of interests in the electricity sector by foreign companies?

Several current or former US utilities are or have been owned by foreign parties. New investors should be mindful of current US regulatory and political attitudes toward foreign investment in the energy sector. The Exon-Florio amendment to the Defence Production Act authorises the president of the US to block a transaction of foreign persons gaining control of a US business that threatened national security. The Foreign Investment and National Security Act of 2007 (FINSA) confirms the

broad range of energy and infrastructure transactions that may be covered, and intensifies the screening for certain transactions.

Exon-Florio is administered by the Committee on Foreign Investment in the US (CFIUS), an inter-agency committee chaired by the secretary of the Treasury and including the attorney general and secretaries of homeland security, commerce, defence, state and energy. CFIUS is responsible for reviewing proposed foreign investment transactions and making recommendations to the president.

FINSA confirms that Exon-Florio applies to acquisitions of 'critical infrastructure'. This term has been defined as systems or assets so vital to the US that the incapacity or destruction of it would have a debilitating impact on national security. While the definition has been applied to ports and oil companies, it is now clear that electricity generating, transmission or distribution facilities would be considered critical infrastructure.

FINSA formalises many CFIUS practices, including explicitly encouraging parties to notify and engage with CFIUS regarding a transaction in order to seek CFIUS clearance. FINSA provides for a 30- 45-day CFIUS review of covered transactions; reviews are mandatory for covered transactions involving foreign government-controlled entities.

For nuclear-generating facilities, the Atomic Energy Act generally bars the issuance of a reactor licence to a non-US person. For example, the NRC Atomic Safety and Licensing Board recently denied a licence for a proposed nuclear project in Maryland because it is 100 per cent owned by a foreign entity. Situations where a foreign company would be able to hold a licence include when it owns up to 50 per cent of an entity whose officers and employees responsible for special nuclear materials are US citizens, or when it owns a US subsidiary that will hold the licence, the foreign company's stock is 'largely' owned by US citizens, and the subsidiary's officers and employees responsible for special nuclear materials are US citizens. The NRC has indicated it may relax this requirement in the future, as in May 2015 it ordered Commission staff to develop a regulatory guide that will use a 'graded approach' to assess and mitigate potential foreign ownership, control, or domination of US nuclear facilities (www.nei.org/News-Media/News/News-Archives/NRC-to-Use-Graded-Approach-on-Foreign-Ownership). In May 2016, the NRC issued a draft regulatory guide describing the acceptable methods for determining when a nuclear facility is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government (https://www.federalregister.gov/articles/2016/05/26/2016-12546/foreign-ownership-control-or-domination-of-nuclear-power-and-non-power-production-or-utilization).

32 Authorisation to construct and operate interconnectors

What authorisations are required to construct and operate interconnectors?

No electric transmission lines crossing the US international border may be constructed or operated without a presidential permit. The secretary of energy (through the DOE's Office of Electricity Delivery and Energy Reliability) will issue a permit upon determining that the project is in the public interest. The two primary criteria used to determine if a proposed project is consistent with the public interest are the impact the proposed project would have on the operating reliability of the US electric power supply and the environmental consequences of proposed projects. The DOE must also obtain concurrence from the secretary of state and the secretary of defence before issuing a permit.

The FPA allows exports of electric energy unless the proposed export would impair the sufficiency of electric power supply within the US or would impede or tend to impede the coordinated use of the US power supply network. Based on these guidelines from the FPA, DOE (again through the Office of Electricity Delivery and Energy Reliability) grants authorisation to export electric energy if it determines that sufficient generating resources exist such that the exporter could sustain the export while still maintaining adequate generating resources to meet all firm supply obligations and the export would not cause operating parameters on regional transmission systems to fall outside of established industry criteria. The DOE must also comply with the National Environmental Policy Act (NEPA) before granting authorisation to export electric energy. No federal permit is required to import electricity into the US, and no federal permit is required to sell imported electricity, if the sale at issue takes place outside of interstate commerce.

33 Interconnector access and cross-border electricity supply

What rules apply to access to interconnectors and to cross-border electricity supply, especially interconnection issues?

Federal regulation of a sale for resale in interstate commerce of imported or domestic electricity will apply if title to the electricity changes hands at a point within the US. In this case, the seller must apply to FERC for approval of the rates, terms and conditions of the sale. There are two exceptions. First, in the event the sale for resale in interstate commerce of imported or domestic electricity is conducted by a US government-owned, US state-owned or US municipally owned utility, or is conducted by a US Department of Agriculture Rural Utilities Service-financed rural electric cooperative, there will be no FERC regulation of the sale. Second, there will be no FERC regulation of retail sales of imported or domestic electricity. The state PUC may regulate the retail sales of electricity within its border.

Transactions between affiliates

34 Restrictions

What restrictions exist on transactions between electricity utilities and their affiliates?

In October 2008, FERC issued Order No. 717, which adopted significant changes to its standards of conduct governing relations between transmission providers for both electricity and natural gas and their affiliates. The rule concentrates on three principles as the way to prevent affiliate abuse. The main elements of this are the independent functioning rule, the no-conduit rule, and the transparency rule.

WHITE & CASE

Daniel A Hagan **dhagan@whitecase.com**
Jane Rueger **jrueger@whitecase.com**
John Forbush **john.forbush@whitecase.com**

701 Thirteenth Street NW
Washington
DC 20005
United States

Tel: +1 202 626 3600
Fax: +1 202 369 9355
www.whitecase.com

Independent functioning rule
FERC eliminated completely the concept of energy affiliates as well as the corporate separation approach to separating grid operators from marketing affiliates, two aspects of the old Order No. 2004 rules that had proved difficult to understand and enforce. Instead, the new rules are based on the employee functional approach that was first utilised in industry restructuring orders from the 1980s and 1990s. This approach focuses on an employee's actual function on the job rather than the employee's position in the organisation chart. Thus, whereas under the former rules any employee of a marketing or energy affiliate was prohibited from interacting with transmission function employees, Order No. 717 limits the category of employees who must function independently from transmission operators to those who are actively and personally engaged on a day-to-day basis in marketing functions. By narrowing the focus in this manner, the rule provided needed clarity to supervisors, managers, and executives and allowed the free flow of the type of information needed for long-term planning.

No-conduit rule
The no-conduit rule prohibits a transmission provider from using anyone as a conduit for the disclosure of non-public transmission function information to its marketing function employees. This rule covers both information and employees not falling within the scope of the independent functioning rule. For example, although there is no general requirement that lawyers employed by transmission providers need to function independently of the company's marketing function employees, lawyers must, nevertheless, avoid serving as a conduit for passing non-public transmission information to marketing function employees.

Transparency rule
Order No. 717 is also designed to promote transparency through the collection, reporting, and public posting requirements of information that may alert interested persons and FERC to potential acts of undue preference.

Reliability exception
Reflecting the importance of reliability, the order makes an exception to the independent functioning rule and the no-conduit rule for the exchange of information 'pertaining to compliance with reliability standards approved by the Commission' and information 'necessary to maintain or restore operation of the transmission system or generating units, or that may affect the dispatch of generating units'.

35 Enforcement and sanctions

Who enforces the restrictions on utilities dealing with affiliates and what are the sanctions for non-compliance?

FERC has authority to impose penalties in the amount of US$1 million per day per violation under sections 316 and 316A of the FPA or to use its rate authority to remedy affiliate abuse (as discussed more fully in question 29). Mechanisms for enforcement and remedies for violations of states' affiliate rules vary.

Getting the Deal Through

Acquisition Finance
Advertising & Marketing
Air Transport
Anti-Corruption Regulation
Anti-Money Laundering
Arbitration
Asset Recovery
Aviation Finance & Leasing
Banking Regulation
Cartel Regulation
Class Actions
Commercial Contracts
Construction
Copyright
Corporate Governance
Corporate Immigration
Cybersecurity
Data Protection & Privacy
Debt Capital Markets
Dispute Resolution
Distribution & Agency
Domains & Domain Names
Dominance
e-Commerce
Electricity Regulation
Energy Disputes
Enforcement of Foreign Judgments
Environment & Climate Regulation
Equity Derivatives
Executive Compensation & Employee Benefits
Financial Services Litigation
Fintech
Foreign Investment Review
Franchise
Fund Management
Gas Regulation
Government Investigations
Healthcare Enforcement & Litigation
High-Yield Debt
Initial Public Offerings
Insurance & Reinsurance
Insurance Litigation
Intellectual Property & Antitrust
Investment Treaty Arbitration
Islamic Finance & Markets
Labour & Employment
Legal Privilege & Professional Secrecy
Licensing
Life Sciences
Loans & Secured Financing
Mediation
Merger Control
Mergers & Acquisitions
Mining
Oil Regulation
Outsourcing
Patents
Pensions & Retirement Plans
Pharmaceutical Antitrust
Ports & Terminals
Private Antitrust Litigation
Private Banking & Wealth Management
Private Client
Private Equity
Product Liability
Product Recall
Project Finance
Public-Private Partnerships
Public Procurement
Real Estate
Restructuring & Insolvency
Right of Publicity
Securities Finance
Securities Litigation
Shareholder Activism & Engagement
Ship Finance
Shipbuilding
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