GLOBAL RENEWABLE ENERGY Guide

2014

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2014

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Published by
Çakmak Yayınevi ve Medya Limited Şirketi
Piyade Sokak, No. 18 06650 Çankaya, Ankara, Turkey

Printed by
Sözkesen Matbaacılık Tic. Ltd. Şti., Ankara, Turkey

August 2014, Ankara

ISBN: 978-9944-794-17-6
ISBN (e-book): 978-9944-794-16-9

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FOREWORD

ÇAKMAK PUBLISHING is pleased to publish this 2014 edition of the *Global Renewable Energy Guide*, which has been published annually since 2010.

Global Renewable Energy Guide is designed to provide an overview of applicable legislation and available incentives to renewable energy companies worldwide. It will aid investors, lenders and government agencies in understanding and comparing relevant provisions from different jurisdictions.

The publication maintains a Q&A format with a common questionnaire set by the editors and answered by leading practitioners from 34 jurisdictions around the world.

The following are notable observations from this 2014 edition of the *Guide* regarding the regulatory regime and available incentives for renewable energies in the 34 jurisdictions explored:

- Most of the countries, 19 out of 34, have an independent regulatory authority to supervise and regulate the electricity sector, including renewable energies, while the remaining 15 countries opt for regulation of the electricity sector by a Ministry.

- Most of the countries, 25 out of 34, provide for tax advantages for the generation of electricity from certain or all types of renewable energy sources.

- Purchase guarantees (feed-in tariffs) or similar support mechanisms are available in most of the countries, 27 out of 34.

- The ratio of ensuring a minimum price for the electricity generated by renewable energy companies is high as well (28 countries out of 34 countries).

- In 20 out of the 34 countries, priority for connection to and/or usage of the transmission and/or distribution system is provided for renewable energy companies.

- 11 countries provide for additional incentives for the domestic manufacturing of equipment and materials.

We gratefully acknowledge the contributions of all the authors of this publication, who have been selected for their recognized expertise in the field of renewable energy law, and thank them for making this Guide a reality.

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Editors
Ankara, August 2014

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GENERAL

1. What is the nature and importance of renewable energy in your country?

Austria's energy supply is based on a balanced mixture of energy sources in which the role of renewable energy is significant. Renewable energy supplies around a quarter of Austria's demand for energy, ranking among the top five as to the level of renewable energy use in the European Union. Austria's commitment to non-nuclear energy as well as hydro and biomass reserves and Austria's traditional environmentally friendly policy have encouraged substantial exploitation levels of renewable energy resources.

Austria's most important energy related environmental issue is its commitment to the Kyoto protocol. The federal parliament ratified the protocol in March 2002. Under the EU's burden-sharing system and relevant EU Directives, Austria put into national legislation the promotion of renewable energy. The necessary framework for obtaining carbon credits has been adopted in domestic legislation. To meet the common target of the EU – by 2020 renewable energy should account for 20% of the EU's final energy consumption – Austria needs to increase its production and use of renewable energy in electricity, heating and cooling and transport until 2020 up to 34%.

In the sector of electricity generating renewable energy sources, in Austria traditionally large hydropower plays a significant role. Also the use of biomass and wastes is particularly high. With a share of 70% of electricity production from renewable energy sources ("RES-Electricity") of gross electricity consumption in 1997, Austria was the leading EU Member State for many years. More recently, a continual increase in the total energy need has taken place, and a drop of the share of RES-Electricity has been noticed. Recently, Austria enhanced the promotion of renewable energy amending the Austrian Green Electricity Act (*Ökostromgesetz*) by implementing financial incentives for generating more electricity on the basis of renewable energy.

2. What is the definition and coverage of renewable energy under the relevant legislation?

The Austrian Green Electricity Act covers the promotion of power generation on the basis of renewable energy sources. The Austrian Green Electricity Act of 2002 was amended in 2006 and 2008 resulting in a revised promotional framework for new RES power plants. On 1 July 2012, a substantially amended new Green Electricity Act 2012 entered into force. Summarizing, the Green Electricity Act 2012 (i) defines new targets as to the expansion of RES-Electricity to be achieved by 2020; (ii) provides for the reduction of "waiting periods" for the promotion of wind energy, photovoltaic and hydro power; (iii) implements a substantial increase (approx. 90%) of the annual subsidy volume for the promotion of RES-Electricity generated by new RES-Electricity facilities (*Unterstützungsvolumen*); (iv) contains measures directed at the degression of feed-in tariffs; (v) establishes administrative improvements for RES-Electricity; and (vi) involves changes in the financing support scheme. Whereas pre-established statutory provisions still apply to the existing plants, the current Austrian Green Electricity Act applies, in general, to the following power plants:

- Power generating facilities (*Ökostromanlagen*) which are run on the basis of wind power, photovoltaic, solid and liquid biomass and biogas, geothermal energy, certain small scale hydro plants. Specific hybrid and mixed combustion plants (*Hybridanlagen und Mischfeueranlagen);*

- Subsidies for investments in "small scale hydro power plants" (maximum capacity of up to 10 MW);

- Subsidies for investments in "medium scale hydro power plants" (maximum capacity exceeding 10 MW up to and including 20 MW);

- Subsidies for investments in power plants on the basis of waste lye.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The promotion of RES-Electricity in Austria is regulated in the Green Electricity Act.

Green electricity facilities that are recognized as such under the Green Electricity Act enjoy a guaranteed off-take of their generation by the Green Electricity Settlement Centre (*Abwicklungsstelle für Ökostrom AG [OemAG], Ökostromabwicklungsstelle*) at supported feed-in tariffs (usually set annually by the Federal Minister of Science, Research and Economics in agreement with the Federal Minister of Agriculture and Forestry, Environment and Water Management as well as the Federal Minister of Labor, Social Affairs and Consumer Protection). Facilities eligible for official recognition are: (i) facilities run exclusively on basis of RES; and (ii) hybrid and mixed combustion plants.

Feed-in tariffs are guaranteed for green electricity technologies for a period of 13 to 15 years – depending on the RES-Electricity technology – starting from the date on which the Green Electricity Settlement Centre off-takes RES-electricity. After this period, the Green Electricity Settlement Centre is obliged to offer the operator of RES-Electricity facilities to off-take the electricity for an indefinite period of time at the prevailing market prices, less the cost of balancing energy.

4. What are the principal regulatory bodies in the renewable energy sector?

As a matter of statutory obligation, the Green Electricity Settlement Centre purchases and allocates the electricity generated in officially recognized RES-Electricity facilities at the guaranteed feed-in tariffs to the electricity traders supplying end customers according to valid market rules. Whereas in the past, the electricity traders were obliged to purchase the electricity allocated to them at annually adjusted settlement prices under the previous Green Electricity Act (which were normally above the market prices), under the Green Electricity Act 2012 the electricity is essentially allocated to the traders at current listed market prices for electricity. Besides, the traders have to pay the price for the certificate of origin (*Herkunftsnachweis*) for RES-Electricity set by E-Control, the competent regulator, on an annual basis.

The investment allowances (investment subsidies) granted to the constructing or renovating entity of certain hydro power plants, Combined Heat and Power ("CHP") plants and plants on basis of waste lye under the Green Electricity Act amount to a certain percentage of the investment costs and are processed by the Settlement Centre of Investment Allowances (*Abwicklungsstelle für Investitionszuschüsse*).

5. What are the main permits/licenses required for renewable energy projects?

The main permits required for RES-Electricity generating facilities concern environmental law, local building laws and energy laws.

The construction of a power plant may be subject to environmental impact assessment ("EIA") permitting procedures under the Federal Environmental Impact Assessment Act (*Umweltverträglichkeitsprüfungsgesetz 2000*; the "EIA Act"). The types of renewable energy power plants that are subject to an EIA permitting procedure include:

- wind power projects with a total capacity of at least 20 MW or at least 20 wind turbines (in certain sensitive regions at least 10 MW total capacity or 10 wind turbines);
- hydro power plants with a maximum capacity of at least 15 MW (or under specific circumstances 10 MW) or 2 MW in case of power plant chains; and
- certain thermal facilities, e.g., combining waste management with power generation.

The EIA procedure constitutes a combined permitting procedure that replaces other applicable regulatory permitting procedures. Procedural rules under the EIA Act provide for an extensive participation by the general public including environmental pressure groups.

If no EIA is necessary, other permits under federal or local laws may be required, such as a water use permit, issued by the relevant district authority or, under specific circumstances, the relevant provincial governor may be required.

Setting up a power generating facility will in most cases require a permit under applicable local building laws. Building laws fall within the sole competency of the federal provinces of Austria. Therefore, regulations regarding the construction and operation of a building vary across the provinces of Austria. In general, a hierarchy of provincial zoning and construction plans determines the sites on which a power plant may be set up. Provincial building laws contain rules regarding the construction of the building and the administrative permitting procedure. The competent authority in the permitting procedure is usually the mayor of the relevant municipality. This decision is subject to appeal to the municipal council in most of the federal provinces. In some federal provinces (e.g., Tyrol), commencing from 1 January 2014 such decision is subject to appeal to the relevant Provincial Administrative Court (*Landesverwaltungsgericht*). According to the general administrative procedural rules, the authorities have to issue a decision within six (6) months after submission of an application.

The legislative competency in matters of electricity is shared between the Federal State (*Bund*), which has competence for enacting the framework legislation in the electricity sector, and the Federal Provinces (*Länder*) of Austria, which are responsible for the implementing legislation. As a general rule, the implementing provincial electricity statutes provide for a permitting procedure for the construction and operation of electricity generating facilities on the basis of objective, transparent and non-discriminatory criteria, relating only to the facility. Usually, an electricity permit will only be issued if the construction and operation of the power plant will not negatively affect the life and health of human beings and does not constitute an unacceptable nuisance to the neighbors of the facility. As to RES-Electricity plants, all provincial electricity statutes provide for a facilitated permitting procedure or a notification requirement for power generating facilities based on renewable energy sources (up to a certain maximum capacity). Detailed technical criteria determine when the facilitated permitting procedure will apply, depending on the capacity of the facility, the type of energy

source and other relevant criteria. Such facilitated procedural rules, which vary from province to province, might provide for a reduced involvement of the general public or a shortened decision period for the administrative authority (e.g., three (3) months rather than six (6) months as stipulated by general rules of administrative law). Such facilitated permitting procedures under the provincial electricity statutes will only be applicable if the power generating facilities are not subject to the permitting procedure under different regulatory regimes, such as the commerce and industry regulations, water laws, etc.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

For the generation of electricity on the basis of RES, no tax incentives are available. There are tax rebates for transport and heat biofuels:

- If pure biofuels are used, no mineral oil tax applies;
- Gas containing at least 4.6 % of biogenic substances and a maximum sulphur content in the amount of 10 mg/kg: EUR 482 (instead of EUR 515);
- Diesel containing at least 6.6 % of biogenic substances and a maximum sulphur content in the amount of 10 mg/kg: EUR 397 (instead of EUR 425).

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

According to the Green Electricity Act, the purchase of the RES-Electricity is guaranteed via mandatory contracting with the Green Electricity Settlement Centre at standardized feed-in tariffs.

Initially, power generating facilities using RES have to be approved as green electricity facilities by the Governor of the Federal Province where the facility is located. Upon this approval, electricity generated in such facilities benefits from a purchase guarantee from the Green Electricity Settlement Centre at pre-determined prices (guaranteed feed-in tariffs) for a certain period of time. The feed-in tariffs are set by the Federal Minister of Economics in agreement with the Federal Minister of Agriculture and Forestry, Environment and Water Management as well as the Federal Minister of Labor, Social Affairs and Consumer Protection on an annual basis (or more often).

In addition, the Green Electricity Act provides for the possibility of investment allowances for certain hydro power facilities and new CHP plants using fossil fuels.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

According to the Green Electricity Act, feed-in tariffs are guaranteed for a period between 13 and 15 years depending on the RES-Electricity technology. After expiry of the mandatory contracting period, the Green Electricity Settlement Centre is obliged to offer to the operator of the RES-Electricity facility to purchase the electricity at the market prices then prevailing less the costs of balancing energy.

The revenues emanating from the sale of green energy to the electricity traders provide a part of the funds financing the support for RES-Electricity. The main financing of the green electricity support system is, however, provided by the Green Energy Allowance (*Ökostrompauschale*) and the Green Energy

Promotion Contribution (*Ökostromförderbeitrag*), both eventually borne by the customers. As a general rule, under the Austrian system, customers bear the main financial burden.[1]

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Austria has ratified the Kyoto Protocol as an Annex I party to the United Nations Framework Convention on Climate Change ("UNFCCC"). The necessary framework for obtaining carbon credits has been implemented under the Environment Support Act (*Umweltförderungsgesetz*). The implementation of the project-related instruments (Joint Implementation ("JI") and the Clean Development Mechanism ("CDM")) is laid down in the Environment Support Act and the Austrian JI-/CDM-Program. The Directive for the Austrian JI-/CDM-Program contains detailed regulations regarding the purchase of Emission Reduction Units within the JI- and CDM-mechanism.

The Republic of Austria has appointed the consulting firm *Kommunalkredit Public Consulting GmbH* ("KPC") as the central managing coordinator for the purchase of Emission Reduction Units from JI - and CDM-projects as well as Green Investment Schemes ("GIS") on behalf of the Austrian Minister of Agriculture and Forestry, Environment & Water Management. As of 2013, KPC has concluded Emission Reduction Purchase Agreements for the purchase of carbon credits from no less than 76 JI-/CDM-projects. These projects constitute a total volume of up to 71 million metric tons of carbon dioxide and include, for instance, landfill gas projects, wind farm projects, hydro power projects and biomass plants.

The Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009, amending Directive 2003/87/EC to improve and extend the greenhouse gas emission allowance trading scheme of the Community, has been implemented by the Emission Trading Act 2011 (*Emissionszertifikategesetz 2011*).

10. Do renewable energy based power plants have priority for connection to the grid?

Neither the Federal Electricity Act (*Elektrizitätswirtschafts- und –organisationsgesetz 2010*) nor the Green Electricity Act contains a provision explicitly stipulating priority access for green electricity producers in general. However, in the event of insufficient transport capacities of the system, Austrian provincial laws have to provide for priority access for the transport of electricity deriving from renewable energy sources and from CHP facilities in order to supply customers. The obligations set out under Regulation 2009/714/EC must be observed.

In principle, the relationship between the distribution grid operator, electricity producers and end customers within a distribution grid system is subject to the principle of mandatory grid connection. As a rule, the operator of a grid system has to grant access to the grid system on the basis of approved terms and conditions and certain tariffs. As a result, customers are entitled to claim access to the grid system for the delivery of electricity under electricity supply contracts concluded with any electricity producer, electricity trader or other electricity undertaking. The operators of electricity undertakings (including RES-Electricity producers) may also claim access to the grid system on behalf of their customers.

1. ErläutRV 1223 BlgNR 24. GP 13; in detail Sections 44 - 49 Green Electricity Act 2012.

Additionally, Austrian provincial laws have to provide for denial of access to the grid system if – under specific circumstances – electricity deriving from: (i) long-distance heating; (ii) environment and resource conserving; as well as (iii) technically and economically reasonable CHP facilities or facilities using renewable energies would be displaced. In practice, the access of RES-Electricity to the grid is guaranteed by the Green Electricity Settlement Centre, which is obliged to purchase the RES-Electricity for the feed-in tariffs, according to the Green Electricity Act.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

The Federal Provinces in Austria may enact individual incentive mechanisms within their legislative competence. Such investment incentives usually relate to the construction of photovoltaic and biogas facilities operated on a private level.

12. What are the other incentives available to renewable energy generation companies?

Next to the Green Electricity Act, the Federal Act on the Climate and Energy Fund (*Klima- und Energiefondsgesetz*) forms the legal basis for subsidies from the Austrian climate and energy fund granted for projects pertaining to energy efficiency and sustainability.

However, apart from the support programme under the Green Electricity Act, there are no major investment incentives for renewable energy producers.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

According to the statistics of the Austrian energy market regulator (*Energie-Control GmbH*) in the year 2012 power plants in Austria generated **72,403 GWh** of thermal and electrical power in total.

- Power generated from Renewable Energy Sources: **54,805 GWh = ca 75,7%:**
  - Hydropower (10% of Small Scale Hydro Power): **47,570 GWh = 65.7%**;
  - Solid Biomass: **2,615 GWh = 3.6%**;
  - Liquid Biomass: **0 GWh = 0.0%**;
  - Landfill Gas and Sewage Gas: **49 GWh = 0.1%**;
  - Biogas: **589 GWh = 0.8%**;
  - Other biogene Power: **1,395 GWh = 1.9%**;
  - Wind Power: **2,461 GWh = 3.4%**;
  - Photovoltaic: **124 GWh = 0.2%**;
  - Geothermal Energy: **1 GWh = 0.0%**;
- Power generated from Fossil Fuels / Derivatives: **17,415 GWh= ca 24,1%**:
  - Hard Coal: **4,400 GWh = 6.1%**;
  - Brown Coal: **0 GWh = 0.0%**;
  - Coal Derivatives: **1,834 GWh = 2.5%**;
  - Mineral Oil Derivatives: **741 GWh= 1.0%**;
  - Natural Gas: **9,651 GWh = 13.3%**;
  - Other Fuels: **789 GWh = 1.1%**;

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GENERAL

1. What is the nature and importance of renewable energy in your country?

In the Republic of Belarus imported energy comprises more than 80% of the energy consumption. Therefore one of the strategic objectives of economic development of Belarus is the decrease of energy imports. The solution to this problem is possible through the enhancement of alternative energy sources and local fuels. Development and effective use of renewable energy sources (hereinafter – the RES) has a fundamental importance since in the short term they represent the real potential of local fuel and energy resources that can be efficiently involved in the economy and favor the rise of the energy security of the country.

This is clearly demonstrated at the legislative level. There are a number of normative acts declaring the general trends of the energy policy of the republic.

The *Directive of the President of the Republic of Belarus of 14.06.2007 No. 3 "Economy and thrift - the main factors of economic security of the state"* among the most important criteria for performance evaluation in state organizations assigns rates of resources economy, increase of local, alternative and renewable energy sources use.

The Concept of Energy Security of the Republic of Belarus defines the goals and objectives for energy security, the main directions of strengthening energy security, including at the expense of increasing non-conventional and renewable energy sources.

It is also necessary to mention the five-years programmes related to renewable energy sources use development.

According to *the Republican Energy Saving Program for 2011 - 2015 years* the strategic activity goal in the field of energy saving for the period until 2015 is to reduce the energy intensity of gross domestic product of Belarus and to increase the share of local energy resources. Goal achievement will be attained, *inter alia*, due to the increase of secondary energy resources, alternative and renewable energy sources in the fuel balance of the republic.

The National Program of Local and Renewable Energy Sources Development sets the main purpose as the growth of value of own energy sources use and development of new tendencies in the sphere of energetic.

Some programs have the dedicated orientation.

Hydropower. *The State program for construction in 2011 - 2015 hydroelectric power in the Republic of Belarus* is approved. Its main purpose is to increase the energy security of the Republic of Belarus by substitution of imported energy resources for renewable energy sources, reducing the environmental burden caused by the activities of the fuel and energy complex. The program provides for construction and reconstruction of the 33 hydroelectric power plants with total capacity of 102.1 MW. The total fuel economy during the commissioning of new hydropower capacity will be 120 thousand tons of equivalent fuel.

Biogas. As a result of *the Program of construction of energy sources, working on biogas for 2010 - 2015 years* implementation 38 biogas plants aggregate electric capacity of 37,9 MW will be put into

operation in the country. This makes it possible to produce annually about 314 million kWh of electricity and to replace imported natural gas in the volume of more than 105 thousand tons of equivalent fuel.

Therefore at present in Belarus energy policy follows the way of own resources developing including renewable energy use.

2. What is the definition and coverage of the renewable energy under the relevant legislation?

According to the Charter of the International Agency for Renewable Energy, ratified by the Republic of Belarus, the term "renewable energy" includes all forms of energy, constantly generated from renewable sources, which, inter alia, include:

- bio-energy;
- geothermal energy;
- hydroelectric power;
- ocean energy, including without limitation, tidal energy, wave energy and ocean thermal energy;
- solar energy;
- wind energy.

In Belarusian law the definitions "non-conventional sources of energy" and "renewable energy sources" are synonymous.

In accordance with *the Law of the Republic of Belarus dated 15 July 1998 No. 190- Z, "On Energy Saving"* non-traditional and renewable energy sources include electrical and thermal energy sources using the energy of rivers, reservoirs and industrial runoff, energy of wind, solar, natural gas reducible, biomass (including wood waste), waste water and solid waste.

According to the Law of the Republic of Belarus dated 27 December 2010 No. 204-Z, "On renewable energy sources" the renewable energy sources (hereinafter - the RES) are the energy of the sun, wind, geothermal, natural water flows, wood fuel and other biomass, biogas and also other energy sources that do not belong to a non-renewable.

This list of RES is not exhaustive. It may be added by any source of energy referred to non-renewable.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

Until recently, the legal regulation of RES in the Republic of Belarus has been fragmentary. The situation has changed after the adoption of *the Law of the Republic of Belarus dated 27 December 2010 No. 204-Z, "On renewable energy sources"* (hereinafter - the Law "On RES"). The Law "On RES" came into force on 5 July 2011. It is the main document that creates a legal base for renewable energy sources development in Belarus.

The Law "On RES" contains basic definitions in the sphere of RES use, a list of the state authorities responsible for RES use control. The Law also defines rights and responsibilities of producers of this type of energy. It establishes the order for setting prices and rates for renewable energy sources and rates for power produced from such sources. The issues of scientific, technological and innovation support are adjusted. A number of economic incentives for producers of the energy are provided. In particular, in the area of pricing it is stipulated the use of multiplying ratios to the tariffs for energy acquired by the government supplying organizations. These tariffs are set by *the Regulation of the Ministry of Economy of the Republic of Belarus of 30.06.2011 No. 100.*

Regulation of the Council of Ministers dated 30 December 2008 No.2044 and Regulation of the State Committee for Standardization dated 27 February 2009 No.10 regulate the question of the labeling imported goods as equipment used for producing energy from non-conventional and renewable energy sources, as well as the procedure for issuing such an conclusion.

Certain provisions of the renewable energy regulation are contained in the *Law of the Republic of Belarus dated 15 July 1998 No. 190-3 "On Energy Saving"*, in particular the definition of the non-traditional and renewable energy sources, the use of renewable energy as one of the principles of public administration in the field of energy efficiency.

There are also numerous mentioned above *state and republican programs*, including energy saving programs, which determine the need for use of energy produced from renewable energy sources.

Issues related to the order of keeping of the State Cadastre of Renewable Energy Sources are regulated by *the Regulation of the Council of Ministers of 24.06.2011 No. 836*, and *the Regulation of the Ministry of Natural Resources and Environmental Protection of 29.08.2011 No. 29*. Also, the Regulation of the Council of Ministers No. 836 establishes the procedure for confirming the origin of energy produced from RES.

Tax benefits regarding energy generation from renewable energy sources are set by the *Tax Code of the Republic of Belarus*.

4. What are the principal regulatory bodies in the renewable energy sector?

Considering the use of renewable energy is a complex area, the state regulation is executed by various state bodies on all levels of authorities.

The President of the Republic of Belarus determines the unified state policy in sphere of RES use.

The Council of Ministers ensures the implementation of the unified state policy. In particular its functions are:

- to establish the procedure for confirming the origin of the energy produced from RES;
- to establish the procedure for conducting the State Cadastre of Renewable Energy Sources and its data use;
- to coordinate the state bodies work;
- to approve state programs.

The State Committee on Standardization of the Republic of Belarus is engaged in realization of state policy and executes:

- monitoring for implementation of state, regional and sectoral programs;
- carrying out works on the development of RES use;
- information, scientific and technical support for production plants for use renewable energy (further – Plants);
- development of state programs in the field of renewable energy sources.

The Ministry of Energy of the Republic of Belarus takes measures to ensure a guaranteed connection of RES energy plants to public networks and the acquisition of energy derived from plants. Also the Ministry participates in the development of state programs in the field of renewable energy sources.

The Ministry of Natural Resources and Environment of the Republic of Belarus is responsible for development and maintenance of the State Cadastre of Renewable Energy Sources, issues certificates confirming the origin of energy, and participates in the development of state programs in the field of renewable energy sources. In addition, the Ministry identifies places suitable for plants location and informs local executive and administrative bodies on the results.

The Ministry of Economy sets tariffs for energy produced from RES and provides protection of producers of such energy from unfair competition. Also the Ministry participates in the development of state programs in the field of renewable energy sources.

The State Committee on Science and Technology of the Republic of Belarus jointly with other state agencies executes and finances research in the sphere of RES use. The Committee is responsible for development of state science and technology programs, its review and approval. Also the State Committee for Science and Technology coordinates the development and innovation issues and plans the training of scientific personnel of higher qualification.

Local executive and administrative bodies participate in the development of state programs in the field of renewable energy sources and within their competence make decisions on:

- the possibility of inclusion of sites of potential plants location in the State Cadastre of Renewable Energy Sources;
- removal and assignment of land plots, as well as the conversion of land to other categories and types for location of Plants.

When developing a scheme of complex territorial organization of administrative units, general plans, town planning projects the executive and administrative bodies have to take into account the information contained in the State Cadastre of Renewable Energy Sources.

The State Cadastre of Renewable Energy Sources is a systematic corpus of data:

- on the facilities and (or) sites for potential and actual placement of plants for RES use;
- on energy in the context of the administrative-territorial units of the Republic of Belarus;
- of background documents;
- on power of the existing plants using RES;
- on issue of electrical and (or) heat energy produced from RES;
- on reduction emissions of pollutants and greenhouse gases into the atmosphere.

As of the date of this publication, the State Cadastre of Renewable Energy Sources database is accessible online through the following link: *http://194.158.214.59:8080/apex/f?p=105:2:2329139532368652:NO*

- The Cadastre is permanently renewed and updated.

5. What are the main permits/licenses required for renewable energy projects?

The only specific permission necessary for production of RES is certificate on the origin of energy. The certificate is issued by the Ministry on Natural Resources and Environment after inspection of the renewable energy plants locations and (or) site of the current installations.

Certificate confirming the origin of energy is valid for ten years from the date of its issuance. The certificate is issued by the Ministry of Natural Resources and Environment of the Republic of Belarus on the base of application, design documentation of the object, project ecological passport and acts of the equipment tests.

The certificate confirms:

- the fact of production, supply and consumption of the energy from the RES sources;
- reliability of information on the energy from RES;
- efficiency of the use of energy from RES;
- reliability of information on the reduction of polluting substances and greenhouse gases emission to the open air.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

According to the Tax Code of the Republic of Belarus there are a number of tax advantages available to renewable energy generation companies:

1) Installation of RES use shall be exempt from value added tax when import into the territory of the Republic of Belarus (article 96).

The basis for exemption is the conclusion on labeling imported goods as the installations of RES use. Such certificate is issued by the State Committee on Standardization of the Republic of Belarus.

2) Land plots occupied by objects and installations on the RES use as well as land plots granted for the period of construction (reconstruction) of objects and installations on the RES use are exempt from land tax (article 194).

3) Reducing ratios are provided for ecological tax in the following cases (article 207):

- for emissions of pollutants into the air, formed during the combustion of biogas and biofuel to generate heat and (or) electric power – 0.5;
- for wastewater discharge into water objects made by heat power stations using non-conventional and renewable energy sources – 0.2.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

According to article 16 of the Law "On RES" producers of energy from RES are guaranteed the right to purchase all proposed energy produced from RES and delivered to the public power grids by state supplying organizations, as well as its payment on the tariffs in accordance with the law.

However in order to conclude a contract on the purchase of energy between the producer of energy from the RES and state supply organization it is necessary to obtain a certificate to confirm the origin of energy. For detailed information please see clause 5.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The Law "On RES" (article 20) provides the procedure for establishing the price of fuel wood, other biomass, biogas used as RES and the tariffs for energy produced from RES.

The state supplying organizations guarantee a minimum price for the electricity generated from renewable energy sources. Tariffs for this energy are established at the level of electricity tariffs for industrial and similar consumers with connected power up to 750 kWA with the use of multiplying ratios. Value of multiplying ratios depends on the type of RES and term of plant use.

The multiplying ratios are used within the first ten years from the date of commissioning of the plant. The next ten years of the operation of plants stimulating ratios are applied.

The amounts of the ratios for electricity produced from the RES are

	Multiplying ratios	Stimulating ratios
Wing energy	1.3	0.85
Natural water flows	1.3	0.85
Wood fuel and other biomass	1.3	0.85
Biogas	1.3	0.85
Sun	3	0.85
Geothermal and other energy sources not belonging to non-renewable	1.3	0.85

Similar terms of multiplying and stimulating ratios are used during commissioning of additional plants as well as increase of plant power by the reconstruction (for the volumes of increased power).

Acquisition costs of energy produced from RES on the mentioned rates are included in the cost price of electricity generation by the state supplying organizations.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

The Republic of Belarus has ratified the Kyoto Protocol. It entered into force in Belarus on 24 November 2005.

On the conference held in Durban the Republic of Belarus has declared on the reduction of greenhouse gases emission for 5-10% in comparison with 1990 for the second-round of Kyoto Protocol.

Belarus is the Annex I Party but do not have first-round Kyoto targets. As for today Belarus is still not a participant of the Annex B. So the deals with carbon credits under international climate agreements may not been made.

At that the Edict of the President of the Republic of Belarus dated 08.12.2010 No. 625 "On some issues of reduction of greenhouse gases" provides with the possibility to make paid transfer of reduction of greenhouse gases emission to the foreign investor.

10. Do renewable energy based power plants have priority for connection to the grid?

Article 21 of the Law "On RES" states that persons who carry out activities on the use of renewable energy are provided with a guaranteed connection of plants to public power grids.

Plants connection to public power grids is made on the basis of the agreement on the purchase of energy between a producer of energy from RES and state supply organization.

According to the Law "On RES" the essential provisions of such agreement are:

- the rights and obligations of the parties;

- settlement procedures;
- the planned volume of energy sales;
- responsibility for the quality of services provided in the frameworks of the agreement.

At the same time state supply organization:

- provides an unimpeded and non-discriminatory identification of the nearest point of public power grids and guaranteed connection of the plants to the point;
- incurs costs related to the modernization of public power grids for the provision of technical connectivity of plant to the nearest point of public power grids;
- sets in agreements on the purchase of energy equal conditions of connection to public power grids for all producers of energy from RES;
- has the right to refuse to connect if the plant does not meet the conditions required for connection to public power grids. The state supply organization shall coordinate the decision to refuse connection with the Ministry of Energy of the Republic of Belarus.

The costs of plant direct connection to the nearest point of public power grids are defrayed by the producers of energy from RES.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

There are no special incentives in Belarus for local manufacturing of equipment or materials used in the construction of renewable energy based power plants.

12. What are the other incentives available to renewable energy generation companies?

Currently there are no other benefits provided to renewable energy generation companies.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

Unfortunately there is no current official statistics on the general value of the generated electricity in Belarus in open access.

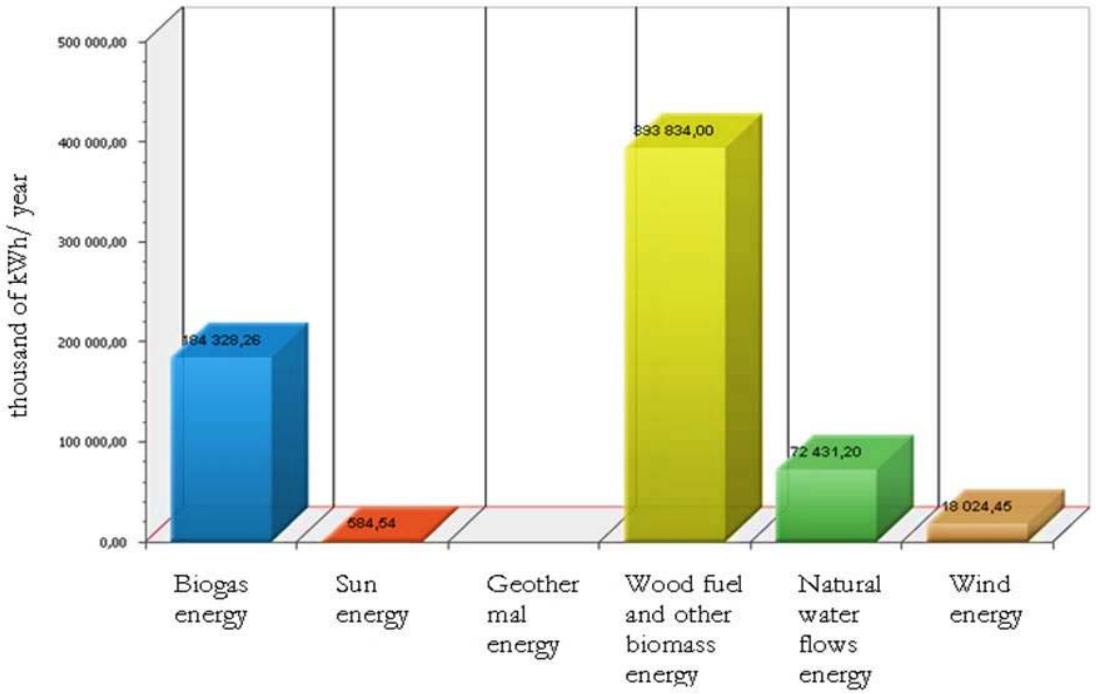
In accordance with the statistics for 2012 the share of renewable energy sources took:

- 5.1% in the gross of fuel and energy resources;
- 8.3% in the gross of boiler and stove fuel.

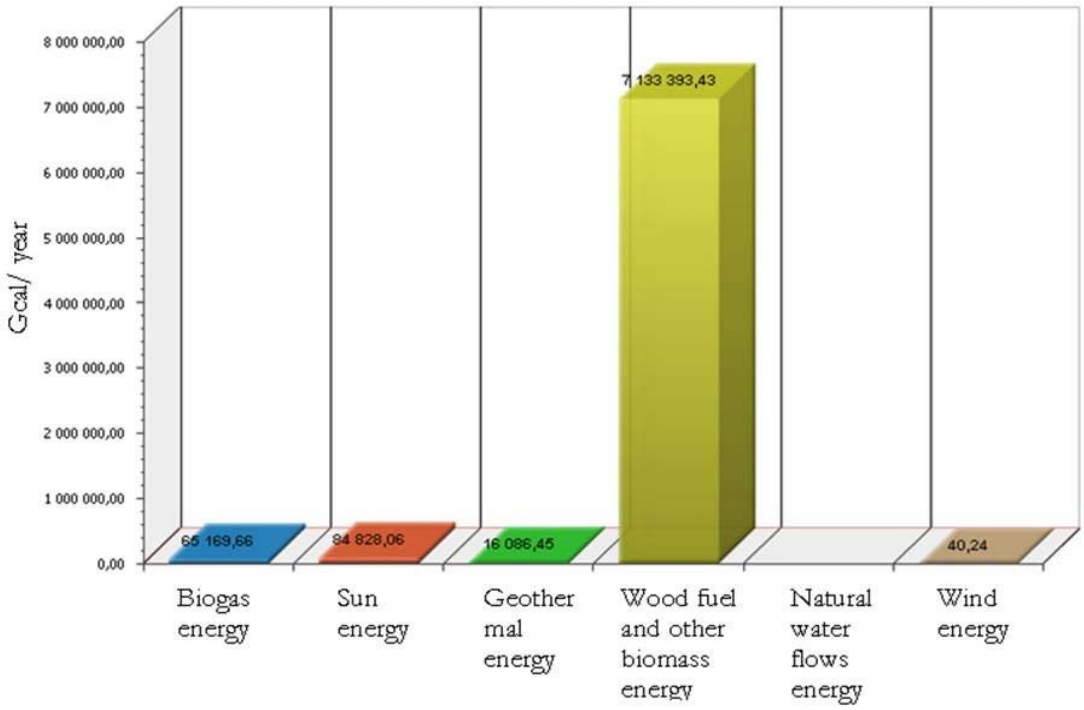
The most wide spread type of RES in Belarus is wood fuel and other biomass. The State Committee on Standardization informs that in January-November of 2012 the share of fuel and energy resources in the balance of in Belarus is 25%.

Please find below tables with the maximum quantity of electric energy and heat energy that may be produced from RES in Belarus as of 15 April 2014. The quantity is specified based on the largest ratio of installed capacity use.

ELECTRIC ENERGY THAT MAY BE PRODUCED FROM RENEWABLE ENERGY SOURCES



HEAT ENERGY THAT MAY BE PRODUCED FROM RENEWABLE ENERGY SOURCES



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GENERAL

1. What is the types and importance of renewable energy[2] in your country?

Following Directive 2009/28/EC on the promotion of the use of energy from renewable sources, Belgium must achieve an overall target share of 13% of energy from renewable sources in its gross final energy consumption by 2020. In 2013 this share was 5.5%.

Belgium is a federal state comprised of three regions (the Flemish Region, the Walloon Region and the Region of Brussels Capital) and three communities (the Flemish, French and German communities). Generally speaking, the communities are responsible for social, cultural, educational and health matters. The regions are competent for economic matters.

In the field of energy, the federal state is responsible for, among other things, the main energy infrastructures (storage, production and transport), nuclear power generation, the equipment program for the production, transmission and distribution of energy, the control of tariffs and fiscal incentives, sustainable development policy, the integration of international obligations, and industrial and technical standards. The federal state is also responsible for all activities in the North Sea. The regions are in charge of the local distribution of energy (lines with a nominal tension of up to 70 kV), the management of natural resources, the development of alternative energy resources (including renewable energy sources), and environmental and town planning. Renewable electricity and heat are thus mainly covered by regional legislation (apart from offshore renewable electricity production).[3]

2. What is the definition and coverage of renewable energy under the relevant legislation?

The definition of renewable energy is different in federal and regional legislation. The federal electricity act defines this concept as "the renewable non-fossil energy sources (wind, solar, geothermic wave, tidal, biomass, hydro, gas of water purification, landfill gas and biogas)". In Flanders the definition includes solar energy, wind energy, hydro-energy, aerothermic energy, energy from oceans, tidal energy, geothermal energy, biogas, landfill gas, sewage gas and biomass. The Walloon legislation uses a definition equivalent to the federal definition. Roughly summarized, this includes:

- Wind energy;
- Solar energy;
- Geothermal energy;
- Biogas;
- Biomass;[4]
- Hydro-electricity.

[1] This overview covers the federal legislation and the Flemish and Walloon legislation. As renewable energy is marginal in the Brussels Capital Region (mainly PV and small CHP), it is not covered here.

[2] Interpreted as electricity and heat from renewable energy sources, and not as renewable energy in the broader sense (such as biofuels).

[3] Biofuel is mainly covered by federal (tax and product standards) legislation.

[4] Biomass from waste must meet special requirements.

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

3.1 Offshore

3.1.1. Location

Wind farm construction is being implemented and further planned on the Belgian continental shelf/exclusive economic zone. The notions of continental shelf and exclusive economic zone are subject to their own specific legal regime, defined in the 1982 United Nations Convention on the Law of the Sea ("UNCLOS"), which has been ratified by Belgium. Under UNCLOS, the continental shelf of a coastal state comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to (i) the outer edge of the continental margin, or (ii) a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, where the outer edge of the continental margin does not extend up to that distance. States which are party to UNCLOS are entitled to determine an exclusive economic zone (the "EEZ") beyond the territorial sea. Belgium determined its EEZ in 1999. It comprises the entire Belgian continental shelf.

Compared to other European countries, Belgium's territorial sea and EEZ are quite small. Nevertheless, the federal government has designated a specific area measuring approximately 200 km² in the EEZ where all offshore wind parks must be located. In this area, 2,000 to 2,400 MW production capacity can potentially be installed. By designating this area in the EEZ, the federal government ruled out any wind projects visible from the coast. Consequently, the minimum distance between the coast and the closest wind turbine park will be approximately 12 nautical miles (22 kilometers).

3.1.2. Domain concession

Under the federal Electricity Act, a domain concession grants the right to construct and operate installations for the production of electricity from water, streams, currents or winds, in the parts of the sea falling under Belgian jurisdiction according to international maritime law. The concept of domain concession in the meaning of the Electricity Act must be interpreted as a *sui generis* concept with no relation to the concept of domain concession for the private use of part of the public domain.

A domain concession is granted for 20 years, starting on the day when the last license, permit or authorization required for the installation(s) under other legislation is obtained. This period may be extended up to a maximum total duration of 30 years.

All seven wind park projects have been granted a domain concession:

Project	Shareholders	Lenders	# Turbines	Estimated production (GWh)	Distance	Location
C-Power	Deme, SIW, Socofe, Nuhma, EDF Energies Nouvelles, RWE	Dexia, Rabobank, KBC, Société Générale	60 (5 MW)	986,1	30 km	Thorntonbank
Belwind	Colruyt, DHAM, PMV, SHV, Rabo Project Equity, Meewind	Dexia, Rabobank, EIB, EKF, ASN	110 (2*55) (3 MW)	1,100	46 km	Bligh Bank
Northwind	Aspiravi, Depret, Electrawinds, Colruyt	BNP Paribas Fortis, Rabobank, ASN, Belfius, ING, EIB, Pension Denmark, KFW, the Norwegian Government	72 (3 MW)	670	37 km	Bank Zonder Naam (Lodewijkbank)
Norther	Eneco, Electrawinds	Not yet known	Not known	Not known	20 km	Thorntonbank
Rentel	Otary (Deme, Electrawinds, Power@Sea, Rent-A-Port, Public sector)	Not yet known	48 (6 MW)	960	31 km	Zuid-West Schaar (between Thorntonbank and Bank with no name)
Seastar[5]	Otary (Deme, Electrawinds, Power@Sea, Rent-A-Port, Public sector)	Not yet known	246 MW		38 km	Between Bank without a name and Bligh Bank
Mermaid	Otary (Deme, Electrawinds, Power@Sea, public sector), Electrabel	Not yet known			60 km	North of Belwind concession

[5] The Minister for Energy withdrew the domain concession for Seastar following a decision by the Council of State to suspend the concession

3.1.3. Construction and operating authorizations

Besides a domain concession, a specific authorization to construct ("construction authorization") and a license to operate ("operating license"), wind turbines in the Belgian EEZ must be obtained pursuant to the Marine Protection Act of 20 January 1999 and the Marine Protection Royal Decree of 7 September 2003. The operating license is granted for 20 years, starting on the day that the applicant is notified that the license has been granted. The construction authorization is granted for the period of time necessary to construct all the installations falling within the scope of the authorization. This period is limited to five years, starting on the day that the applicant is notified that the authorization has been granted. It may be extended once for an additional five years.

3.1.4. Submarine cables

To connect the wind turbines with the onshore grid, submarine electricity cables must be constructed. The legal basis for constructing these cables is the Act of 13 June 1969 and the Royal Decree of 12 March 2002. A specific licence is required to install these submarine cables.

For the onshore connection to the offshore wind park, a building permit to construct the electricity cables is required. Depending on the type of land under which the cables will run, either an administrative authorization or a private agreement will be needed.

3.1.5. Renewable Energy Certificates (RECs)

In accordance with Article 7 of the federal Electricity Act, the federal system of support for renewable energy is set out in the 2002 Royal Decree on Renewable Energy Support Mechanisms. Owners of installations for the production of electricity from renewable energy sources offshore will be granted green certificates by the CREG (Commission for the Regulation of Electricity and Gas, the federal regulatory body) if the installation is connected to the Belgian transmission grid. These green certificates are valid for five years.

3.2. Onshore

3.2.1. Production authorisation

The federal Electricity Act stipulates that the construction and exploitation of an onshore production installation requires prior authorization from the Minister for Energy. The criteria for granting this authorization are set out in a Royal Decree of 11 October 2000. However, no authorization is needed to construct a production installation with a capacity of less than 25 MW.

3.2.2. Building and environmental permits

a. Building permit

A building permit is generally required for the construction of production installations using renewable energy, although some cases (e.g., small PV elements on rooftops) are exempted by regional legislation. The building permit will be granted by the regional town planning authorities if the electricity produced will be injected into the public grid. If the electricity generated by the installation is mainly consumed by the installation's owner, the granting authority will be the municipality.

Building permits are linked to the property concerned, and can thus be freely transferred as accessory to the property to which they relate.

b. Environmental permit

Except for small PV installations, an environmental permit is required for the operation of an installation using renewable energy. Depending on the power of the installation, the authority granting the permit is either municipal or provincial. In both the Flemish and Walloon Regions, a permit may be granted for a maximum of 20 years. The

holder of a permit may transfer it to someone else. Such transfer must be notified to the authority which granted the permit.

c. Link between environmental and building permits

In Flanders, in some exceptional cases where the same municipality grants both the building and the environmental permit, the application may be filed in a single document. The Flemish region has recently adopted such single permit procedure (*omgevingsvergunning*).

Under Walloon town planning and environmental law, a single permit (*permis unique*) covers both the construction and the operation of projects (building permit and environmental/operating permit).

3.2.3. Renewable energy certificates

a. Flemish Region

The Flemish Energy Decree of 2009 sets out the framework supporting the production of electricity and energy from renewable energy sources in the Flemish Region. This system was substantially modified in 2012.

Producers of electricity based on renewable energy sources may receive green certificates from the VREG, the Flemish energy regulator, for electricity generated in the Flemish Region from the following renewable energy sources:

- Solar;
- Wind;
- Tides and waves;
- Geothermal;
- Biogas, landfill gas and sewage gas;
- Biomass.

For installations constructed before 1 January 2013, a green certificate confirms that 1000 kWh of electricity have been generated from a renewable energy source. They are valid for ten years from issue. For installations constructed and operational after 1 January 2013, a green certificate is issued for 1000 kWh electricity produced from a renewable energy source, multiplied by a banding factor. The banding factor depends on the type of installation and the project category. They are valid during the depreciation period. Green certificates are calculated on the basis of the net electricity produced, measured before injection into the grid.

b. Walloon Region

The Walloon Electricity Decree of 2001 sets out the framework supporting the production of electricity and energy from renewable energy sources in the Walloon Region.

A producer of electricity generated from renewable energy sources may obtain green certificates if its production site has been issued a certificate guaranteeing origin by an approved inspection agency. A green certificate is awarded for a number of kWh produced corresponding to one MWh, divided by the level of carbon dioxide savings (456 kg of CO_2). For a wind turbine, a green certificate is awarded for each MWh produced, because wind turbines save 100% of carbon dioxide compared to a conventional CCTG installation. Green certificates are awarded for electricity consumed by the producer and the electricity injected into the grid or transmitted by means of direct lines. They are calculated on the basis of the net electricity produced, measured before injection into the grid.

The right to obtain green certificates is limited to fifteen years from the start of the production installation's operations. Green certificates are valid for five years from issue.

3.3. Access and connection to the electricity grids

The regulation of connection and access to the grids depends on the grid's tension level. The (federal) transmission grid (> 70 kV) is regulated by federal law. The distribution grids are regulated by regional law. The procedures and conditions are set out in various technical regulations which contain lists of the technical requirements and minimum standards any installation must fulfil in order to obtain connection and access to the electricity grid.

The physical connection of installations is governed by a connection agreement. To obtain such an agreement, the applicant must apply to the grid operator for a connection. If the application contains all the information required, the grid operator will reserve capacity for the applicant. Following this, the grid operator and the applicant will examine the applicant's installations and develop the necessary technical solutions to make the connection possible. If the grid operator and the applicant agree on these technical solutions, the grid operator will propose a connection agreement.

The legislation explicitly states that the grid operator should give priority to the connection of production installations that use renewable energy resources. The costs of grid connection are borne by the system user. The costs arising from the preliminary studies are borne by the grid operator. They are subtracted from the costs of grid connection.

Every injection into the grid must be covered by an access contract which establishes the capacity that may be injected at each injection point. This contract between the grid operator and the access holder may be signed by the grid user directly, or by a third party appointed by the grid user (e.g., a supplier or ARP).

When examining an application for access, the grid operator takes the available grid capacities into account, and may refuse grid usage if the grid lacks the necessary capacity. The capacities available to a given grid user are specified in the contract.

The access holder must designate an ARP (Access Responsible Party) for each injection point. The ARP may be a producer, a major customer, an energy supplier or a trader. The ARP contract sets out the balance-related rights and obligations of the grid operator and the ARP. The grid operator must ensure that balance is maintained in the control area, while the ARP is responsible for maintaining a quarter-hourly balance between total injections and total off-takes.

Production units that have a nominal capacity of over 25 MW and/or are directly connected to the ELIA grid must sign a CIPU contract with ELIA, the federal grid operator. CIPU (Coordination of Injection of Production Units) contracts ensure that ELIA always has the necessary generating facilities at its disposal, to enable it to plan maintenance or other work on the grid (switching off lines, etc.), prevent and resolve grid congestions, check on available generation reserves, determine import and export capacity at the borders and mobilise production units to regulate zone balance.

The connected party pays the grid operator the connection tariff. The party having access pays the grid operator the access tariff. The ARP also has to pay the grid operator an imbalance fee. Tariffs are regulated and must be approved each year by the CREG.

4. What are the principal regulatory bodies in the renewable energy sector?

As there are four different legislations which may apply, depending on where the project is located, the main regulatory bodies are the federal and regional energy legislators, i.e., CREG (federal), VREG (Flemish Region), CWAPE (Walloon Region) and Brugel (Brussels Capital Region).

The CREG has been established as the federal regulator. It monitors compliance with the Electricity Act of 1999 and advises the government, controls the electricity market and resolves conflicts. It also approves the tariffs for use of the transmission and distribution grids and the most important contractual conditions of the TSO (Transmission System Operator).

The regional regulators are involved in monitoring renewable electricity production and granting green certificates and CHP certificates.

5. What are the main permits/licenses required for renewable energy projects

Depending on the capacity of the installation, a federal production permit is needed (see 3.2.1). Depending on the type of production installation, an environmental permit and a building permit are also a prerequisite (see 3.2.2). No other specific permits or licenses are required.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

No specific tax advantages are available to renewable energy generation companies. However, companies investing in renewable energy in Belgium can offset a capped part of the investment costs against their corporate income tax liability, and thus reduce their tax burden. Eligibility for tax relief is dependent on filing, with the tax return, all relevant invoices and a certificate proving that the project was implemented by a contractor who is a member of an association of qualified professionals.

7. Does the relevant legislation give a purchase guarantee for the electricity generated by renewable energy companies?

The regions have opted for a system of quota obligations combined with guaranteed minimum prices. The federal and regional green certificates are not interchangeable. Consequently, federal green certificates may only be sold to the federal grid operator.

To guarantee the authenticity and tradability of green certificates, they are registered in a database managed by the respective regulators.

Federal

ELIA, the federal grid operator, must purchase federal offshore and regional green certificates at a minimum price set out in the 2002 Renewable Energy Support Royal Decree.

Production technology	Price guarantee	Duration
Offshore wind energy (first 216 MW per project)[6]	107 EUR/MWh	20 years
Offshore wind energy (above 216 MW per project)[7]	90 EUR/MWh	20 years
Solar (installation before 31 July 2012)	150 EUR/MWh	10 years

[6] For installations, the construction of which has started before 1 May 2014. For installations that will have financial close after 1 May 2014, the aforementioned minimum prices will be dependent on the electricity market price

[7] For installations, the construction of which has started before 1 May 2014. For installations that will have financial close after 1 May 2014, the aforementioned minimum prices will be dependent on the electricity market price.

The purchase obligation for the green certificates from offshore wind will be subject to the signing of an agreement between the TSO and the promoter. The draft agreement must be submitted to the CREG for approval.

The Electricity Act allows the federal government to modify the minimum purchase price for green certificates.

These minimum prices are guaranteed for 10 years (20 years for offshore wind).

Flemish Region

All suppliers must submit a number of Flemish green certificates[8] annually to the VREG. The number of green certificates to be accumulated in year *n* is the subject of goals fixed by the Flemish Region (from 6% in 2010 to some 13% in 2020) and the total volume of electricity supplied to final customers in year *n-1* by that supplier. The obligation takes into account the total number of green certificates issued in the Flemish Region in the preceding year. Some caps apply to large volumes supplied.

The supplier must pay an administrative fine of EUR 125 for each missing certificate (EUR 118 as of 2013 and EUR 100 after 2013).

Green certificates may also be sold to the distribution grid operator at the following prices:

Production technology	Price (EUR)		Duration (years)
Solar	< 250 kWp 01/01/12-31/03/12: 250 01/04/12-30/06/12: 230 01/07/12-31/07/12: 210 01/08/12-31/12/12: 90 2013 onwards: 93	> kWp 2012: 90 2013 onwards: 93	20 / 10[8]
Hydro (< 10 MW), tidal and waves, geothermic, onshore wind, biomass, biogas	90		10
Biogas from anaerobic digestion	100/110[86]		10/20[97]
Sewage gas, landfill gas, co-combustion of waste	60		10
Other sources	60		10

[8] On 8 May 2013, the Attorney-General to the Court of Justice issued an opinion that this obligation is contrary to the principle of Free Movement of Goods

The same principle applies to combined heat and power certificates ('CHP Certificates'), but their value is degressive: stable during the first four years, decreasing in subsequent years until the tenth year. The minimum price is EUR 27 per certificate for existing installations and EUR 31 for installations in operation as from 2012. The quota for the suppliers is 7.6% as from 2012.

Walloon Region

Walloon green certificates may be sold OTC to suppliers and grid operators.

Every quarter, electricity suppliers and grid operators are required to transfer a number of Walloon green certificates corresponding to the quota imposed on them. For suppliers, the quota is calculated on the basis of the electricity they have supplied to final customers located in the Walloon region. The grid operators' quotas relate to their own consumption and their supplies to final customers in the context of their public service obligations. The quotas are as follows 15.75% in 2012 and will be 19.4% in 2013, 23.1% in 2014 and 26.7% in 2015. However, they are reduced for large energy consumers consuming more than 1.25 GWh/quarter:

0-5 GWh/quarter	Quota for the last year increased by 50% of the quota for the current year
>5 GWh/quarter – 25 GWh/quarter	50% of the quota
> 25 GWh/quarter	2% of the quota

Suppliers or grid operators who fail to submit the necessary amount of green certificates must pay an administrative fine of EUR 100 per missing certificate.

ELIA must purchase green certificates at a minimum price of EUR 65.

8. Does the relevant legislation give a minimum price guarantee for electricity generated by renewable energy companies?

See above.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

The Kyoto Protocol has been ratified by Belgium and by the European Union. The general regime for carbon credits is the EU Emission Trading System, governed by EU legislation.

10. Do renewable energy-based power plants have priority for connection to the grid?

The legislation explicitly states that the grid operator should give priority for connection to production installations that use renewable energy resources.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy-based power plants?

No, this would be contrary to EU legislation on the free movement of goods and services.

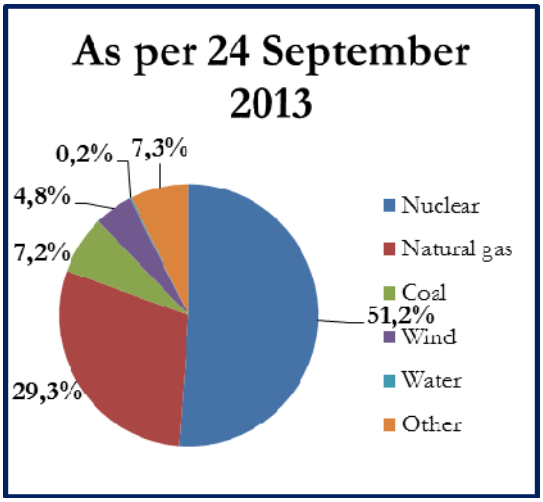
12. What other incentives are available to renewable energy generation companies?

With regard to *offshore wind energy,* the TSO takes over one -third of the costs of submarine cables (including onshore cables and the connection installation to the ELIA grid), up to a maximum amount of EUR 25,000,000 for a project of 216 MW or above. The TSO may charge these costs in its transmission tariffs. The TSO's financing up to EUR 25,000,000 is reduced pro rata if the project does not attain 216 MW.

The financing is spread over five years in five equal installments. The financing of submarine cables is subject to the signing of an agreement between the TSO and the domain concession holder. This agreement need not be submitted for advice or review to the Minister of Energy or to the CREG.

STATISTICS

13. What is the percentage of electricity generated, based on each type of renewable energy source, in the total generation of electricity on a country-wide scale?



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Bosnia & Herzegovina

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GENERAL

1. What is the nature and importance of renewable energy in your country?

To understand the importance of the energy sector in Bosnia and Herzegovina, an overview of the current political and geographical situation in Bosnia and Herzegovina should be briefly explained.

Bosnia and Herzegovina is composed of two self-governed entities, the Federation of Bosnia and Herzegovina ("FBiH") and the Republika Srpska ("RS"), which were established by the Dayton Peace Agreement in 1995. The District of Brčko ("Brčko District") was created in 1999 comprised from land of both entities. The FBiH is divided into ten cantons, which are further divided into municipalities. The RS is only subdivided into municipalities.

Regarding its geographical position, Bosnia and Herzegovina is a hilly and mountainous country. Of the total surface area, 5% are lowlands, 24% hills, 42% mountains and 29% karst. Forests and forestlands cover about 50% of the territory. The total agricultural land covers 2.5 million hectares or 0.7 hectares per capita. Bosnia and Herzegovina possesses significant water resources (average annual precipitation on the territory of Bosnia and Herzegovina is 1250 l/m^2, which is some 250 l/m^2 higher than the average in European countries).[1] Still, energy production in Bosnia and Herzegovina is almost exclusively based on coal and hydropower and most of the coal and oil used in Bosnia is imported from Russia. Despite the current lack of renewable energy generation, Bosnia and Herzegovina signed the EU obligatory protocol committing them to produce 20% renewable energy in comparison to their overall energy consumption by the year 2020. Solar, wind and biomass energy are expected to have a large role in achieving this goal.

Bosnia and Herzegovina has four different public power utility companies each responsible for their own sector of the country. The utilities are EP BIH Elektroprivreda of Bosnia and Herzegovina, ERS Elektroprivreda of Repulika Srpska, EP HZHB Elektroprivreda Hrvatske Zajednice Herceg-Bosne and Brčko District of BIH.[2]

Thus, renewable energy has a tremendous impact on the future development of the energy sector in Bosnia and Herzegovina. This sector is still not that regulated and some draft laws are still to be implemented and processed by the government. Because domestic as well as foreign interest in this sector exists, Bosnia and Herzegovina politicians are trying to fasten the procedure of creating a legal base for it.

2. What is the definition and coverage of renewable energy under the relevant legislation?

The Law on Electricity of the Federation BiH, defines renewable energy as "Renewable sources of electric power" that shall mean sources of electric power that permanently exist in nature and are renewable in whole or

1 Petar Gvero Ph.D., M.Sc. "Climate Change in South-East European countries: Causes, Impacts, Solutions", Power Point Presentation.

2 EBRD Renewable Energy Initiatives, B&H Country Profile 2009.

in part, especially power from water streams, wind, solar, bio-mass, bio-gas, and geo-thermal and non-accumulative solar energy.[3]

The RS Law on Electricity defines renewable energy sources as electricity sources preserved in nature and renewable in whole or in part, especially the power of water streams, wind, bio-mass, and geo-thermal and non-accumulative solar energy.[4]

The RS Law on Energy defines renewable energy sources as non-fossil energy sources which are preserved in the nature and renewed totally or partially such as the energy of watercourse, energy of wind, non-accumulated sun energy, biomass, bio-fuel, sewage gas, gas from the waste water treatment facilities, bio-gases, geo-thermal energy etc., whereby, electricity generated from the renewable energy sources, is defined as:

- Electricity generated by generation installations which use renewable energy sources only;
- An amount of electricity generated from renewable energy sources by combined generation installations which use non-renewable energy sources as well; and
- Electricity generated from renewable energy sources used for filling in the system for the energy accumulating, but the energy obtained using those reservoirs shall be excluded.[5]

The Law on Use of Renewable Energy Sources and Co-generating Energy Sources of defines renewable sources as non-fossil energy sources, which means electricity produced from wind, solar, geo-thermal sources, biomass, wave and tidal sources.[6]

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

In matters that were expressly conferred to the entities for regulation, the entities adopt their own legislation. Even though the entities' legislation is to a certain extent harmonized, some legal issues may be resolved differently. In the FBiH, cantons may also adopt their own legislation in legal matters that are of local relevance.

There are still no energy strategies in Bosnia and Herzegovina, neither on entity or state level. The RS adopted its Energy Law in 2009, and Law of Renewable Energy Sources and Co-generating sources (Official Gazette RS 39/13).

The FBiH has the Law on Electricity (Official Gazette of FBiH 63/13) where renewable energy is defined and the Law on Use of Renewable Energy Sources and Co-generating Energy Sources adopted in 2013 (Official Gazette of FBiH 70/13) which regulates renewable energy.

State level:

- Law on Transmission of Electric Power, Regulator and System Operator of Bosnia and Herzegovina (Official Gazette BiH 7/02, 13/03, 76/09, 1/11);

[3] Law on Electricity of the Federation BiH (Official Gazette of FBiH 66/13), Article 3.

[4] Law on Electricity of the Repulika Srpska (Official Gazette of RS 08 08, 34/09, 92/09, 1/11), Article 3.

[5] Law on Energy of the Republika Srpska (Official Gazette of RS 49/09), Article 3.

[6] Law on Use of Renewable sources and Co-generating Energy sources (Official Gazette 70/13) Article 3

- Law on Establishing the Company for the Transmission of Electric Power in Bosnia and Herzegovina - TRANSCO Law of Bosnia and Herzegovina (Official Gazette BiH 35/04, 76/09 and 20/14);

- Law on Establishing an Independent System operator for the Transmission of Electric Power in Bosnia and Herzegovina - ISO Law of Bosnia and Herzegovina (Official Gazette BiH 35/04).

Entity level:

Federation of Bosnia and Herzegovina (FBiH):

- Law on Use of Renewable Energy Sources and Co-generating Energy Sources (Official Gazette of FBiH 70/13, 05/14);

- Law on Electricity of the Federation BiH (Official Gazette of FBiH 66/13)

- Decree on Promulgation of the Law on Modifications and Amendments of the Law on Electricity (Official Gazette FBiH 38/05);

- Decision about a Methodology for the Determination of Purchase Prices for Electricity from Renewable Sources with Installed Power up to 5 MW (Official Gazette of FBiH 32/02).

Republika Srpska:

- Law on Energy of the Republika Srpska (Official Gazette of RS 49/09);

- Law on Electricity of the Repulika Srpska (Official Gazette of RS 08/08, 34/09, 92/09 and 1/11);

- Law of Renewable Energy Sources and Co-generating sources (Official Gazette RS 39/13, 108/13);

International/European level:

- Kyoto Protocol to the Framework Convention on Climate Change was signed in 2007;

- Treaty Establishing Energy Community (Official Gazette BIH - International Agreements, No. 9/06);

- Directive 2005/89/EC of the European Parliament and of the Council of 18 January 2006 concerning measures to safeguard security of electricity supply and infrastructure investment (Text with EEA relevance);

- Regulation (EC) No 1228/2003 of The European Parliament and of The Council of 26 June 2003 on condition for access to the network for cross-border exchanges in electricity;

- Directive 2003/54/EC of the European Parliament and of the Council Concerning Common rules for the internal market in electricity and repealing directive 96/92/EC;

- Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on promotion of use of bio-fuels or other renewable fuels in transportation;

- Directive 2001/77/EC of the European Parliament and of the council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market; and

- Framework Convention on Climate Change was signed in 2000.

4. What are the principal regulatory bodies in the renewable energy sector?

The State Electricity Regulatory Commission ("SERC") is an independent and a non-profit institution of Bosnia and Herzegovina, which acts in accordance with the principles of objectivity, transparency and equality, and has jurisdiction over the transmission of electricity, transmission system operation and international trade in electricity, as well as generation, distribution and supply of electricity customers in Brčko District of Bosnia and Herzegovina. SERC was established by the Parliament of Bosnia and Herzegovina by adopting the Act on Transmission, Regulator and Electricity System Operator, and appointing the Commissioners (1 July 2003).[7]

The Independent System Operator in Bosnia and Herzegovina ("ISO BH") was established by the Parliamentary assembly of Bosnia and Herzegovina, Law of Establishing Independent System Operator for the Transmission System in Bosnia and Herzegovina (Official Gazette BH 35/04). The purpose of establishing ISO BH is to ensure continuity supply of electric energy according to defined quality standards for citizen welfare in Bosnia and Herzegovina. ISO BH is established as an independent, specialized and non-profit organization in BH.[8]

The Regulatory Commission for Electricity in Federation BIH (FERK) established by the Electricity Law (Official Gazette FBIH, No. 41/02 dated 23.08.2002.) is specialized, autonomous, independent and non-profit organization in the Federation of Bosnia and Herzegovina. The Regulatory Commission's jurisdictions are:

- supervision and regulating the relations between power generation, distribution and electricity customers including power traders;
- prescribing methodology and criterion for defining the prices for supplying of non-eligible customers;
- defining of tariffs for distribution systems users and tariffs for non-eligible customers;
- issuing and revocation of licenses for generation, distribution and tariffs for non-eligible customers;
- issuing the preliminary construction permits and licenses for usage of power facilities except the facilities for power transmission; and
- defining General Conditions for Electricity Supply.[9]

The Regulatory Commission for Energy of Republic of Srpska (RERS) was founded on 13 September 2002 in order to regulate the monopolistic behavior and provide the transparent and non-discriminatory position of all participants in the electricity market in Republic of Srpska, pursuant to the Law on Electricity (Official Gazette of Republic of Srpska number 66/02, 29/03 and 86/03).[10]

5. What are the main permits/licenses required for renewable energy projects?

In general in FBiH as well as in RS the authority may grant the right to exploit natural resources to the interested private entity. However, the licenses required for renewable energy projects starts from general licenses for electrical trading issued from entity level authorities provided that other permits have

7 Available at *"www.derk.ba"*.

8 Available at *"www.nosbih.ba"*.

9 Available at *"www.ferk.ba"*.

10 Available at *"www.reers.ba"*.

been obtained (construction, concession, usage etc.). Also, after obtaining general license, the licensor should obtain: trade license issued by entity level authority, electro-energy permit issued by entity level authority, construction license issued by entity level or cantonal level authority, distribution and supply license issued on entity level only in case where the entity wishes to pursue the activity of supply and distribution.

The licensing procedure differs depending on the level of government that would be competent as well as on local authorities (cantonal, municipal etc.).

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

The law does not explicitly provide an answer to this question. Some decisions are drafted in RS and the Federation, but since none of those are enforceable to this date, they are not seen as a guiding law, and thus not relevant.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

RS Law on Energy is defining two types of Certificates which the generator of electricity receives upon installation. Pursuant to Article 29 of the RS Law on Energy, the generator of electricity may, at its own request, get a certificate on origin for electricity generated in the generation installations which has a valid certificate (declaration) when proven that, in the period which the certificate is related to for the generation installations, it has been operating in a way that it meets the terms and conditions prescribed for efficient cogeneration; i.e., generation of electricity from renewable sources.

The Certificate (declaration) for generation installations may be granted to generator of electricity if such generation installations generate electricity from renewable energy sources in an economically appropriate way, protecting environment or in efficient cogeneration.

The certificates are defined as follows:

- Certificate on the electricity origin - document serving the generator of electricity to prove that the electricity generated in its installation was generated from renewable energy sources or in co-generation with a high level of efficiency and it necessarily contains the amount of electricity, energy source which was used for its generation, place and date of generation as well as other data which contribute to the accuracy and reliability of the document;

- Certificate (declaration) for generation installation - the document which is issued to generator of electricity for a single generation installation certifying that such an installation fulfils the prescribed terms and conditions for the concurrent generation of electricity and heat with a high level of efficiency, or for generation of electricity using the waste or renewable energy sources in an economically appropriate way, harmonized with the regulations related to protection of environment.

However, last month the Regulatory Commission for Electricity in Federation BIH discussed a new regulation which prescribes new issues connected with purchase guarantee and minimum price guarantee

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

According to the Law on Use of Renewable Energy Sources and Co-generating Energy Sources the two federal power utility companies, "Elektroprivreda BiH" and "Elektroprivreda HZ Herceg-Bosna" have the obligation to purchase electricity from renewable sources.

According to the Law, the determination of the purchase price level of electric energy from renewable sources will be subject of separate Rules as we noted under question 7.

According to the new legislation the contract for the new plant will be signed for a period 12 years from the start of operation. After the expiration of the contract period a privileged manufacturer will lose rights on guaranteed price but they will retain other rights that have qualified manufacturers (e.g., to freely sell electricity on market).

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Kyoto Protocol to the Framework Convention on Climate Change was signed in 2007. There is no relevant legislation in relation to carbon credits.

10. Do renewable energy based power plants have priority for connection to the grid?

The Rules prescribed that a qualified manufacturer that has concluded an agreement on compulsory purchase has the advantage of dispatch within the reported daily work schedule (timetable) to network operator which the plant is connected. Network operator must take the produced electricity from qualified producers if it does not endanger the operation of power systems.

11 Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

No, there is no such incentive available. Based on the information provided by a representative of the company TURBINA IPD ltd., to this date there are just them in Bosnia and Herzegovina that are using equipment and materials for renewable energy based power plants from local suppliers. They are manufacturing wind turbines, and for their product they take materials produced in Bosnia and Herzegovina. The electrics, as the turbine itself, they have to import because there is no company providing this kind of service in Bosnia and Herzegovina, yet.

12. What are the other incentives available to renewable energy generation companies?

With Bosnia and Herzegovina's great nature and energy potentials, it seems that their first and foremost stimulation is that energy production from renewable resources will become a practice in this country. With the perspective of joining the European Union, the production of energy from renewable resources will become an obligation that Bosnia and Herzegovina, as a potential member, will have to take seriously. Thus, manufacturers will be obliged to apply those standards and procedures that will for sure be in correlation with nature conservation.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

As previously stated, Bosnia and Herzegovina signed the EU obligatory protocol committing them to produce 20% renewable energy in comparison to their overall energy consumption by the year 2020. According to statistics from JP "Elektroprivreda HZ HB" d.d. Mostar, Energy resources of small hydropower plants in Bosnia and Herzegovina is 1,004.63 MW of strength and 3,520GWh of electricity annually, which represents 12.64% of the total hydropower potential of Bosnia and Herzegovina. According to a study that GTZ (Deutsche Gesselschaft für Tehnische Zusammenarbeit), conducted for the HT Innotech GmbH, Berlin, they found that the energy potential from residual wood and wood waste amounted to approximately 1 million m^3/a which could provide thermal energy for 130,000 households or 300,000 people.

Of other statistics, regarding the total generation of electricity on a country-wide scale, we have no confirmed information.

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GENERAL

1. What is the nature and importance of renewable energy in your country?

In Brazil, renewable sources of energy are of great importance. The country´s energy matrix is strongly dependent on hydroelectric power. Further, after the energy crisis of 2001 and 2002, the Federal government enacted a number of policies tending to promote the development of other renewable sources of energy.

In this sense, the 2010-2020 National ten-year energy plan (*Plano Dezenal de Energia*) states that one of its targets is to increase the participation of renewable sources of energy in the Brazilian power matrix in order to meet the increasing demand for electric energy during the coming decade.

The so-called "PROINFA" was created in 2002, so as to bring incentives for the development of alternative energy sources, such as wind energy, biomass projects and small hydroelectric plants ("PCHs"). It was instituted by Law No. 10,438/02, as amended, and implemented by Decree No. 5,025/2004. The plan was divided into two phases: the purpose of the first stage of PROINFA was to produce 3,300 MW from alternative sources, equally distributed among wind power, PCHs and biomass sources. In the second stage, alternative sources should meet 10% of annual electricity consumption demand in Brazil within 20 years.

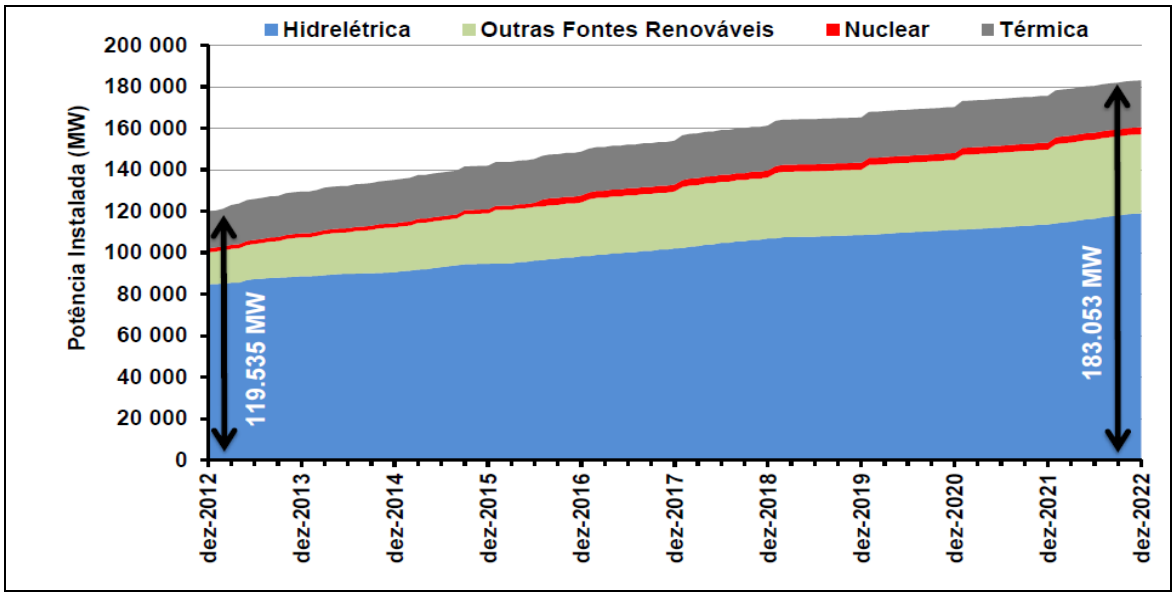
Projects qualified during the first stage were initially scheduled to be rolled out by 30 December 2006, but this deadline was repeatedly extended due to significant delays. By the end of 2011, 3,155 MW of installed power became operational.

The second phase of PROINFA has never been launched. With the successful development of federal governmental auctions, no initiative was taken to proceed with the second phase.

Further to the PROINFA program, the Federal government has implemented the policy to increase the participation of renewable energy in the country´s energy matrix by coordinating public auctions for purchase of energy from renewable sources on a long-term basis. These auctions which are coordinated by the Ministry of Mines and Energy – "MME" and the National Electric Energy Agency – "ANEEL" have led to the development of local biomass and wind energy industries and has even spurred the interest of foreign investors.

As can be seen in the graph below, the installed capacity of renewable projects is to increase significantly in the coming decade:

Evolution of the installed capacity of the national interconnected system (MW)



Source: EPE, Plano Decenal de Energia 2022

On 2007, an auction for alternative sources was held. In this case, wind energy was placed alongside hydroelectric and other sources such as biomass fuels. The initial bidding prices of R$135.00/MWh (for hydroelectric energy) and R$140.00/MWh for other sources of energy were not competitive enough for wind energy developments and none were selected.

On 2009, the first auction exclusively for energy from wind source was held. The auction was organized by ANEEL dependent on the Ministry of Mines and Energy as a "reserve auction" or auction for additional energy to be supplied to the basic grid - National Integrated System ("SIN") - so as to reduce the operational costs of the system. Interested parties could participate either alone or by forming consortiums with other parties. In all, 339 projects were enrolled to participate in the auction with an installed capacity of more than 10,000 MW. The auction was a decreasing-price or Dutch type auction in which bidding started in a first round set at R$189/MWh and began to drop by R$0.50. More than seven hours and 75 rounds later, the price had dropped to an average of R$148.39/MWh. At this price, 71 projects were selected, amounting to 1,805.7 MW of installed capacity.

On August 2010, a reserve energy auction and a renewable energy auction were held for the sale and purchase of energy from wind, hydro power and biomass projects. As a result of the 2010 auctions, 70 wind energy projects were contracted with an installed power of 2,047.8 MW for an average price of R$130.86/MWh.

Further to the referred auctions, in 2010 the Ministry of Mines and Energy also coordinated specific auctions for the purchase of energy from hydroelectric power which were relevant both in terms of contracted power and in terms of price, namely structural project Belo Monte (11,233 MW) and Teles Pires (1,820 MW) in which energy was sold at the following prices: R$78.97/MWh and R$58.35/MWh,

respectively. The pricing obtained in Teles Pires was the lowest price for new energy projects obtained within auctions hosted in the regulated market.

In August 2011, two energy auctions were conducted by ANEEL: a reserve energy auction and an A-3 auction. 429 wind energy projects were enrolled to participate in these auctions as well as 41 hydro power plants, 30 thermal power plants (including gas fueled power plants) and 81 biomass power plants. As a result of these auctions, 362,227,186.100 MWh were contracted for an average price of R$102.07/MWh and R$99.61/MWh (for the A-3 auction and reserve auction, respectively), presenting a relevant difference in comparison with the energy auctions of the previous years.

Also in the end of 2011, an A-5 energy auction was held with the participation only of wind and biomass projects for an average price of R$102.18/MWh. As a result of this auction, 104.509.233,600 MWh shall enter into commercial operation at the beginning of 2016.

In December 2012, ANEEL conducted another A-5 energy auction exclusively for renewable energy projects. As a consequence of this auction, 66,181,492.800 MWh were contracted for an average price of R$91.25/MWh. These new generating projects shall enter into commercial operation on or until 1 January 2017.

In 2013, another governmental auction (a reserve energy auction) was carried out by ANEEL and the Ministry of Mines and Energy which added a further 1,505MW of wind power to the interconnected system. This auction had an average price of R$110.51/MWh.

Also in 2013, ANEEL launched an A-3 auction resulting in an additional 867 MW in the system at an average price of R$91.25/MWh. Wind power plants were responsible for a substantial part of the energy sold in this auction. In addition, it is important to note that the 2013 A-3 auction was the first governmental auction that allowed the participation of solar power plants.

Lastly, ANEEL and MME carried out an A-5 auction in December 2013 which resulted on additional 3,507MW to the interconnected system for an average price of R$109.93.

For the year of 2014, ANEEL and MME have already scheduled A-3 and A-5 auctions on 6 June and 12 September, respectively.

The table below depicts the expansion of renewable sources of power (in terms of installed power) between 2013 and 2018. As can be seen below, there is to be a significant increase in biomass, small hydroelectric power plants (PCH) and wind power projects within the next 3 years.

Tipo	Região	2013	2014	2015	2016	2017	2018
		Potência (MW)					
Biomassa	Sudeste/Centro-Oeste	693	99	0	0	100	397
	Sul	4	0	0	0	0	0
	Nordeste	78	0	0	0	0	350
	Norte	80	0	0	0	0	0
	TOTAL	**855**	**99**	**0**	**0**	**100**	**747**
PCH	Sudeste/Centro-Oeste	202	99	26	0	90	162
	Sul	229	25	0	0	30	68
	Nordeste	0	0	0	0	0	5
	Norte	0	19	38	0	33	30
	TOTAL	**431**	**143**	**64**	**0**	**153**	**265**
Eólica	Sudeste/Centro-Oeste	0	0	0	0	0	200
	Sul	330	565	174	526	528	400
	Nordeste	1763	2098	2362	1099	552	400
	Norte	0	0	0	58	203	0
	TOTAL	**2.093**	**2.663**	**2.536**	**1.683**	**1.283**	**1.000**
	TOTAL	**3.379**	**2.905**	**2.600**	**1.683**	**1.536**	**2.012**

Source: EPE, Plano Decenal de Energia 2022

2. What is the definition and coverage of renewable energy under the relevant legislation?

The Brazilian legal framework does not have a specific provision defining the concept of renewable energy. Further, there is no general long-term policy regarding the use and development of renewable energy projects.

Notwithstanding the above, Law No. 9,478, dated 6 August 1997 sets forth the national politics for the rational use of energy resources. The law sets forth a number of guidelines including "*the protection of the environment and conservation of energy*" and the "*use of alternative sources of energy through the economic use of raw materials available and the applicable technologies*".

Also, Law No. 10,438/2002 – which, among other things, created PROINFA – sets forth the objective of increasing the generation of energy from biomass, small hydroelectric plants and wind power projects.

In practice, the promotion of renewable energy sources has been implemented through specific auctions (as highlighted above), through the creation of PROINFA, the existence of specific financial credit facilities for companies generating renewable energy and through the granting of incentives to projects with certain characteristics.

Policy-wise, however, much needs to be done to develop a general framework and long-term policy for the generation of energy from renewable sources.

The Brazilian legal framework still needs to be developed in relation with the environmental rules and creating more specific conditions for the companies that generate alternative sources.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

According to Article 22, IV of the Federal Constitution, the Brazilian Union is competent to regulate energy-related matters. As such, the member States and Municipalities cannot establish laws contradicting the federal regulation.

The Brazilian concern regarding renewable sources of energy was first portrayed in Law 9,478/1997. As referred *supra,* this Law established the general guidelines for the rational use of energy and set forth that the economic use of renewable sources was to be a priority.

The PROINFA scheme was created by Law No. 10,438, dated 26 April 2002, and regulated by Decree No. 4,541, dated 23 December 2002. Law 10.438 also defined important mechanisms for subsidies for the use of renewable sources in SIN, amongst other benefits for generating companies of the alternative sources.

Law 10,848 dated 15 March 2004 instituted the so-called "new model" of the Brazilian Power Sector pursuant to which trading of electric energy may take place either in the free market (ACL) or in the regulated market (ACR).

Specific auctions for energy from renewable sources are set forth by the National Electric Energy Agency ("ANEEL"), under guidelines set forth by the Ministry of Mines and Energy.

Specific regulations regarding requirements for authorizations or registrations of the renewable energy projects have been issued by ANEEL under Resolution 112/1999 (now replaced by Resolution 390/2009).

Furthermore, at the beginning of 2012, ANEEL has approved, by means of ANEEL Resolution No. 482, dated as of 17 April 2012, the regulatory cornerstone for the development of new distributed generation projects (with a generating capacity up to 1MW) from renewable sources.

Under such regulation, the power consumers who wish to implement a renewable source and on-site generation system, up to 1 MW in size, are authorized to use net metering systems and compensate any excess of generated energy with future consumption of energy to be received from SIN. Accordingly, this new regulation authorizes the compensation of the energy credit from an on-site generation unit with the future energy consumption of any related consumption under the same ownership chain, within a 36 months period, including distribution concessionaires.

At the end of 2012, the Brazilian Government has also enacted two important acts that have considerably changed the Brazilian electric energy sector framework: Ordinance No. 455/2012 and Provisional Measure (*Medida Provisória* or *MP*) No. 579/2012.

On 2 August 2012 the Ministry of Mines and Energy enacted Ordinance No. 455/2012, which defines the guidelines for the registration of power purchase agreements entered into within the free market. In short terms, the Ordinance sets forth that (i) such agreements must be registered *ex ante* the beginning of the energy delivery; and (ii) the parties must inform the contracted price at the moment of the registry. The Ministry of Mines and Energy set forth this price disclosure obligation with the purpose to create a price index for the free market (ACL).

Moreover, the Brazilian Government enacted MP No. 579/2012, which was converted into Law No. 12,783/2013.

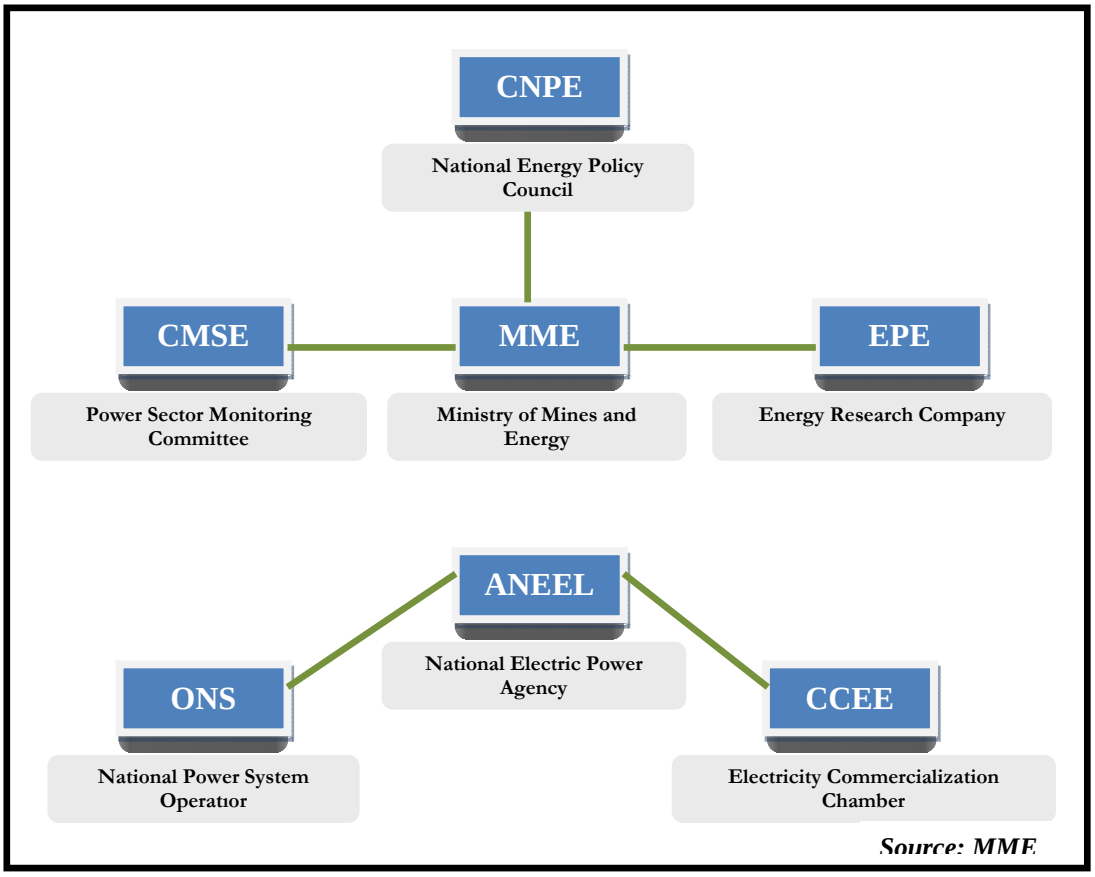
Among other provisions, the main purpose of this normative act is to regulate the renewal conditions for electric energy generation, distribution and transmission concessions expiring between 2015 and 2017, including but not limited to hydro power generation.

Law No. 12,783/2013 aims at (i) establishing the conditions for the renewal of electric energy generation; distribution and transmission concessions; (ii) assuring a tariff reduction; and (iii) creating a quotas system characterized by the allocation of the power generated by the hydroelectric power plants to the distribution concessionaires of the SIN whose concessions are renewed under the terms and conditions established by Law No. 12,783/2013. When it comes to hydroelectric generation, the renewal is subject to (i) a new tariff calculated by ANEEL, (ii) the commercialization in accordance with the quota allocation system and (iii) compliance with quality standards established by ANEEL.

4. What are the principal regulatory bodies in the renewable energy sector?

The institutional framework for regulation of energy in Brazil includes the Ministry of Mines and Energy - MME, ANEEL, the National Electric System Operator ("ONS") and the Wholesale Energy Chamber ("CCEE"). Other agents include National Council for Energy Policy (CNPE), the Power Sector Monitoring Committee (CMSE) and the Energy Research Company (EPE).

Please find below a diagram depicting the main regulatory bodies within the Brazilian electric energy sector:



The National Council for Energy Policy - CNPE (*Conselho Nacional de Política Energética*) is an advisory board to the Brazilian Executive Power. Its main attributions are formulating energy-related policies and guidelines and assuring the supply of materials necessary for power generation in remote areas of Brazil. The CNPE is also in charge of reviewing the energy in each region of the country, as well as for establishing general guidelines for specific programs such as programs for the use of natural gas, alcohol, biomass, coal and thermonuclear power.

The Ministry of Mines and Energy - MME is the Federal Government entity responsible for the execution of energy-related policies within the country. Its paramount attributions include the formulation and the implementation of policies for the energy sector, according to the guidelines defined by the CNPE.

The MME is responsible for setting up the planning for the domestic energy sector, monitoring Brazilian Power Sector safety of supply, and for defining preventive actions to preserve safety of supply in case of imbalances between supply and demand of electricity. As of the sanction of Law No. 10,848 dated March 2004, which instituted the "New Energy Model", the Brazilian government, acting primarily through the MME, assumed certain functions previously assigned to ANEEL, including preparing the guidelines that govern the granting of concessions and the issuance of regulations with respect to the bidding process for public utility and electricity plants concessions. MME, for example, is the body that approves the amount of energy to be purchased in a public auction promoted by the Federal Government. Consequently, the MME defines the list of generation projects.

The Power Sector Monitoring Committee - CMSE is an advisory board, dependent on the MME, established for the purpose of monitoring and evaluating the continuity of energy supply. Its principal functions include that of monitoring generation, transmission, distribution, export, import and trading of energy; as well as evaluating current conditions and identifying problems and risks within the Brazilian energy industry and elaborating proposals for adjustments in order to preserve safety of supply and service.

The Energy Research Company - EPE was instituted by Law No. 10,847/2004 and established by Decree No. 5,184/2004 as a company in charge of carrying out research and studies within the Brazilian electric energy sector. As such, EPE performs surveys and carries out projections which allow for further developments, expansions and –in general- short, medium and long term planning.

The National Electric Energy Agency- ANEEL was instituted by Law No. 9,247/96 and established by Decree No. 2,335/97. Its attributions are to regulate and inspect production, transmission, distribution and commercialization of electricity so that quality of provided services and universal access to electricity are assured. ANEEL also sets tariffs for consumers. Further, under the new model established on 2004, ANEEL is to promote, directly or indirectly, auctions for the distributing agents to purchase electricity through long term contracts within SIN.

The National Power System Operator - ONS, was created by Law No. 9,648 in 1998 as a private, non-profit organization made up of agents representing customers and private and state-owned companies involved in the electricity generation, transmission, and distribution businesses. The New Industry Model Law granted the Brazilian government the authority to appoint three members to the ONS executive committee.

The Wholesale Energy Chamber - CCEE was instituted in August 2004 to take over the attributions previously carried out by the Wholesale Electricity Market. Its principal

attributions are determining the spot price, used to value short term market transactions; executing so-called energy accounting processes to identify the agents and amount of electricity involved in multilateral short term market transactions; preparing financial settlement of amounts calculated in the energy accounting process; and preparing and executing electricity auctions within ACR by delegation of ANEEL.

5. What are the main permits/licenses required for renewable energy projects?

With the purpose to construct and operate renewable energy projects, the entrepreneur shall obtain a prior authorization issued by ANEEL and proceed with the relevant environmental licensing. Please note that some projects, such as large hydro power plants, may only be implemented through the execution of concession agreements with granting authorities (the Ministry of Mines and Energy in the electricity sector), preceded by bidding procedures.

In accordance with ANEEL Resolution Nos. 390 and 391, dated 15 December 2009, recently amended by ANEEL Resolution No. 546, dated 16 April 2013, in order to obtain an authorization to build renewable power plants, the participant must present to ANEEL specific legal and technical documentation in order to attest his qualification to receive such authorization.

After the enactment of ANEEL Resolution No. 546/2013, wind power entrepreneurs have to present a declaration issued by owners of already authorized wind farms acknowledging the construction of a new wind project within interference areas. ANEEL promoted such modification with the purpose to avoid the construction of new wind farms that may affect the performance of already installed or authorized projects.

Also, wind power entrepreneurs must also present a performance bond to ANEEL – a guarantee of compliance with the terms and conditions set forth by the authorization - in the amount of five per cent of the project´s total estimated investment. The performance bond must be valid for thirty days from the start of commercial operation of the power plant and may be drawn on in the following cases: (i) noncompliance with the building schedule of the project; (ii) noncompliance with the terms and conditions set forth by the authorization; and/or (iii) revocation of the authorization.

In addition to the authorization granted by ANEEL, the construction, installation, expansion and operation of any establishment or activity which uses environmental resources and is deemed as actually or potentially polluting as well as those capable of causing any kind of environmental degradation depend on a licensing process. Generally, the process to obtain an environmental license follows three stages:

- *Preliminary License* (*Licença Preliminar or "LP*) – it is granted during the preliminary stage of planning the enterprise or activity and approves its location and conception based on the environmental studies presented by the entrepreneur attesting the environmental feasibility and setting forth the basic conditional requirements to be met during the subsequent stages of its implementation;

- *Installation License* (*Licença de Instalação or "LI"*) – it authorizes the setting up of the enterprise according to the specifications in the approved plans, programs and designs, including measures of environmental control and conditions; and

- *Operation License* (*Licença de Operação or "LO"*) – it authorizes the operation of the activity or enterprise after effective compliance with the foregoing licenses and with the environmental control and conditions determined for the operation.

State environmental authorities are competent to license enterprises for which the environmental impacts are restricted to its territories a well as to impose specific conditions, restrictions and control measures. The Brazilian Institute of Environment and Renewable Natural Resources (*Instituto Brasileiro do Meio Ambiente, e dos Recursos Naturais Renováveis or IBAMA*) has the jurisdiction over the environmental licensing of enterprises and activities with environmental impacts on a regional or international level. Municipal environmental authorities are the competent authorities for licensing enterprises for which impacts are only local.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Generation companies can adhere to the Special Regime of Incentives for the Development of Infrastructure (*Regime Especial de Incentivos para o Desenvolvimento da Infra-Estrutura* – "REIDI") established by Law No. 11,488, dated of 15 June 2007 and regulated by the Decree No. 6,144/2007 that suspends the requirement of specific taxes PIS/PASEP and COFINS in the acquisition and import of services and equipment linked to infrastructure projects approved and carried out in a period of 5 years as from the approval date.

The license and co-license of the beneficiaries of the REIDI can only be required by private legal entities that hold the implementation of an infrastructure project of the energy sector.

In the ease of companies of the energy sector, according to Ruling No. 274, dated 19 August 2013 and Ruling No. 310, dated 12 September 2013 the legal entity holding the concession, permission or authorization to generate, transmit or distribute electric energy needs to submit a request to ANEEL to participate in the program.

Subsequently, the legal entity needs to file with the Secretary of the Brazilian Federal Revenue, to receive the benefits of this program.

In addition, in 2011, the Brazilian Government, seeking to attract more investments for the country, issued Law No. 12,431/11, dated as of 24 June 2011, which enabled the creation of infrastructure bonds (*debentures).* The referred law permits specific purpose companies to issue infrastructure bonds for the financing of projects considered by the Government as a priority, including renewable energy undertakings. These infrastructure bonds are a form of incentive for investments because they present certain privileges, especially regarding tax aspects: infrastructure bonds issued by renewable energy generating companies – whose project was duly approved by the Government as a priority – shall be subject to a 15% income tax aliquot (such percentage is reduced to 0% for individuals).

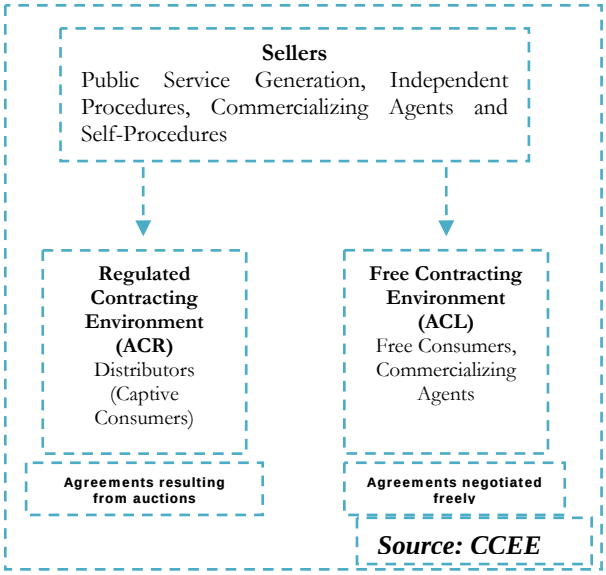
7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Under the new model for the electric sector, the trading (or commercialization) of electric energy may take place in two different markets: (i) within the regulated market (*Ambiente de Contratação Regulada*- ACR), electric power purchase agreements (so-called CCEARs) are executed by and between selling

agents and purchasing agents (distributors) through specific auctions hosted by the government; and (ii) within the free market (*Ambiente de Contratação Livre)*, on the other hand, negotiation among the generating Agents, Commercialization Agents, Free Consumers[1] Importers and Exporters of electricity takes place through privately negotiated agreements. Distributing entities may operate only in the regulated market. Generating companies (whether public generation concessionaires, Independent Producers of electric power or Self-Producers) can trade power both in the free market and in the regulated market.

Companies operating within the regulated market must submit winning bids in the auctions promoted by the regulatory bodies and will consequently sell the predetermined amount set forth in the contract. In this case they have a purchase guarantee of the energy generated.

A general overview of the two different trading markets is portrayed below:



In 2009 wind energy reserve auction, projects submitting successful bids have a purchase guarantee from CCEE. In the case of the PROINFA, it was established that Eletrobrás would purchase 100% of the generated energy of the power plants registered in the program, thus all the generating companies that participate of this program have a purchase guarantee. In other public auctions, long-term PPAs are entered into with the pool of concessionaires of distribution services participating of each auction, with the purpose to amortize the investment performed by generating companies.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

A question that generates controversy is that related to the maintenance and growth of renewable sources of energy versus the cost that such sources often entail. In this sense, some claim that the cost of renewable sources of energy is higher than that of energy from

[1] Free Consumers are consumers which – having complied with certain requirements set forth by the applicable legislation - are allowed to choose their electric power provider (generating and commercializing Agents) by means of free negotiation. The table below summarizes the conditions enabling the consumer of electric power to become a free consumer.

Criteria in effect to become a Free Consumer:

Minimal Demand	Minimum Supply Voltage	Date of connection to the consumer
3 MW	Any voltage	After 8 July 1995
3 MW	69 kV	Before 8 July 1995

The threshold of minimum demand may decrease in special cases involving consumers that are willing to buy power from renewable energy projects.

other sources. At the same time, a minimum price must be guaranteed in order to attract investors.

In practice, however, there is no minimum price. Auctions are conducted as Dutch-type or decreasing price auctions whereby the maximum price is previously established by the MME and interested parties are to submit bids lower than this price in order to prevail.

In effect, under the new model of the Brazilian power sector, the principle of the lowest price is to serve as guideline for auctions coordinated by the Federal government (item VII of art. 20 of Decree No. 5,163/2004). In other words, winners of the auction shall be those bidders which offer electric power for the least price per Mega-Watt Hour to supply the demand envisaged by the Distributors. A power purchase agreement (in the form of a CCEAR) is then executed between the winners and the Distributors.

In the case of the PROINFA regime, the minimum price was set in relation to the average national tariff of supply for the final consumers in the last 12 months with an increase in the amount of 50% for biomass projects, 70% for PCHs and 90% for wind power projects. This resulted in final bidding prices significantly higher than prices for projects from other energy sources.

In subsequent energy auctions, the maximum price defined by the MME was set at R$189/MWh (in the 2009 wind energy auction) and at R$167.00/MWh for wind and biomass and R$155.00 for small hydroelectric power plants (in the 2010 auctions). During the auction, the price dropped to an average of R$148.39/MWh (in the 2009 wind energy auction) and to R$130.86 (wind), R$144.20 (biomass) and R$141.93 (small hydroelectric power plants) in the 2010 auctions.

On 2011, the maximum price was established at R$139/MWh, R$146/MWh and R$ 112/MWh for auction A-3, reserve auction and A-5 auction, respectively.

The maximum price for the 2012 auction was set forth at R$112/MWh. As to 2013 auctions, the prices varied from R$91.25/MWh to R$110.51/MWh.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Among other incentives created by the Brazilian government, our energy regulatory authorities have also enabled the possibility of using credits arising from the Clean Development Mechanism – CDM created under the Kyoto Protocol – ratified by Brazilian Government on 1998 – in connection with renewable energy projects.

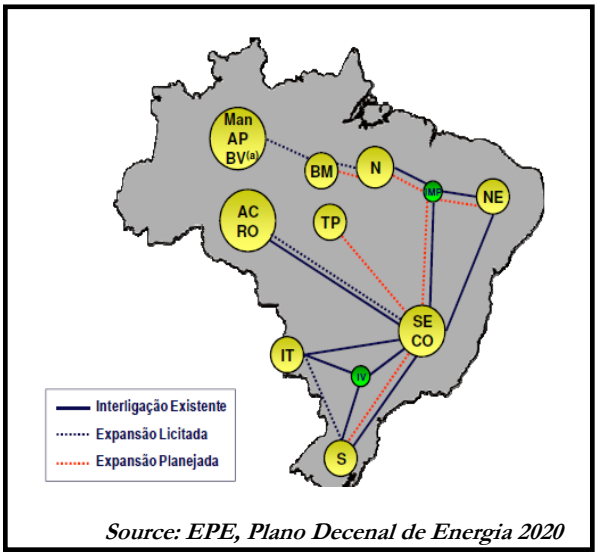
For instance, Decree No. 5,882, dated as of 31 August 2006, sets forth that power purchase agreements executed under PROINFA may have an express clause giving Eletrobrás the right to commercialize credits from CDM as well as to produce all documents required for filling with CDM.

In addition to this legal provision, the latest renewable energy auctions permitted energy sellers to plead for themselves the credits related to CDM.

10. Do renewable energy based power plants have priority for connection to the grid?

The Brazilian electricity network consists of one main interconnected grid, namely SIN, comprised of several transmission lines, connecting the regional systems: South, Southeast, Centre-west, Northeast and part of the Northern area. The SIN is responsible for supplying energy to approximately 98% of Brazil's market of electric energy. The basic

grid is composed by more than 90,000 km of transmission lines. The Brazilian regions that don't form part of the SIN compose the isolated system. In 2009 Brazil the so-called "isolated systems" supplied energy to approximately 3% of the Brazilian population.



Source: EPE, Plano Decenal de Energia 2020

The map above, portrays the SIN including existing connection (blue lines), expansions to the grid that have already been auctioned (dotted blue line) and planned expansions to the grid (dotted red lines).

In what regards the national grid or SIN, a priority condition was given to the companies that participate in the PROINFA. According to the Decree No. 5,025 of 2004 (before the Decree No. 4,541 of 2002) the generating companies that participate of the PROINFA have priority in the dispatch with the ONS to the connection on the grip in comparison with other types of energy.

In this sense, ANEEL enacted the Normative Resolution No. 56/2004 that sets forth the procedure for the access of the generating companies that participate of the PROINFA to the system of the transportation of energy. This Resolution established that the ONS, the concession or permission company of distribution needs to send a definitive access report (*parecer de acesso*) defining the way that the generation company that participates of the PROINFA will be connected to the grid. The access report needs to observe the criteria of minimum global value that is a valuation of the technically equivalent ways to the integration of the generating companies to the grid spending the minimum global value of investments to do this connection.

Article 4 of the same Resolution contemplates the possibility of shared connection to the grid. This alternative is usually considered by the generating companies because normally the costs to implement operate and maintain the connection installations of shared use are divided, in a proportional way, to the power installed by the companies in the power plant units.

Regarding the possibility of shared connection to the grid, ANEEL Normative Resolution No. 320/2008 established special conditions for wind, biomass and PCHs to access the SIN by the Facilities Transmission of Exclusive Interest of Central Generations for Share Connection (*Instalações de Transmissão de Interesse Exclusivo de Centrais de Geração para Conexão Compartilhada*) – "ICG" The shared use of the transmission installations by the generating companies of renewable energy prorate the high costs that an isolated connection can imply and consequently help the companies that generate these types of energy to reduce the total price of the energy sold.

To share an ICG the generating companies need to be selected in a Public Call of ANEEL and have to give a guarantee. The companies selected by ANEEL need to pay a monthly connection charge to the concessionaire of transmission that will be calculated by the proportion of power injected in the access point to the basic grid and also to the investments done by the company between the point of access in the basic grid and the connection to the ICG.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

The PROINFA system, enacted by Law No. 10,438/2002, included a local content requirement. Thus, as per Article 3, § 4º only producers complying with the 60% local content requirement for equipment and services for the first phase of the program and 90% for the second phase, were qualified for the auction.

Subsequent auctions, such as the 2009 wind energy auction did not contain such a local content requirement, although the Bidding Notice set forth that only wind turbines with a capacity of more than 1,500 kW could be imported. The same limitation on the import of equipment was implemented in the 2010 auctions and in the auctions that are scheduled to take place in August 2011.

However, please note that local content requirements for equipment and services are also condition to qualify certain financing facilities of the BNDES, the Brazilian National Development Bank, including the FINEM[2] and FINAME[3].

12. What are the other incentives available to renewable energy generation companies?

Despite the lack of a general long-term policy regarding renewable energy, there are a number of incentives available to renewable energy generation companies.

a) Discount in connection tariffs:

ANEEL supervises and regulates the access to distribution and transmission systems and sets the tariffs and charges for the use of and access to such systems. Tariffs are (i) TUSD, a tariff charged for the use of the exclusive distribution system of the distribution company; and (ii) TUST, a tariff charged for the use of the base network and other transmission facilities. Additionally, distribution companies of the South/Southeast interconnected power system pay a charge for the transportation of electricity from Itaipu and some distribution companies that access the shared transmission system pay a connection charge.

TUSD is paid by generators and free consumers for the use of the concessionary's distribution system to which they are connected and is adjusted annually taking into consideration two factors: inflation in the year and investments in network expansion, maintenance and operation made in the previous year. The monthly charge to be paid by the entities connected to the distribution system, by connection point, is calculated by multiplying the use amount, by the tariff established by ANEEL, in R$/kW. Distribution concessionaries receive the TUSD from Free Consumers located in their concession area and possible distribution companies connected to their distribution systems.

2 FINEM is a financing line to support infrastructure projects. To find more information about these financial facilities please see; *http://inter.bndes.gov.br/english/finem.asp*.

3 FINAME is Special Agency for Industrial Financing of BNDES. It finances through accredited financial institutions, for the production and commercialization of new domestically manufactured machinery and/or equipment accredited with BNDES. To find more information about this financing facilities, please refer to; *http://inter.bndes.gov.br/english/ finame.asp*.

TUST is paid by distribution companies, generation companies and Free Consumers for the use of the base network and is adjusted annually according to (i) inflation; and (ii) annual revenues permitted to transmission concessionaries set by ANEEL. Under the principles set by ANEEL, the owners of the different parties of the main transmission network transferred to the coordination of their facilities to the ONS in exchange for the regulated payments of transmission systems users. Network users entered into contracts with the ONS that grant them the right to use the transmission network in exchange for the payment of the published tariffs. Other portions of the network owned by transmission companies but that are not considered an integral part of the transmission network are made available directly to interested users that pay a specific fee.

Section 26, § 1º of Law No. 9,427/1996 (as amended) establishes that discounts on distribution and transmission tariffs shall be available to small hydroelectric plants, solar, wind, biomass and qualified co-generation projects with power injected in the transmission and distribution system equal to or less than 30 MW.

ANEEL Resolution No. 77/2004, granted a 50% reduction in the tariffs. The same Resolution established in some specific cases the reduction of 100% of the tariff, as follows: (i) PCHs with a power higher than 1 MW and lower than 30 MW that initiated commercial operation between 1 October 1999 and 31 December 2003; (ii) operate with wind, biomass or by a qualified co-generation process and that initiated the commercial operation between 23 April 2003 and 31 December 2003; (iii) use as energetic input, at least 50% of biomass composed by solid waste and/or biogas of landfill or animal or vegetal waste, as well as sludge from sewage treatment plants; and (iv) the power plants that have their reduce percentage of generation established by an authoritative act and initiated the commercial operation until 31 December 2003.

In the first semester of 2012, another TUSD and TUST reduction was granted to solar generators: pursuant to ANEEL Resolution No. 481, dated as of 17 April 2012, the tariff charged for the transportation of the energy from a solar source to the interconnected system was reduced in 80% for a 10 years period considering projects entering into commercial operation until December, 2017. As for solar projects entering into commercial operation after December, 2017, the referred resolution grants a 50% reduction over TUSD and TUST.

b) According to Section 26 § 5º of Law No. 9,427/1996 the generators of renewable energy have the possibility of commercializing energy with potentially free consumers in case that they inject in the system of transmission and distribution a power equal or lower than 50,000 kW. In this case, the generators can supply the energy to the potentially free consumer in conjunction with other renewable energy generators to the limit of 49% of the energy generated by them. Before this Law only the generators with more than 3,000 kW and with a tension equal or superior to 69 kV had the possibility to commercialize the remaining energy generated with free consumers. The conditions for the commercialization of the generators of renewable energy are defined in the ANEEL Resolution No. 247/2006, further amended by the Resolution No. 323/2008 and 376/2009.

c) Another type of incentive that is applicable for renewable energy is the Electricity Development Account ("CDE"). This mechanism was created on April 2002 by the Brazilian government) to promote (i) competition of the alternative sources market, such as from wind, biomass, PCHs, natural gas, and Brazilian minerals, in areas

served by interconnected power systems; and (ii) the universal supply of electricity services. CDE is effective for 25 years and is managed by Eletrobrás.

CDE funds come from annual payments made for the use of public resources, fines imposed on concessionaries, permission holders and companies authorized by ANEEL, and the fees paid by all entities that purchase and sell power to end consumers.

CDE can also be used to subsidize tariffs to low-income household consumers when funds that the Brazilian government uses for such purpose are insufficient. Low income consumers are those served by single-phase circuits with a monthly consumption from 80 to 220 kWh/month, registered in the single registry of the Brazilian government or in the family support program of the Brazilian government by 27 February 2006.

d) The Brazilian Federal Constitution sets forth -in its Article 21 (XIX) - that PCHs don't have to pay the financial compensation for the use of the water sources. Law No. 9,427/96 (Section 26 § 4º) states that the water plants with a power equal or lower than 30,000 that maintain the characteristics of a PCH can use this incentive.

e) The Fuel-Consumption Account has been in force since 1993 and collects funds from the electric-power concessionaires of the interconnected grid to subsidize the price of diesel fuel for thermoelectric-generation facilities in isolated areas of the country not serviced by the national grid (mainly in the North region). It is important to note that, as established by Law No. 12,111/2009 in Sections 3 and 4, CCC can also be used for companies that don't generate thermoelectric energy but are also part of the isolated system. Thus, the companies that generate renewable energy can request the subsidy of the fund (subrogate in the right of the other companies) if they prove that the energy generated will be used as a substitute of the thermoelectric generation in the isolated system.

CCC funds are managed by Eletrobrás. It was ANEEL's role to set the value of the early quotas to be paid by electric- power distributors to provide funds for the fuel-consumption account. Before the approval of the Provisional Measure 579/2012, converted into Law No. 12,783/2013 these charges were in turn, transferred to consumers by means of a monthly additional contribution included in their electricity bills. However, the above mentioned Provisional Measure established that the payment of fuel-consumption account is no longer required. Despite this provision, CCC´s resources shall still be used to subsidize the price of diesel fuel for thermoelectric-generation facilities in isolated areas of the country not serviced by SIN.

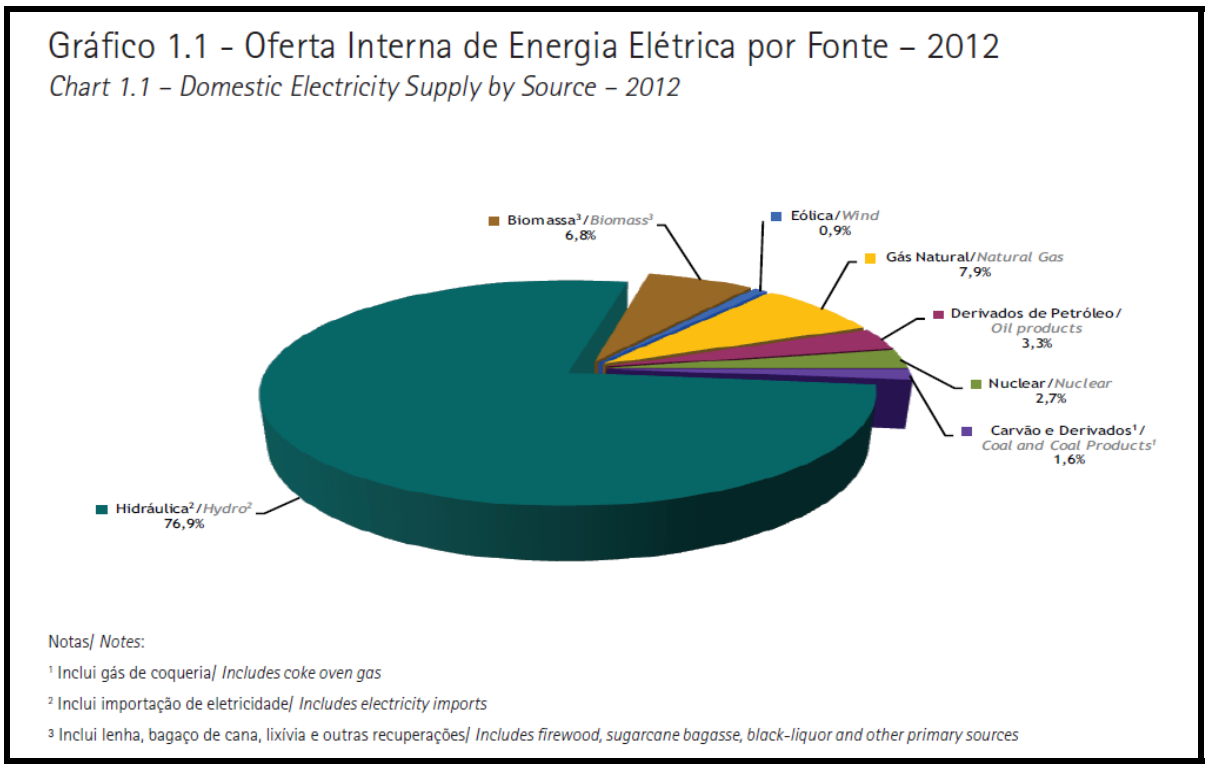
STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

According to data published by the Energy Research Company – EPE, on 2012, Electricity generation in Brazil, including public service power plants and self-producers, was 552.5 TWh in 2012, which is 3.9% higher than in 2011.

Public service plants remain as the main electricity generators, sharing 87,5% of total generation. Hydropower, the main electricity source, has decreased 2.6% on 2012. Net imports of 40,3 TWh, plus domestic generation, amount to 592.8 TWh domestic electricity supply, which is 4.4% higher than in 2011. Final consumption was 498.4 TWh, which is 3.8% higher than the consumption in 2011.

As can be seen in the graph below, hydroelectric power plants continue to provide a large percentage of the electricity in Brazil, accounting for 76.9% of the domestic supply. Generation of electricity from other renewable sources of energy continues to be incipient. In this sense, generation from wind source only accounts for 0.9% of the domestic supply and generation of energy from biomass for 6.8%. However, as referred below, these figures are increasing significantly as a result of the auctions coordinated by ANEEL for purchase of power from renewable sources. As such, the installed power from renewable sources is to increase significantly in the coming years.



Source: 2013 Balance of National Energy – EPE

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Croatia

Selma Šehović

MARIĆ & CO

GENERAL

1. What is the nature and importance of renewable energy in your country?

In Croatia more than half of the total electricity consumption is covered by local generation dominated by large hydropower and gas/coal fired thermal power plants. In 2012 the gross electricity consumption reached up to 17,491 GWh, out of which 9,897 GWh were produced locally and the remaining part imported from neighbouring power systems. It has to be noted that Croatia is also importing electricity produced in the Krško NPP (Slovenia), which is 50% owned by the Croatian State-owned company Hrvatska Elektroprivreda ("HEP"). Net import of electricity produced from nuclear energy in 2012 reached up to 2,622 GWh within the total imported amount of 13,191 GWh. Croatia also exported up to 5,567 GWh.

Local production in hydropower and thermal power plants constitutes more than 90% of total electricity production per year. Considering that high portion of hydropower potential is already exploited and there is a strong dependence on imported coal and natural gas, Croatia is consistently looking for new opportunities to diversify the energy sources. Potential to become a net exporter of electricity, well-developed grid and strategic geographic position for power trading and transportation between Balkans and Central/Western Europe encourages Croatia to seek for an increase of local power generation capacities. Development of the LNG and renewable energy projects are currently targeted for diversified and sustainable solutions.

At the beginning of 2013, the operational capacities of renewable energy projects, except for hydropower, increased with 58 MW reaching 193 MW, including 175 MW of wind farms. Several renewable energy projects were already operational: 6.7 MW based on biomass, 7.1 MW in biogas power plants, and solar power plant capacities reached 3.9 MW. Out of more than 6,000 MW in authorised renewable energy projects, more than 5,500 MW were wind parks.

Determined by its EU accession in 2013, Croatia agreed to a mandatory national target for renewable energy of 20% in gross final energy consumption by 2020. The Energy Development Strategy 2009 included the strategic objective of 35% share in total electricity generation from renewable energy, including large hydropower plants.

In October 2013 Croatia adopted its National Renewable Energy Action Plan ("NREAP") which shifts the focus from encouraging wind farm construction to energy production from biomass, biogas, cogeneration plants and small hydropower plants. This shift has also been reflected in a newly adopted tariff scheme applied from 1 January 2014, which reduced the total incentive costs and abolished the feed-in tariff for all wind power plants and for most other power plants using renewable energy source with an installed capacity over 5 MW.

The NREAP is in line with the Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources. In order to reach the overall target of 20% by 2020, the NREAP repeated the strategic target of 35% share of renewable energy in electricity production,

as well as 10% share of renewable energy in transport (i.e., biofuels) and 20% share in heating and cooling.

At the end of 2013, the share of renewable energy sources accounted up to 16% in gross final energy consumption, which indicates a significant increase comparing to 12.6% recorded in 2006. Total investments in the renewable energy sector are estimated to require up to HRK 13.9 billion (approximately EUR 1.8 billion).

It is also worth mentioning, that an increasing number of Croatian Adriatic islands wants to be independent in terms of energy and are turning towards renewable energy sources, which when owned by citizens, are expected to become a strong lever for local sustainable development. The island of Krk was the first in Croatia to establish an energy cooperative with the aim of promoting the use of renewable energy sources among the local population and businesses.

Considering a reviewed scheme of incentives, reduced administrative burden for new developments, which still remains complicated due to high number of authorisations required, as well as involvement of local communities and expected EU support, Croatia should become an attractive country for new renewable investments, especially in developments of biomass and biogas power generation technologies.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Renewable energy is defined by the Energy Act 2012 and the Electricity Market Act 2013 as the energy from renewable non-fossil sources, i.e., aerothermal energy, biomass, tidal energy, wind and solar energy, hydropower, geothermal and hydrothermal energy, landfill gas, sewage treatment plant gas, and biogases.

The definition and coverage of renewable energy under the legislation in force fully corresponds with the respective concept established in the Directive 2009/28/EC, which has been transposed to the domestic legislation of Croatia during its legal and regulatory reform of the energy sector in 2012 and 2013 in line with the EU pre-accession commitments.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

Regulation of the renewable energy sector in Croatia is based on the domestic transposition and implementation of the measures stipulated in the Directive 2009/28/EC. However, unlike in most of the other EU Member States, there is no separate law regulating the renewable energy sector in Croatia. Instead of that, legal framework thereto is established through several energy laws adopted by the Parliament and secondary legislation acts passed by the Government, the Ministry of Economy and the Croatian Energy Regulation Agency (HERA).

Renewable energy sector in Croatia is regulated by the following principal laws:

- *Energy Act 2012*, which harmonises the Croatian legislation with the EU Third Energy Package and regulates measures to ensure a secure and reliable energy supply, efficient power generation and its use, as well as stipulates principles for the formation and implementation of the energy policy and strategy. It also defines key legal concepts applied in the energy sector, including promotion of the use of renewable energy sources, and sets the framework for the pricing of energy, the system of guarantees of the electricity

origin, and general principles of incentives for an increased use of renewable energy and cogeneration.

- *Electricity Market Act 2013*, which regulates the rules and measures for safe and reliable activities in the electricity sector, including the generation of electricity from renewable sources. It also sets the terms and conditions for electricity tarding and organisation of the market, and lays down the rules relating to the customers protection, access to the market, organisation of electricity undertakings, principles for cross-border transmission of electricity, etc.

- *Heat Act 2013*, which regulates organisation of the district heating sector in Croatia and sets the terms and conditions for activities therein, and which transposed the requirements of the Directive 2009/28/EC related to the use of energy from renewable energy sources for heating.

- *Act on Regulation of Energy Activities 2012*, which provides for the establishment and implementation of the regulatory system for the energy sector and the procedure for establishing the HERA, its organisation, competences and decision-making.

The following secondary legislation acts, adopted by the Government and the Ministry of Economy, are of key importance for the renewable energy sector:

- *Tariff System for the Production of Electricity from Renewable Energy Sources and Cogeneration*, as adopted by the Government in 2013 (wording currently in force), which establishes feed-in tariffs and indicates application of reference prices for electricity produced from renewable energy sources and in cogeneration power plants.

- *Regulation on a Minimal Share of Incentivised Production of Electricity from Renewable Energy Sources and Cogeneration*, as issued by the Government in 2007 and further amended, which prescribes the conditions for a minimal off-take of electricity produced from renewable energy sources and in cogeneration power plants, and respective obligations by the electricity market participants.

- *Regulation on Incentives for the Production of Electricity from Renewable Energy Sources and Cogeneration*, as issued by the Government in 2013, which defines the manner of calculation, collection, use, distribution of and payments of compensations with regard to an incentive fee to be paid by electricity customers for electricity produced from renewable energy sources and in cogeneration power plants.

- *Regulation on Establishment of a System of Guarantees of Origin for Electricity*, as adopted by the Government in 2013 and further amended, which establishes a system of guarantees of the electricity origin, with the aim of determining the share or quantity of electricity produced from renewable energy sources and cogeneration in the total amount of electricity supplied by a supplier to final customers

- *Rulebook on Acquiring the Status of Eligible Producer of Electricity*, as adopted by the Ministry of Economy in 2013, which establishes the terms and conditions for electricity undertakings planning to produce electricity from renewable energy sources or in cogeneration power plants, to acquire for the status of eligible producer and thus to qualify for incentive schemes applied.

- *Rulebook on the Use of Renewable Energy Sources and Cogeneration*, as adopted by the Ministry of Economy in 2012, which defines the groups of power plants using renewable energy sources and cogeneration, as well as prescribes the form, contents and manner for keeping the register of renewable energy projects and power plants using renewable energy sources and cogeneration, and of eligible producers.

Specifically for wind power plants, the *Criteria for Registration of Wind Power Projects on the List for Connection to the Grid* and the *Procedure for Issuance of Preliminary Authorisation for Wind Power Plants and General Agreements on the Connection of Wind Power Plants* do apply, as adopted in February 2006 by the Croatian transmission system operator – HEP-TSO d.o.o. (currently – HOPS d.o.o.).

Other secondary legislation acts relevant for activities in the renewable energy sector are: the *Rules on Organisation of the Electricity Market*, the *Rules on Balancing of the Power System* and the *Rulebook on Charges for Connection to the Electricity Network*, as adopted in 2006 and further amended, as well as the *Electricity Grid Code* and the *General Conditions for Supply of Electricity*, both adopted in 2006.

As regards biofuels, activities in the field are regulated by the *Act on Biofuels for Transport 2009* (as further amended) and by its implementing regulations, including the *Rules on Measures to Encourage the Use of Biofuels in Transport* (2010), the *Conditions and Procedural Rules for Incentives for the Production of Biofuels for Transport* (2011), the *Regulation on Encouraging the Production of Biofuels for Transport* (2011), as well as annual Governmental decrees on the amount of a compensation fee and on the amount of subsidies for encouragement of biofuel production.

Strategic guidelines for developments in the renewable energy sector are set by the *Energy Strategy*, adopted by the Parliament in 2009, as well as by the *NREAP*, adopted by the Government in 2013, and the *National Action Plan to Encourage Production and Use of Biofuels in Transport for the Period 2011-2020*, adopted by the Ministry of Economy, Labour and Entrepreneurship in 2010.

4. What are the principal regulatory bodies in the renewable energy sector?

The following State institutions in Croatia are assigned by the applicable legislation with competences and regulatory powers in the renewable energy sector:

- *The Government* forms the national energy policy, submits the Energy Strategy to the Parliament and ensures its implementation, establishes public service obligations, prescribes energy emergency measures, adopts the NREAP, also passes technical and safety requirements for energy infrastructures, long-term and annual energy balances, as well as other secondary legislation acts regulating performance in the energy sector, including the use of renewable energy sources and incentive schemes applied thereto.

- *The Ministry of Economy* (previously – the Ministry of Economy, Labour and Entrepreneurship), which is in charge of the energy sector, implements national energy policies established by the Parliament and formed by the Government, submits proposals for legal acts and energy balances to be adopted by the Government, ensures reliable and secure supply of energy, adopts secondary legislation acts regulating energy activities, issues energy permits for new electricity generation facilities, and also carries out an administrative supervision of the energy sector.

- *The Ministry of Environmental and Nature Protection* implements national policies in the field of the environmental protection, including those related to safe construction, maintenance and operation of the energy infrastructure, as well as authorises development of energy facilities.

- *The Croatian Energy Regulation Agency (HERA)* is a designated independent regulatory authority vested with powers in the energy sector under the Act on Regulation of Energy Activities 2012 and other applicable laws pursuant to the requirements of the so-called EU Third Energy Package (Electricity Market Directive 2009/72/EC and Gas Market Directive 2009/73/EC). HERA is in charge of issuance of licenses for activities in the energy sector, monitoring of energy activities, regulation of the electricity market, granting the status of eligible producer, adoption of methodologies for calculation of regulated tariffs and setting those tariffs, monitoring the implementation of requirements for transparency and independency of energy activities, monitoring the security of supply, and performing other regulatory functions.

- *The State Inspectorate* carries out an inspectional supervision of the implementation of requirements for the energy infrastructure objects and related operational activities, as established by the Energy Act 2012, other applicable laws and regulations.

Other competent State institutions, bodies and authorities, as well as local and self-government administrations are assigned with specific functions in the energy sector, mainly related to the planning of the energy infrastructure developments, authorisations for construction of facilities, enhanced local use of renewable energy sources and energy efficiency.

5. What are the main permits/ licenses required for renewable energy projects?

Development, construction and operation of power plants using renewable energy sources are subject to the following main administrative procedures, contractual arrangements and authorisations (provided in chronological order):

- *Environmental impact assessment (EIA)* performed by the Ministry of Environmental and Nature Protection under the terms and conditions stipulated in the Environmental Protection Act 2007 and its implementing regulations. The EIA is mandatory for wind power plants with a projected installed capacity of more than 20 MW and for all other power plants using renewable energy sources with a projected installed capacity of more than 100 MW. In case of power plants with a projected installed capacity between 10 MW and 100 MW (for wind power plants – between 10 MW and 100 MW), a full EIA is performed only if the Ministry considers that as necessary.

- *Location permit* issued by competent local administrations or the Ministry of Environmental and Nature Protection, depending on the State-level importance of the infrastructure project, under the terms and conditions stipulated in the Physical Planning Act 2013 and its implementing regulations. A location permit issued by the Ministry is inter alia required for construction of power plants of 20 MW of installed capacity or higher, together with accompanying facilities and buildings.

- *Energy permit* issued by the Ministry of Economy, which authorises to build and run power plants using renewable energy sources. Each developer of the renewable energy project is obliged to hold a final and binding energy permit before the construction permit stage.

- *Construction permit* issued by competent local administrations or the Ministry of Environmental and Nature Protection under the terms and conditions stipulated in the Building Act 2013 and its implementing regulations. For power plants of less than 20 MW of installed capacity, only one decision allowing the construction is required, instead of separate location and construction permits.

- *Preliminary decision on the status of eligible producer* to be acquired by the decision of HERA in accordance with the Rulebook on Acquiring the Status of Eligible Producer of Electricity, as adopted by the Ministry of Economy.

- *Power purchase agreement* with the Croatian Energy Market Operator (HROTE) guaranteeing the off-take of electricity produced from renewable energy sources for a period of applied incentive schemes (currently – 14 years).

- *Grid connection and use contract* to be entered with the transmission system operator (HOPS d.o.o.) or the distribution system operator (HEP-DSO d.o.o.), following the applicable procedural requirements for connection to the grid, including those specifically applied for wind power plants. It has to be noted that certain approvals of the system operator on the possibility for connection to the grid may be required before issuance of the energy permit.

- *Use permit* to be obtained from the authority that issued the relevant construction permit. The use permit authorises to proceed with the use and operation of the power plant.

- *License for generation of electricity* issued by HERA for a period from 5 to 30 years. Such a license authorises production of electricity in the power plant and its delivery to the grid. Licenses are issued under the terms and conditions stipulated in the Regulation on Licenses for Performing Energy-Related Activities, as adopted by the Ministry of Economy in 2007 and further amended.

- *Final decision on the status of eligible producer* granted by HERA after all other authorisations, for the use and operation of the power plant, and for the production of electricity are obtained.

Please note that decisions on the status of eligible producer and power purchase agreement with the HROTE are required only in case the investor (operator of the power plant) intends to apply for applicable incentives, i.e., power purchase and minimum price guarantees.

A simplified permitting procedure is applied for integrated solar power plants. The distribution system operator HEP-DSO d.o.o. provides "one-stop-shop" services in obtaining all relevant authorisations and preparing contractual arrangements for developers of such power plants based on their application for connection to the distribution grid.

Construction of hydropower plants is subject to additional authorisation requirements under the terms and conditions of the Water Act, as adopted in 2009 and further amended. At the stage of obtaining a location permit for the hydropower project, the developer must apply for so-called "water conditions" issued by the Croatian Waters. Only after obtaining water conditions may the developer apply for a water concession, decisions on which are made by the Ministry of Agriculture (for power plants of less than 5 MW of installed capacity), the Government (installed capacity from 5 to 20 MW), or the Parliament (installed capacity from 20 MW).

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Electricity produced from renewable energy sources (the Excise Duty Act 2013 expressly refers to wind, tidal, geothermal and solar energy, and biomass) and consumed by the producer for its own needs is exempted from the excise duty.

Biofuels for transport are also exempted from the excise duty which is due for regular unleaded petrol. The Excise Duty Act 2013 defines that biofuels are considered to be liquid or gaseous fuels produced from biomass and defined by the Act on Biofuels for Transport 2009.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The HROTE is obliged by the Electricity Market Act 2013 to purchase the entire amount of electricity generated by so-called "eligible producers" and delivered to the grid. Each electricity undertaking, which holds all necessary authorisations for construction of the power plant using renewable energy sources, may apply for the status of eligible producer. The status of eligible producer is acquired by the decision of the HERA in accordance with the Rulebook on Acquiring the Status of Eligible Producer of Electricity, as adopted by the Ministry of Economy.

Based on the preliminary decision on the status of eligible producer, an electricity undertaking may enter into the power purchase agreement with the HROTE, which stipulates the terms and conditions for practical implementation of the guaranteed purchase of electricity from renewable energy sources, respective rights and obligations of the HROTE and electricity undertaking, and also determines the electricity price in line with applicable incentives (i.e., minimum price guarantee). The final decision on the status of eligible producer is being granted after the electricity undertaking becomes fully authorised as a producer of electricity and enters into the contract for the grid connection and use contract with the system operator in charge.

The transmission system operator and distribution system operator, depending on the grid to which the power plant is connected, are obliged to accept to the grid all deliveries of electricity from the power plant operated by any eligible producer. Quantities of electricity delivered to the grid have to be equal to the amounts purchased by HROTE from each eligible producer.

Electricity purchased by HROTE is then being mandatory sold to each electricity supplier operating in Croatia, including those performing the supply of electricity within the framework of public service obligation. Suppliers are obliged for an off-take of electricity purchased from eligible producers in the amounts individually calculated and assigned by HROTE in accordance with the conditions prescribed in the Regulation on Incentives for the Production of Electricity from Renewable Energy Sources and Cogeneration, as adopted by the Government.

Purchase and sale of electricity is being realised on monthly basis in line with respective contracts between eligible producers and HROTE, on one hand, and between HROTE and suppliers, on the other hand. Each eligible producer receives the minimum price guarantee, i.e., the feed-in tariff or reference price, as explained herein below, under the terms and conditions stipulated in the Tariff System adopted by the Government. Whereas suppliers are obliged to pay to the HROTE an incentive fee set by the

Governmental decree and collected from customers. An incentive fee applied from 1 November 2013 is equal to HRK 35 per MWh (approx. EUR 4.6 per MWh). Incentive fees collected by HROTE are used for the payoff of minimum price guarantees to eligible producers.

The guaranteed purchase of electricity is applied for a fixed eligibility period of 14 years, as introduced under the Tariff System adopted by the Government in May 2013. Previously, the eligibility period of 12 years has been applied.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

In Croatia, renewable energy is mainly supported through a minimum price guarantee established in a form of a feed-in tariff. Each eligible producer has the right to receive a feed-in tariff for the entire amount of electricity produced and delivered to the grid depending on the type of renewable energy sources used and installed capacity of its facilities.

In general, all renewable energy technologies are applicable for the feed-in tariff, however, certain limitations depending on the installed capacity of the facility do apply, as well as differentiation of tariffs based on the said capacity is introduced.

Those eligible producers, which do not qualify for the application of feed-in tariffs, are still allowed to sell their electricity to HROTE under the guaranteed purchase scheme, as explained hereinabove, at the reference price (RC) equal to the amount of applicable tariff rates for active energy at a single daily tariff for supply of electricity within the universal service, as annually set under the terms and conditions stipulated in the universal service supply methodology adopted by HERA.

Feed-in tariffs, as they were applied for electricity from renewable energy sources under the Tariff System adopted in May 2013, are provided in *Table 1* herein below.

Table 1. Minimum price guarantees (Tariff System for RES-E, May 2013)

RES technology	Installed capacity (production per year)	Feed-in tariff (per kWh)
Wind energy	≤ 1 MW	HRK 0.72 (approx. EUR 0.094)
	> 1 MW	HRK 0.71 (approx. EUR 0.093)
Solar energy (applied to all PVs, if no specific tariff is set)	≤ 1 MW	HRK 1.10 (approx. EUR 0.14)
Solar energy (building-integrated PVs)	≤ 10 kW	HRK 2.63 (approx. EUR 0.35)
	From > 10 kW to ≤ 30 kW	HRK 2.23 (approx. EUR 0.29)
	From > 30 kW to ≤ 300 kW	HRK 1.65 (approx. EUR 0.22)
Solar energy (non-integrated PVs built on the site of the existing building)	≤ 10 kW	HRK 2.00 (approx. EUR 0.26)
Solar energy (PVs used to produce electricity and to generate heat or hot water)	≤ 10 kW	HRK 3.16 (approx. EUR 0.41)
	From > 10 kW to ≤ 30 kW	HRK 2.45 (approx. EUR 0.32)
	From > 30 kW to ≤ 300 kW	HRK 1.70 (approx. EUR 0.22)
Hydropower	≤ 1 MW (≤ 500 MWh)	HRK 1.20 (approx. EUR 0.16)
	≤ 1 MW (> 500 to ≤ 1000 MWh)	HRK 0.80 (approx. EUR 0.11)
	≤ 1 MW (> 1000 MWh)	HRK 0.60 (approx. EUR 0.08)
	From > 1 MW to ≤ 10 MW (≤ 5000 MWh)	HRK 1.00 (approx. EUR 0.13)
	From > 1 MW to ≤ 10 MW (> 5000 to ≤ 15000 MWh)	HRK 0.70 (approx. EUR 0.09)
	From > 1 MW to ≤ 10 MW (> 15000 MWh)	HRK 0.57 (approx. EUR 0.08)
Geothermal energy	All capacities	HRK 1.20 (approx. EUR 0.16)
Solid biomass (excluding waste)	≤ 300 kW	HRK 1.30 (approx. EUR 0.17)
	From > 300kW to ≤ 2 MW	HRK 1.20 (approx. EUR 0.16)
	From > 2 MW and ≤5 MW	HRK 1.15 (approx. EUR 0.15)
	From > 5 MW to ≤10 MW	HRK 1.05 (approx. EUR 0.14)
	From > 10 MW	HRK 0.90 (approx. EUR 0.12)
Biogases (from agricultural waste)	≤ 300 kW	HRK 1.42 (approx. EUR 0.19)
	From > 300 kW to ≤ 2 MW	HRK 1.20 (approx. EUR 0.16)
	From > 2 MW to ≤ 5 MW	HRK 1.12 (approx. EUR 0.15)
Power plants using animal fat	≤ 5 MW	HRK 1.65 (approx. EUR 0.22)

Solar power plants with installed capacity over 1 MW, as well as power plants using liquid biofuels, landfill gas and sewage treatment plant gas, and power plants using other renewable energy sources are not eligible for the feed-tariff. Electricity generated by such producers is being purchased at the RC equal to HRK 0.53 per kWh (approx. EUR 0.07 per kWh).

Additionally, all producers were eligible for a bonus on top of their feed-in tariffs, based on the contribution of their power plant to the local community, economic growth, employment, development of public services, and its general influence on the improvement of the quality of welfare. This bonus was allowed to amount up to an extra 15% on top of the feed-in tariff.

Based on a new Tariff System adopted in October 2013, feed-in tariffs were significantly reduced and application of the RC extended, as well as application of the above referred bonus scheme was abolished. Feed-in tariffs, as applied for electricity from renewable energy sources from 1 January 2014, are provided in *Table 2* herein below.

Table 2. Minimum price guarantees (Tariff System for RES-E, October 2013)

RES technology	Installed capacity	Feed-in tariff (per kWh)
Solar energy (roof-top solar power plants)	≤ 10 kW	HRK 1.91 (approx. EUR 0.25)
	From > 10 kW to ≤ 30 kW	HRK 1.70 (approx. EUR 0.22)
	From > 30 kW to ≤ 300 kW	HRK 1.54 (approx. EUR 0.20)
Solar energy (PVs used to produce electricity and to generate heat or hot water)	≤ 10 kW	HRK 2.29 (approx. EUR 0.30)
	From > 10 kW to ≤ 30 kW	HRK 1.87 (approx. EUR 0.24)
	From > 30 kW to ≤ 300 kW	HRK 1.59 (approx. EUR 0.21)
Hydropower	≤ 300 kW	HRK 1.07 (approx. EUR 0.14)
	From > 300 kW to ≤ 2 MW	HRK 0.93 (approx. EUR 0.12)
	From > 2 MW to ≤ 5 MW	HRK 0.88 (approx. EUR 0.11)
Geothermal energy	≤ 5 MW	HRK 1.20 (approx. EUR 0.16)
Solid biomass (including biodegradable industrial and municipal waste)	≤ 300 kW	HRK 1.30 (approx. EUR 0.17)
	From > 300kW to ≤ 2 MW	HRK 1.25 (approx. EUR 0.165)
	From > 2 MW to ≤5 MW	HRK 1.20 (approx. EUR 0.16)
Biogases (from agricultural waste)	≤ 300 kW	HRK 1.34 (approx. EUR 0.18)
	From > 300kW to ≤ 2 MW	HRK 1.26 (approx. EUR 0.165)
	From > 2 MW to ≤ 5 MW	HRK 1.18 (approx. EUR 0.15)
Landfill gas and sewage treatment plant gas	≤ 300 kW	HRK 1.34 (approx. EUR 0.18)
	From > 300kW to ≤ 2 MW	HRK 1.26 (approx. EUR 0.165)
	From > 2 MW to ≤ 5 MW	HRK 1.18 (approx. EUR 0.15)

All wind power plants, ground-mounted solar power plants with installed capacity up to ≤ 5 MW, hydropower plants with installed capacity from > 5 MW to ≤ 10 MW, solid biomass power plants (including biodegradable and municipal waste) with installed capacity from > 5 MW, biogas power plants, including those using agricultural waste, landfill gas and sewage treatment plant gas, with installed capacity from > 5 MW, as well as all biofuel power plants are not eligible for the feed-tariff. Electricity generated by such producers is being purchased at the RC equal to HRK 0.53 per kWh (approx. EUR 0.07 per kWh).

The applicable feed-in tariff or the RC for a particular producer is determined under and fixed in the power purchase agreement entered with the HROTE. Minimum price guarantees, when granted to the producer, do apply for a fixed eligibility period of 14 years starting from the operational start of the electricity generation.

Feed-in tariffs or the RC do not include a degression mechanism. However, the exact value of the feed-in tariff may be corrected on an annual basis using the Consumer Price Index published by the Croatian Bureau of Statistics. The RC may be corrected only based on the respective universal service supply methodology adopted by HERA.

However, it has to be specifically noted that HROTE was obliged under the Tariff System adopted in May 2013 to enter into the power purchase agreements and to off-take the electricity produced at the applicable feed-in tariff or RC only for the first 15 MW of integrated and 10 MW on non-integrated solar power plants. Based on the Tariff System applied from 1 January 2014, these caps were reduced to the maximum of 5 MW of integrated solar power plants, 2 MW of integrated solar power plants installed on the buildings owned by the State, local or self-government bodies, and 5 MW of non-integrated solar power plants.

Eligible producers that use biomass together with fossil fuels have the right to receive the guaranteed price for the electricity produced from renewable energy sources if the fossil fuel part does not exceed 10% of the total fuel used for the electricity generation.

Each electricity producer, which does not qualify for the feed-in tariff or for which the RC is not applied, i.e., which does not fall within the above specified groups for incentivised generation of electricity, and therefore is not eligible for a purchase guarantee, may sell the electricity produced in its power plant on the electricity market (whether on bilateral or organised market) under the terms and conditions stipulated in the Rules on Organisation of the Electricity Market, as passed by HROTE and approved HERA.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Croatia is an Annex I Party of the United Nations Framework Convention on Climate Change (UNFCCC) from 1996. The Parliament ratified the Kyoto Protocol on 27 April 2007, which came into force on 28 August 2007.

Following ratification of the Kyoto Protocol, during the year 2007 and 2008, Croatia adopted national rules for the implementation of flexible mechanisms of the Kyoto Protocol, established national system for the estimation of green-house gas (GHG) emissions and removals, formed environmental pollution registry, introduced relevant amendments to the national legislation regulating environmental protection, as well as adopted the National Strategy for Implementation of the UNFCCC and the Kyoto Protocol (2007) and secondary legislation inter alia regulating monitoring of GHG emissions and the emission trading scheme (ETS).

From 1 January 2013, i.e., 6 months ahead of its membership in the EU, Croatia joined the EU ETS at its Phase 3 for a trading period from 2013 to 2020. Based on the Governmental decision, 73 installations are be covered by the EU ETS. The Croatian companies were required to surrender allowances (EUAs) in line with their emissions by April 2014. Installations with the largest emissions belong to the State-owned utility HEP that, along with other power producers, will not be entitled to free EUAs.

The Phase 3 of the EU ETS, which is established and regulated under the Directive on Emissions Trading (Directive 2003/87/EC, as amended by the Directive 2009/29/EC), introduced the following main changes in the scheme: (i) a single EU-wide cap on emission applies in place of the previous system of national caps; (ii) auctioning, not free allocation, is now the default method for allocating EUAs (more than 40% of EUAs were auctioned in 2013 and this share is rising progressively each year); (iii) for those EUAs still given for free, harmonised allocation rules apply based on the EU-wide benchmarks of emissions performance; and (iv) additional sectors and gases are covered by the EU ETS.

The EU accession also means that Croatia is required to limit emissions in sectors not included in the ETS, such as transport and agriculture, to 11% above 2005 levels by 2020.

10. Do renewable energy based power plants have priority for connection to the grid?

The procedure for connection of power plants to the grid is governed by the General Conditions for the Supply of Electricity (2006), whereas technical details for connection are established by the Electricity Grid Code (2006). For wind power plants specific conditions do apply, as adopted by the transmission system operator HOPS d.o.o.

Power plants using renewable energy sources are not given any priorities for connection to the grid. Furthermore, if grid capacity does not allow for any new power plants to be connected, the system operator may refuse the connection, i.e., there are no obligations for the operator to expand its grid in order to enable a power plant using renewable energy sources to be connected.

Costs for connection of the power plant to the electricity grid are borne by the power plant operators and are calculated under the terms and conditions stipulated in the Rulebook on Charges for Connection to the Electricity Network (2006).

The use of the grid is governed by the general legislation on energy, namely – the Energy Act 2013, the Grid Code and the General Conditions for the Supply of Electricity. There are no special provisions applicable to power plants using renewable energy sources. However, system operators in charge are obliged to secure the acceptance to the grid of the entire amount of electricity generated by each eligible producer that does have a valid power purchase agreements with HROTE.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

There is no preferential treatment with regard to any equipment or materials used for developments of the renewable energy infrastructure in Croatia, whether based on origin (locally manufactured or imported) or any other characteristics. The absolute majority of technologies used for the production of electricity from renewable energy sources are imported to Croatia from the EU or worldwide markets.

12. What are the other incentives available to renewable energy generation companies?

Additionally to those incentives explained hereinabove, developers of renewable energy projects may apply for the following renewable energy loans:

- *Environmental Fund loans*. The Fund for Environmental Protection and Energy Efficiency awards interest-free loans to renewable energy projects under the terms and conditions stipulated in the Statutes of the Fund and other legal acts regulating its activities and decision-making. Calls for application for renewable energy loans from the Fund are announced on annual basis. Developers of any renewable energy generation technology may apply for the loan, provided that they have a registered seat in Croatia and invest their own funds into the renewable energy project. The Fund may grant the loan either directly or through a financial institution. The Fund is mainly financed from the State budget, however, other sources of financing are allowed by the applicable legal acts, including donations from legal and natural persons.

- *HBOR loans*. In accordance with the provisions of the Environmental Protection Act 2013, the State is bound to support and finance projects aiming at environmental protection. The Croatian Bank for Reconstruction and Development (HBOR) is therefore obliged to support such projects. On this basis, the HBOR has launched the Loan Programme for Environmental Protection, Energy Efficiency and Renewable Energy, which supports investments in primary sources, such as initial funding, land, buildings, equipment and devices. The HBOR may cover up to 75% of the estimated investment value of the renewable energy project. Loans are granted by competent commercial banks in cooperation with the HBOR. The interest rate (currently 4% with possible reductions) is variable and mainly subject to the decision of the HBOR. The interest rate may also be agreed to be set at the three-month EURIBOR +2% per year.

- As regard biofuels, in addition to the exemption from the excise duty explained hereinabove, the following means of support are applied in Croatia:

- *Biofuel quotas*. Each distributor that trades diesel or petrol for motor vehicles or vessels and is subject to the excise duty, except for small retailers, is obliged for placing biofuels on the market in compliance with the quota obligations under the terms and conditions of the Act on Biofuels for Transport 2009 and its implementing regulations. The general share of biofuels set for 2014 is 2.48% of the overall usage of energy in the transport sector and has to reach 10% in 2020. Methods and formulas for individual calculation of quotas and their adjustment are set by the Ministry of Economy

- *Subsidies for promotion of biofuels*. Eligible producers of biofuel, as regulated by the Act on Biofuels for Transport 2009 and its implementing regulations, are allowed to apply for subsidies paid by HROTE as a cash incentive per each litre of biofuel produced and supplied to the Croatian market. The amount of subsidies is defined by the Government on an annual basis. For 2014 the following subsidies do apply: for biodiesel – HRK 1.7 (approx. EUR 0.22) and for bioethanol – HRK 0.23 (approx. EUR 0.03).

The following biofuels are eligible for the above referred means of support: biodiesel from rapeseed, waste cooking oil and lignocellulosic raw materials, bioethanol from corn, sugar beet and lignocellulosic raw materials, as well as biogas and biomethanol.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

The total net installed capacity of the power plants in Croatia at the beginning of 2013 amounted up to 3,983 MW. Hydro power plants (HPP), including small HPPs and a pump-storage HPP, held up to 53.7%, thermal power plants (TPP) and combined heat and power plants (CHP) – up to 41.5%, and power plants using other renewable energy sources – up to 4,8% of the capacities.

In 2012, power plants in Croatia generated 9,897 GWh of electricity. Out of that number, electricity produced from renewable energy sources, except for large HPPs and pump-storage HPP, constituted up to 510.7 GWh, i.e., up to 5.2% of the total electricity production.

Fig. 1. Electricity generation capacities in Croatia by fuel type (beginning of 2013)

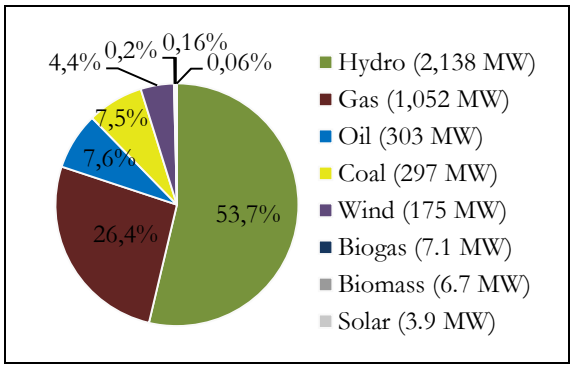
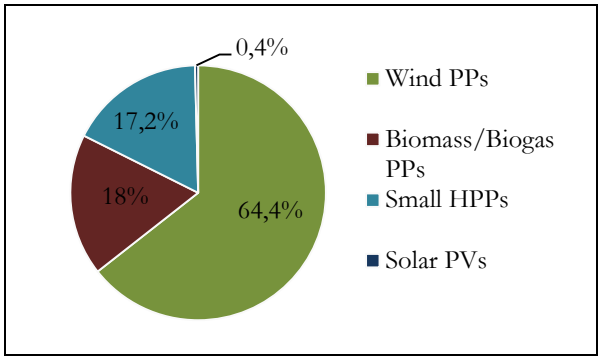


Fig. 2. Electricity generation from renewable energy sources in Croatia (2012)



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GENERAL

1. What is the nature and importance of renewable energy in your country?

The renewable energy sector is a very fast-growing sector within the energy business. Due to recent legislative changes and uncertainty in the sector, development of new renewable sources is rather scarce. The Czech government has made a commitment at the EU level to achieve a share of 13% from renewable energy resources by the end of 2020. At the time of the most recent official statistics (year 2012), this share was 11.43%, and the total production of electricity from renewable sources was 8.06TWh.

2. What is the definition and coverage of renewable energy under the relevant legislation?

A renewable energy resource is any non-fossil resource, specifically wind energy, solar energy, geothermal energy, hydro energy, soil energy, air energy, biomass energy, landfill gas energy, sewage gas energy and biogas energy.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The renewable energy sector is regulated by the following legal regulations:

Act No. 458/2000 Coll., the Energy Act, as amended, and Act No. 165/2012 Coll., on Supported Renewable Sources (the "Act").

Currently, several legislative amendments to the Act are being discussed.

4. What are the principal regulatory bodies in the renewable energy sector?

The main regulatory bodies are the Energy Regulatory Office (the "ERO") and the Ministry of Industry and Trade. Further, OTE, a.s., the Czech electricity and gas market operator administers certain matters concerning the renewable energy sector (administration of registration system, payment administration).

5. What are the main permits/licenses required for renewable energy projects?

Depending on the size and type of renewable energy project, certain construction law and environmental law permits are required (such as zoning permit, construction permit). Further, an electricity generation license needs to be acquired from ERO. Finally, construction of any energy project with capacity in excess of 100 kW requires authorization, issued by the Ministry of Industry and Trade.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

No, the exemption from tax applicable to income generated from certain renewable energy facilities was abolished as of 1 January 2011.

Furthermore, incentives for all PV Plants commissioned between 1 January 2010 and 31 December 2010 (except for units with installed power up to 30 kW) are subject to a withholding of 10% on the feed-in tariff (i.e., fixed prices), and 11% on the green bonus (subsidy added to the market price of the electricity) on electricity produced from 1 January 2014 for as long as the right to receive a subsidy for such PV Plant exists.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Except for hydro power plants with installed capacity not exceeding 10 MW, only producers of electricity generated by renewable resources commissioned by 31 December 2013 have the right to sell the electricity on the market, or to the mandatory buyer (in Czech "*povinně vykupující*")[1] and receive feed-in tariff or green bonus.

Allowing the completion of developed projects, new plants using wind, water, geothermal or biomass energy that had obtained the relevant building permit or authorization for plants with capacity in excess of 100 kW on or before 2 October 2013 will be entitled to the feed-in tariff or green bonus without regard to the limitation in the preceding paragraph, if such plant is commissioned (*uveden do provozu*) by 31 December 2015.

For reasons of transparency, as of 1 July 2014, a producer in the legal form of joint-stock company (or similar) with shares that are not solely dematerialized shares (*zaknihované*), or a producer that, as a foreign entity, fails to produce a declaration of honor identifying the holder of its shares with an aggregate nominal value in excess of 10% of the producer's share capital, including the specification of the source on which the calculation of shareholding is based, shall not be entitled to receive subsidy in any form (neither feed-in tariff nor green bonus).

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The ERO determines feed-in tariffs and green bonuses by the year end for the following calendar year. The feed-in tariffs and green bonuses are guaranteed by the Act for a period of return of investment into the plant. The feed-in tariffs cannot be lowered below 95% of the feed-in tariff guaranteed as of the day of commissioning of respective plant, except if the actual return on investment of such plant is shorter than 12 years (which is the case of a biomass plant, according to the notification of the ERO). Further, the feed-in tariff for the upcoming year cannot be higher than 115% of the current year.

Under the Act, only green bonuses will be provided to new producers for the electricity produced by renewable resources facilities, unless the capacity exceeds 10 MW in case of water power plants and 100 kW in case of any other plants.

[1] Until the mandatory buyer is selected, the regional distribution companies act in such capacity.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Yes, the Czech Republic ratified the Kyoto Protocol. Currently, the emission allowances are distributed within the framework of the third phase (2013 - 2020) of the EU emissions trading system (ETS).

10. Do renewable energy based power plants have priority for connection to the grid?

Yes, renewable energy based power plants in compliance with certain technical requirements, have priority access to the connection to the grid, unless the technical status of the grid and technical reasons do not allow such connection (the main reason for refusing grid connection of a facility is the risk of safe and reliable operation of the distribution grid and entire network).

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

No.

12. What are the other incentives available to renewable energy generation companies?

None.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

The percentage of electricity generated based on each type of renewable energy source is as follows (as of the end of 2012):

Biomass	2.56%
Biogas	2.09%
Water	3.02%
Wind	0.59%
Solar	3.05%
Sewage	0.12%

The data is available at *http://appsso.eurostat.europa.eu/nui/submitViewTableAction.do"*

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LAWIN ATTORNEYS AT LAW

GENERAL

1. What is the nature and importance of renewable energy in your country?

The share of renewable energy sources in the total energy consumption was 24.3% in 2011, whereas the share of renewable energy sources in electricity consumption was 14.9% in 2012 and 12.6% in 2013. The Government has declared that the share of renewable energy sources in total energy consumption is aimed to be 25% by 2020.

Estonian National Development Plan of the Energy Sector until 2020 and Competitiveness Plan – Estonia 2020 set out that in order to ensure sustainable energy supply and consumption, the share of renewable energy sources and cogeneration must be increased in the energy balance. The following is planned to increase the share of renewable energy sources:

- The increase of share of renewable energy in final consumption of energy up to 25% by 2020;
- The share of transport fuels based on renewable energy sources will increase from 0.06% in 2007 – up to 10% by 2020;

The Renewable Energy Action Plan was adopted by the Government in 2010 setting out detailed measures for different sectors to support renewable energy.

At the same time it must be noted that the current Government plans to make changes in renewable energy support. Draft amendments to the Electricity Market Act were initiated by the Ministry of Economic Affairs and Communications in January 2012. The draft amendments have been considered by the Parliament, however as of 22 April 2014 they have not been adopted yet and it remains to be seen whether and to what extent the renewable energy support levels will be changed.

The Estonian renewable energy sources include biomass (wood) as the largest component, but also wind and hydro power. It is expected that the share of biomass and wind energy will increase will increase the share of fossil fuel decreases.

2. What is the definition and coverage of renewable energy under the relevant legislation?

The Electricity Market Act defines the renewable energy sources as water, wind, solar, wave, tidal and geothermal energy sources, landfill gas, sewage treatment plant gas, biogases and biomass.

Biomass is further defined as the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste.

Liquid biofuel is treated as a renewable energy source if it meets the effective sustainability criteria for biofuels, which are set out by the Minister of Environment on the basis of Ambient Air Protection Act (adopted on the basis of directive 2009/28/EC on the promotion of the use of energy from renewable sources).

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

There are no specific laws exclusively regulating the renewable energy sector. Renewable energy is regulated by the general energy laws:

- Electricity Market Act;
- Grid Code, adopted by the Government of the Republic on the basis of Electricity Market Act;
- Liquid Fuel Act;
- Alcohol, Tobacco and Fuel Excise Duty Act.

The Electricity Market Act sets out the definition of renewable energy sources and provides support measures for the renewable energy production. Detailed rules on the access of wind turbines and other electricity installations to the electricity grid are included in the Grid Code.

The Liquid Fuel Act and Alcohol, Tobacco and Fuel Excise Duty Act provide that excise tax needs to be paid on electricity energy and exemption from fuel excise is granted to certain biofuels.

4. What are the principal regulatory bodies in the renewable energy sector?

The Regulator of the energy sector in general is the Estonian Competition Authority. Electricity energy excise and bio fuel exemption related activities are regulated by the Customs and Tax Board.

5. What are the main permits/licenses required for renewable energy projects?

The main license needed for renewable, as well as conventional energy generation is the license for generation of electricity. The license is not required for generation by a producer using generating installations which have a total net capacity of less than 100 kW. Please be aware that all wind power plants are required to be connected to the transmission grid only, and thus wind energy plants need to follow the requirement of the transmission system operator to get the grid connection.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

No, there are no tax advantages to companies generating electricity from renewable energy sources.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

No. Previously the Electricity Market Act set out for a purchase obligation of the transmission network operator in relation to electricity produced from renewable energy sources; however such purchase obligation was abolished as of 27 February 2010.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Renewable energy companies are eligible to receive support for the sale of renewable energy. A reservation applies in relation to wind power, whereas renewable energy support is paid for electricity generated from

wind until 600GWh of wind energy has been produced each respective calendar year. If the volume of wind energy generated in such calendar year exceeds 600 GWh, then all wind power generators will lose the right for the support. According to public sources, approximately 450GWh wind energy was produced in Estonia in 2012.

The amount of the renewable energy support is 0.0537 EUR per kWh.

It must be further noted that until 1 July 2010 such support was paid for the electricity generated from all renewable energy sources (with the above exception in relation to wind power). As of 1 July 2010, the types of renewable energy eligible for the support changed. Renewable energy support is not paid for the electricity generated from biomass on condensation regime any more. At the same time electricity generated from waste, peat or oil shale is eligible for a reduced support of 0.032 EUR per kWh if the electricity is generated in cogeneration regime.

However, amendments are expected to be made in 2014 to the Electricity Market Act regarding the renewable energy support, main conditions are still under discussion.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

The Kyoto Protocol has been ratified. The general regime for carbon credits is set out in Kyoto protocol. Estonia is also participating in the EU emission trading system which allows participants to use most categories of credits from the Kyoto Protocol's Clean Development Mechanism and Joint Implementation mechanism.

10. Do renewable energy based power plants have priority for connection to the grid?

No, renewable energy based power plants do not have a priority for connection to the grid.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

No, there are no incentives for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants.

12. What are the other incentives available to renewable energy generation companies?

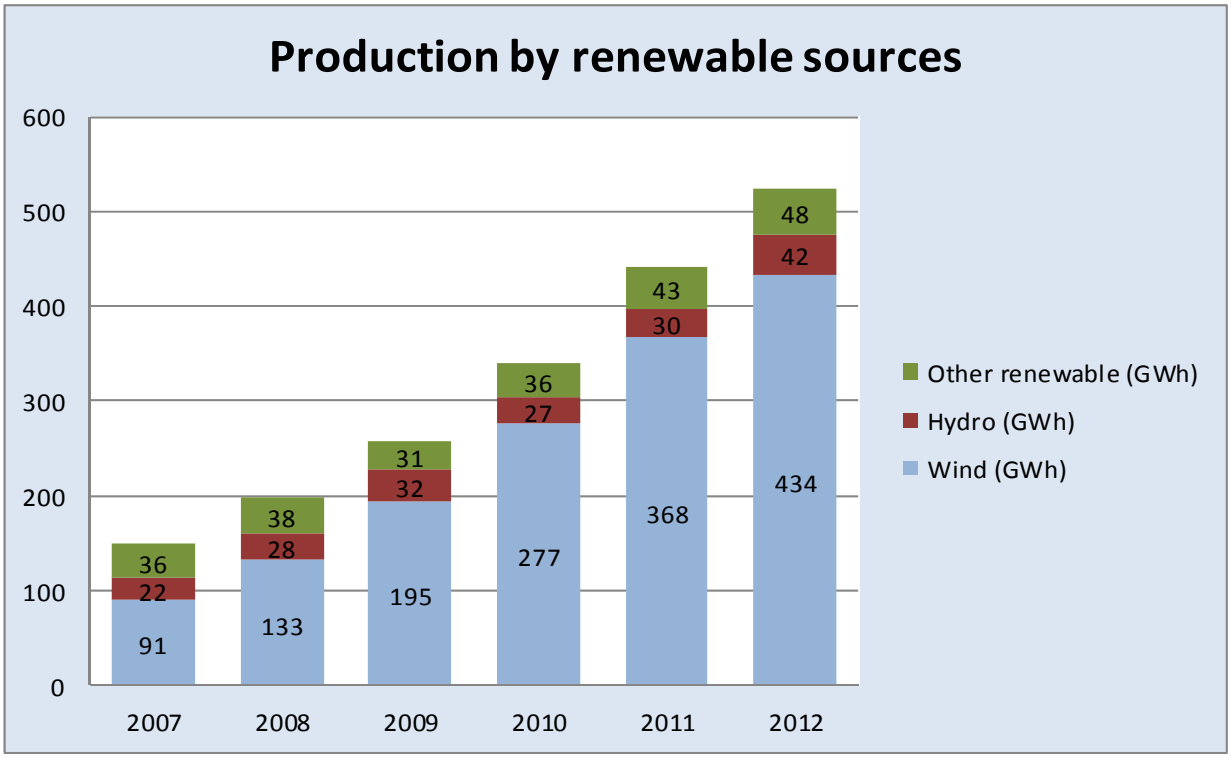
The Grid Code now provides for a simplified procedure for the connection to the grid of generation facilities with up to 15kW capacity using renewable energy sources – connecting such facilities to the grid does not need the consent of the transmission network operator any more.

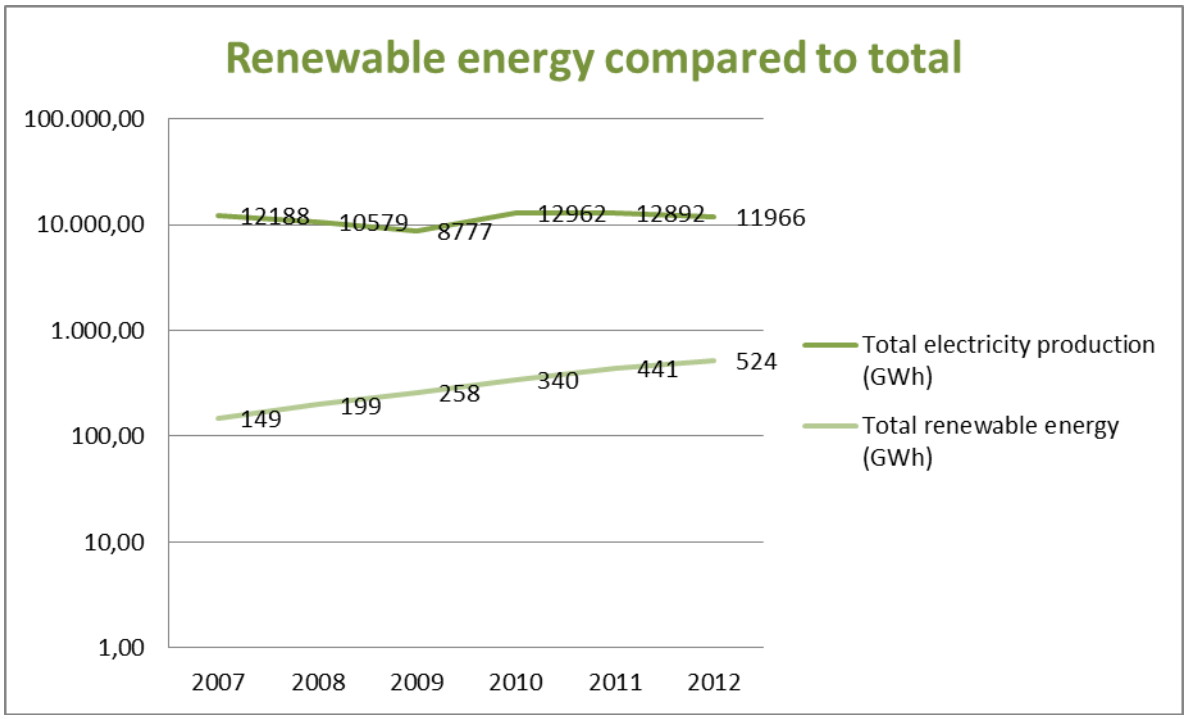
STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

Please find the Statistics Estonia information on the total electricity production and the share of electricity produced from renewable energy sources.

	Total electricity production (GWh)	Hydro (GWh, share of total electricity production)	Wind (GWh, share of total electricity production)	Other renewable – mainly biofuel (GWh, share of total electricity production)
2007	12188	22 (~0.2%)	91 (~0.7%)	36 (~0.4%)
2008	10579	28 (~0.3%)	133 (~1.3 %)	38 (~0.4 %)
2009	8777	32 (~0.4%)	195 (~2.2%)	31 (~0.4%)
2010	12962	27 (~0.2%)	277 (~2.1%)	36 (~0.3%)
2011	12892	30 (~0.2%)	368 (~2.9%)	43 (~0.3%)
2012	11966	42 (0.4%)	434 (~3.6%)	48 (~0.4%)





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GENERAL

1. What is the nature and importance of renewable energy in your country?

Finland consumes proportionally more renewable energy than most countries in the world.

In the fourth quarter of 2013, the total energy consumption of Finland decreased by 2% compared to previous year as a result of the diminished consumption of energy for heating. The availability of hydropower decreased as well as the net imports of electricity which increased the share of coal. Also the share of renewable energy in Finland's total energy consumption decreased, although the use of wind increased.[1]

According to 2013 statistics, renewable energy sources provided approximately 31% of Finland's total energy consumption and accounted for 36% of electricity generation. Based on a breakdown of the total energy consumption by source, the main renewable energy sources are wood-based fuels (24%) and hydro and wind power (4%).

As regards electricity production, hydropower (18.7%) and biomass (15.7%) contribute the largest proportions.[2]

Finnish energy policy aims to execute the goals of the European Union, *inter alia*, the Third Energy Package, among other international obligations. Generally, the national energy policy is in line with the European Union Directive on the Promotion of the Use of Energy from Renewable Sources 2009/28/EC, as amended (the "RES Directive"). The Finnish Government promoted and plans to keep promoting the production and consumption of renewable energy with various support schemes in order to reach the national target that requires Finland to increase the use of renewable energy at least to 38% of its energy consumption by 2020.[3] In addition, the Long Term Climate and Energy Strategy of Finland aim to increase the production of wind energy to six TWh hours by 2020 and nine TWh hours by 2025.[4] In the Government's view, reaching such goals requires an extensive introduction of off-shore wind power.[5]

1 Official Statistics of Finland, 2013 fourth quarter available at: "http://www.stat.fi/til/ehk/2013/04/ehk_2013_04_2014-03-24_en.pdf".

2 See Official Statistics of Finland, 2013 fourth quarter available at: http://www.stat.fi/til/ehk/2013/04/ehk_2013_04_2014-03-24_en.pdf and http://www.stat.fi/til/ehk/2013/04/ehk_2013_04_2014-03-24_kuv_013_fi.html as well as http://energia.fi/energia-ja-mparisto/sahkontuotanto.

3 See Directive 2009/28/EC of The European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, Official Journal of the European Union, 5 June 2009.

4 See the Long Term Climate and Energy Strategy of Finland (VNS 6/2008 vp) and update of the Long Term Climate and Energy Strategy of Finland (VNS 2/2013 vp).

5 See press release of the Ministry of Employment and Economy on 20 March 2014 available at: https://www.tem.fi/en/energy/press_releases_energy?89521_m=114557 .

2. What is the definition and coverage of renewable energy under the relevant legislation?

Although the national legislation does not define renewable energy, the Act on Production Subsidy for Electricity Produced from Renewable Energy Sources (1396/2010, as amended) ("Production Subsidy Act") refers to the following sources: wind power, biogas, wood-based fuels (including wood by-products and waste products as well as wood chips) and hydro power.

Moreover, Finland considers the energy sources specified in the RES Directive to be renewable.[6] According to the RES Directive, the term renewable energy refers to energy that is produced from renewable non-fossil sources such as wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogas. In Finland, peat is considered a slowly renewable energy source.[7]

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

- Electricity Market Act (588/2013) (the "Electricity Market Act"): The act aims to provide the preconditions for an efficient, secure and environmentally sustainable electricity market;
- The Amendment of the Natural Gas Act (589/2013): The new act applies also to gas produced from renewable energy sources if such gas can be delivered and transported in the existing pipelines;
- The Act on Supervision of the Electricity and Natural Gas Markets (590/2013): The act regulates the general goals, duties and jurisdiction of the Energy Authority;[8]
- The Production Subsidy Act: The feed-in tariff paid on the grounds of Production Subsidy Act promotes the construction of wind farms, biogas and wood fuel power plants and wood chip power plants;[9]
- The Decree on Production Subsidy for Electricity Produced from Renewable Energy Sources (1397/2010) ("Production Subsidy Decree");
- Act on the Allocation of State Grants (688/2001, as amended): The act provides the legal basis of the Government Decree on General Rules for the Allocation of Subsidies for Energy (1313/2007);
- Government Decree on General Rules for the Allocation of Subsidies for Energy (1313/2007): This government decree establishes provisions on the allocation of financial aid for investment and research projects that also promote technologies for the use of renewable energy;
- Act on Promoting the Use of Biofuels in Transport (446/2007, as amended): The act promotes the use of biofuels in transport and sets an obligation for transport fuel distributors to distribute biofuels for consumption;[10]

6 Ministry of Employment and the Economy (1096/08.10.02/2012), implementing guidelines of RES Directive.

7 See National Strategy for Implementing Kyoto Protocol, Government Report to Parliament, 25 November 2005 and Long-term Climate and Energy Strategy, Government Report to Parliament, 6 November 2008.

8 See also Act on Energy Authority (591/2013).

9 See Explanatory Memorandum (124/2011) and the Government Bill 107/2012.

10 See also Act on Biofuels and Bioliquids (393/2013).

- Emission Trading Act (2011/311, as amended): The act implemented the Directive 96/61/EC concerning integrated pollution prevention and control ("IPPC") as well as Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading (excluding the emission trading regarding the aviation).[11]

4. What are the principal regulatory bodies in the renewable energy sector?

The Ministry of Finance is responsible for the preparation of legislation on energy taxation. The Ministry of Employment and the Economy participates in the preparation of energy taxation in order to ensure that taxation supports energy and climate policy goals as efficiently as possible. The Ministry's Energy Department's Director-General serves as the main authority in the field of energy.[12] As for supervisors, the Energy Authority grants various permits for energy projects and is in charge of the feed-in tariff system.[13] It also enhances and monitors the activities of the electricity and natural gas markets and enhances the realization of climate change.

5. What are the main permits/licenses required for renewable energy projects?

The required permits for a renewable energy project depend on the location (e.g., on-shore or off-shore wind) and size of the project. Generally, all construction projects and land use in Finland must be in compliance with the rules set out in the Land Use and Building Act (1999/132). In addition, renewable energy projects require permits and approvals regulated under multiple specific statutes. The main permits and approvals that renewable energy project requires are as follows:

- Construction permit(s) for the turbines and/or other facilities. An applicant must deliver the necessary documents to the Building Control Agency of the relevant municipality. Generally, an applicant must provide documentation/evidence that it is in control of the building site, the construction plan and an assessment of the impact on the landscape and neighbors;

- For larger projects an environmental impact assessment ("EIA") must be conducted and approved by the relevant authority. For smaller projects the local Center for Economic Development, Transport and Environment will decide whether to require an EIA. In some projects the EIA has been conducted as a part of the zoning process. The main rules regarding the EIA can be found in the Environmental Impact Assessment Act (1994/468) and Environmental Impact Assessment Decree (713/2006);

- The permit required by the Water Act (2011/587, as amended) should be considered when developing off-shore projects. The application must be addressed to the relevant Regional State Administrative Agency, which will give a public notice before determining whether to issue the permit;

- The need of an environmental permit for certain projects is regulated in the Environmental Protection Act (86/2000, as amended) and the Environmental Protection Decree (169/2000). Similarly to water permits, the application must be addressed to relevant the Regional State Administrative Agency;

[11] See Act on Aviation Emission Trading (311/2011).

[12] Ministry of Employment and the Economy, available at "http://www.tem.fi/index.phtml?l=en&s=2630".

[13] Energy Authority, available at "http://www energiavirasto .fi/en/web/energy-authority /energy-authority".

- Some construction projects and installations may compromise aviation security. For example, under the Aviation Act (2009/1194, as amended) turbines higher than 30 meters require an aviation safety permit. The applications for such permits must be addressed to the Finnish Transport Safety Agency. A statement of the corporation maintaining the air navigation systems in Finland, Finavia, must also be obtained and provided to the authority in order to assess whether the permit(s) can be issued;

- Depending on the technical layout of a project, Energy Authority's permit under the Electricity Market Act may be required for the construction of power lines exceeding 110 kV. Also, redemption of the land might be necessary when placing cables underground;

- A statement from the Finnish Defense Forces confirming that project will not disturb radars is necessary for certain projects, unless the issue was investigated as a part of the zoning process. The applicant should request the assessment from Defense Command of the Finnish Defense Forces at an early stage of the project.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Finland promotes the use of renewable energy through various tax advantages. In 2011, energy taxation reform changed the former excise duties. The current excise duties for both electricity and liquid fuels are based on energy content and carbon dioxide emissions. The reform changed, *inter alia*, The Act on Excise Duty on Liquid Fuels (1472/1994, as amended) and the Act on Excise Duty on Electricity and Fuels (1260/1996, as amended).

The goal as regards transport fuels was to guide the consumption towards the use of the most carbon dioxide-efficient biofuels.[14] In addition, the following liquid fuels remain exempt from excise duty and stockpile fee:

- fuels entered in the reserve stock of the Finnish Government;

- fuels used as an energy source in an oil refining process;

- fuels used as raw material or auxiliary in industrial production, or in direct first use in the production of goods;

- fuels used in vessel traffic other than private leisure boating;

- fuels used for electricity generation;

- fuels used in aviation other than private leisure flights; and

- liquefied petroleum gas.[15]

As regards electricity and other fuels, taxpayers are divided into different classes. The electricity used in industry is subject to a lower tax category while, for example, households, forestry and agriculture pay a higher tax. Exemptions from both electricity tax and strategic stockpile fee are granted to:

[14] Government Bill 147/2010 on Amending Energy Taxation, available in Finnish at http://www.finlex.fi/fi/ esitykset/he/2010/20100147p. 23.

[15] See Act on Excise Tax on Electricity and Certain Fuels (1260/1996, as amended) and Customer Bulleting No 21, National Board of Customs, 2014 available at: http://www.tulli.fi/en/finnish_customs/publications/excise_tax/ index.jsp".

- production of electricity with a generator not exceeding 50 kVA or with a facility consisting of several items of electricity generation equipment;

- production of electricity with a generator exceeding 50 kVA but not exceeding 2000 kVA without transferring the electricity to an electrical network; and

- production of electricity onboard a vessel or in a car, train or other vehicle for the requirements of the vehicle.[16] Furthermore, tax refunds are paid for energy intensive industries[17] and agriculture.[18]

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Although some countries have purchase guarantees for electricity produced from renewable sources, Finland does not provide such guarantee. Under the Electricity Market Act, licensed operators are obligated to connect all power plants in their area of operation to the grid when requested and against a reasonable compensation if such power plant fulfills the technical requirements. The connection terms and technical requirements shall be impartial and non-discriminatory as well as take into account the security of supply and the efficiency of the electricity system.[19]

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Generally, production subsidies are paid to companies that generate energy from renewable sources pursuant to Production Subsidy Act. Producers of electricity whose plants generate energy from wood chip, wind power, biogas or wood-based fuels have been accepted to the feed-in tariff system upon fulfillment of certain criteria and are paid feed-in tariff, the amount of which varies depending on the market price of electricity or/and the price of emission rights.[20] Mainly, the feed-in tariff system compensates for production costs by guaranteeing a premium for a producer for a limited time.

For example, a wind power project in Finland may be eligible for the feed-in tariff if: (i) the project did not get direct state aid; (ii) it is new and does not contain used parts; and (iii) the total nominal output of the generators exceeds 500 kV.[21] Under the tariff system, eligible power projects will get a guaranteed price of EUR 83.5 per MWh for a period of 12 years.[22]

If the three-month average market price is below the guaranteed price, the project will be paid the difference as a premium feed-in tariff. Until 31 December 2015, the guaranteed price is EUR 105.30 per MWh.[23] In order to be

16 See Act on Excise Tax on Electricity and Certain Fuels (1260/1996, as amended) and Customer Bulletin No 21, National Board of Customs, 2014 available at: "http://www.tulli.fi/en/finnish_customs/publications/excise_tax/ index.jsp".

17 § 8 a, Act on Excise Tax on Electricity and Certain Fuels (1260/1996, as amended).

18 Act on Refund of Excise Tax Levied on Certain Energy Products Used in Agriculture (603/2006, as amended) and Government Bill (147/2010) on Amending Energy Taxation, available in Finnish at "http://www.finlex.fi/fi/esitykset/he/2010/20100147".

19 § 20, Electricity Market Act.

20 § 6, Production Subsidy Act.

21 § 9, Production Subsidy Act.

22 § 25, Production Subsidy Act and the Production Subsidy Degree.

23 § 62, Production Subsidies Act and State Aid Decision 31107 2011/N – FI.

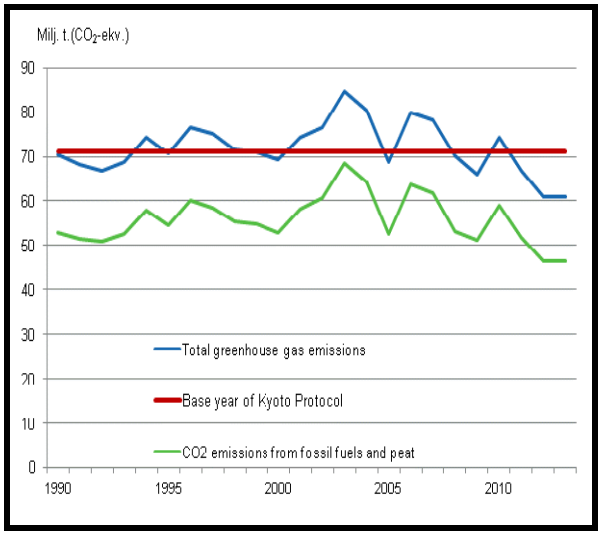
included in the tariff system, a producer must provide the necessary documentation to the Energy Authority. While the Energy Authority will supervise the tariff system, Finland's electricity transmission system operator, Fingrid, will handle issues concerning coordination.[24]

The Finnish feed-in tariff is paid out of the government budget. Thus, the feed-in tariff constitutes a state aid and limitations such as the maximum amount of state aid, must be considered. There are also constitutional considerations. In order to grant the guaranteed price on the basis of the feed-in tariff, a turbine may not benefit from any other state aid.[25] European Union aids, such as the aids that are granted based on the Seventh Framework Program, are not an obstacle for joining the feed-in tariff.[26] However, even though such aid does not qualify as state aid by definition, the combined amount of aid will be calculated by the Ministry of Employment and the Economy, which can limit the total amount of aid in these situations.

The government bill 107/2012 proposed amendments to the Production Subsidy Act and Production Subsidy Decree, and the amendments came into effect on 1 January 2013. These amendments focus mainly on promoting the competitiveness of forestry projects in electricity production. One of the most essential changes was the new premium for forestry projects. There were no changes to the feed-in tariff of wind power.[27]

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Finland ratified the Kyoto Protocol in 2002.[28] Under the burden-sharing agreement between EU Member States, Finland was committed to bringing national average annual emissions down to 8% below the 1990 level during the Kyoto commitment period 2008 – 2012. Finland is among the countries that will commit to the next commitment period applicable to emissions between 2013 – 2020.



The Emission Trading Act implemented the European Union Directives regarding IPPC as well as established the Finnish scheme for greenhouse gas emission allowance trading in Finland. There is also a regime for aviation, which is regulated under a separate act.

[24] Production Subsidies Act and Press release of Ministry of Economy and Employment, 7 April 2009.

[25] See § 20, Production Subsidies Act and the special perquisites for acceptance to the feed-in tariff in § 9 – § 11.

[26] Further information regarding the Seventh Framework Program can be found at: http://europa.eu/legislation_summaries/energy/european_energy_policy/i23022_en.htm.

[27] Government Bill 107/2012 available at: http://www.finlex.fi/fi/esitykset/he/2012/20120107.

[28] The United Nations Framework Convention on Climate Change was ratified in 1994.

10. Do renewable energy based power plants have priority for connection to the grid?

There is guaranteed access to the grid for all electricity users and electricity-producing plants, including renewable energy generators. As explained in connection with the question 7 above, the grid operators are required to grant connection to the grid according to non-discriminatory criteria.[29] Thus, electricity generated from renewable sources is not given priority.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

To the best of our knowledge, no.

12. What are the other incentives available to renewable energy generation companies?

Discretionary investment subsidies are available under the State Aid Act (2001/688). The aid may be provided in the form of financing for certain operations or projects.[30] Generally, the subsidies provided may not exceed the state aid limits under the Finnish or European Union regulation. However, according to a recent Finnish Government proposal, off-shore wind power projects might not be subject to such limitations.

In order to reach the goals of the Long Term Climate and Energy Strategy, the Finnish Government proposed amendments to the current Production Subsidy Act on 20 March 2014. Under the current proposal, demonstration off-shore wind power projects could benefit from feed-in tariff even if such project would have been granted state aid for construction. The proposed government budget for the demonstration project is EUR 20 million. In addition, the Government proposal aims to provide a possibility to all eligible wind power projects to reserve a place in the feed-in tariff quota.[31]

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

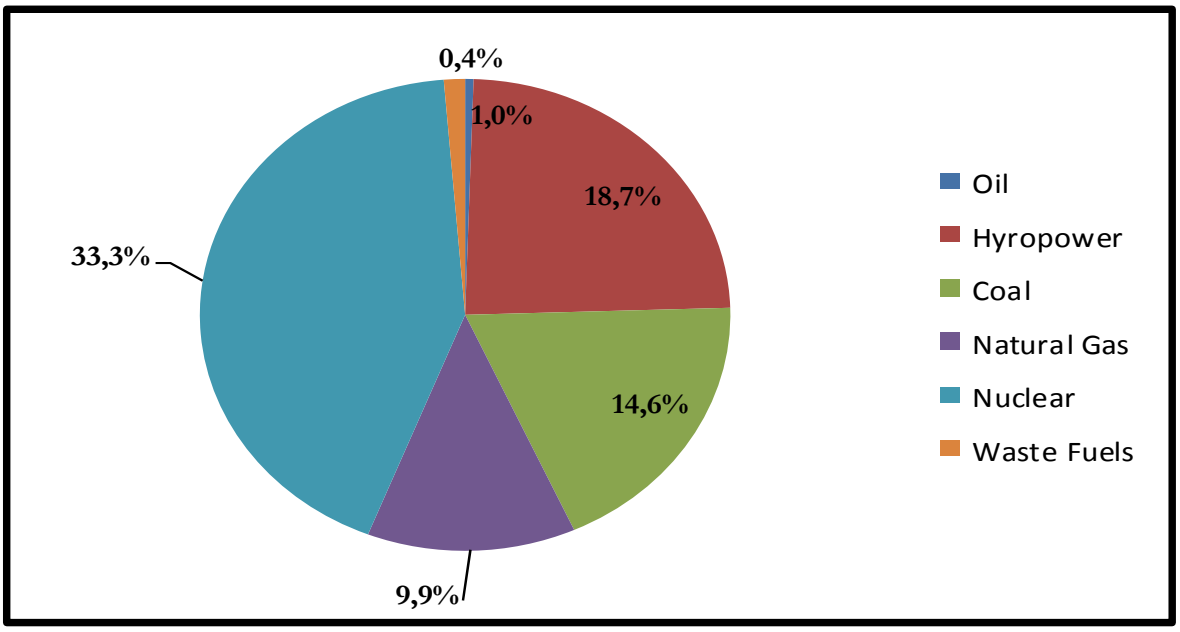
In 2013, the total electricity production was 68.2 TWh, which was 1.5% less than in 2012. Finland produced 81.3% of the electricity consumed and imported 18.7%. The following is a breakdown of the main electricity sources: 33.3% nuclear power, 18.7% hydropower, 15.7% biomass, 14.6% coal, 9.9% natural gas, 4.9% peat, 1.4% waste, 1.1% wind and 0.4% oil. Renewable energy accounted for 36% of the electricity supply.[32]

[29] § 20, Electricity Market Act.

[30] Discretionary investment subsidies for new investments under the Government Decree on General Rules for the Allocation of Subsidies for Energy (1313/2007) was in force until 31 December 2012.

[31] Government Proposal 15/2014.

[32] Original statistics of Finnish Energy Industries available at: *"http://energia.fi/energia-ja-ymparisto/sahkontuotanto"*.



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GENERAL

1. What is the nature and importance of renewable energy in your country?

France has historically shown little interest in renewable energy sources, but instead concentrated its efforts on the expansion and development of the nuclear sector.

However, in the past few years, France has taken several measures, on one hand, to decrease the share of nuclear energy in the French total gross electricity consumption and, on the other hand, to develop and promote the generation of electricity from renewable sources. France has.in place a favorable legal framework to attract interest from a large number of domestic and international renewable energy players, in particular by urging the parliament to vote laws in order to support the production of electricity from wind installations (e.g., law No. 2013-312 dated 15 April 2013 related to the transition to a low carbon energy system and containing various provisions concerning water pricing and wind turbines production[1]).

As a result, electricity from renewable sources accounted in 2012 for 16.6% of the French total gross electricity consumption (as compared to 16.4% in 2011, 14.9% in 2010 and 15.1% in 2009)[2].

In 2012, the primary production of renewable energy represented 20,766 million tonnes of oil equivalent ("Mtep") (as compared to 15,025 Mtep in 2002)[3], the share of renewable energy sources being as follows:

- Hydro power: 25.5% (5,048 Mtep);
- Wind power: 6.47% (1,282 Mtep);
- Solar thermal: 0.38% (0,076 Mtep);
- Solar photovoltaic: 1.7% (0,345 Mtep);
- Tide, wade and ocean: 2.35% (0,394 Mtep);
- Solid biofuels: 49.12% (9,723 Mtep);
- Biogas: 2.08% (0,412 Mtep);
- Municipal waste: 0.34% (0,126 Mtep);
- Biogasoline: 2.13% (0,422 Mtep); and
- Biodiesels: 9.93% (1,966 Mtep).

1 The French Constitutional Council has censured articles of this law proposing a *bonus/malus* tax on private citizens for energy consumption (e.g., homes that reduce their energy consumption would pay lower rates for their energy usage, while homes that did not would be fiscally penalized), on the ground that the law did not uphold the principle of equality because the proposed tax would have only affected private citizens (Decision No. 2013-66 dated 11 April 2013).

2 Source: Eurostat. This indicator is the ratio between the electricity produced from renewable energy sources and the gross national electricity consumption for a given calendar year. It measures the contribution of electricity produced from renewable energy sources to the national electricity consumption. Electricity produced from renewable energy sources comprises the electricity generation from hydro plants (excluding pumping), wind, solar, geothermal and electricity from biomass/wastes. Gross national electricity consumption comprises the total gross national electricity generation from all fuels (including autoproduction), plus electricity imports, minus exports.

3 Source: Eurostat. Primary production of biomass, hydropower, geothermal energy, wind and solar energy are included in renewable energies.

The French Government has committed to continue to increase the annual production of renewable energy by 20 Mtep in order to raise their share in final energy consumption to at least 23% by 2020, the forecasted total production being at least 32 Mtep[4]. This objective corresponds to the target of gross electricity consumption from renewable sources assigned to France under the European Union Directive 2009/28/EC dated 28 April 2009 (e.g., Directive said the third energy package), which was partially transposed into French law by the order No. 2011-504 dated 9 May 2011.

Furthermore, to bring the level of renewable energy up to 23% of the overall energy consumed in France by 2020, French government wishes to boost the wind energy sector with an emphasis on offshore wind. In this perspective, in 2013, the French Department of Ecology moved ahead with a second round of tenders for offshore wind farms, joining a first tender[5]. This tender calls for about 200 wind turbines off the French coast for a total installed capacity 1 gigawatt, which will result in the building of nearly 2 gigawatts of wind turbines in the Pays de Loire, Brittany, Normandy and Upper Normandy.

This new wind power tender comes as France is having a national debate on energy transition, launched in November 2012 under which the French president has pledged to reduce the country's reliance on nuclear energy to 50% by 2025.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Pursuant to article 29 of the law No. 2005-781 dated 13 July 2005[6] (as amended), renewable energy sources cover wind energy, solar energy, geothermal energy, aerothermy energy, hydro energy, energy generated from biomass, waste water treatment plants and biogas. Article 29 of said law further defines biomass as the biodegradable fraction of products, wastes and residues issued from agriculture, including vegetal and animal substances from earth and sea, sylviculture and related industry and from the biodegradable fraction of industrial and household wastes.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The renewable energy sector is mainly regulated by law No. 2000-108 dated 10 February 2000 *relating to the modernization and development of the public electricity service* (as amended by the law No. 2006-1537 of 7 December 2006 *on the energy sector*) (the "French Electricity Act").

The French Electricity Act has (i) implemented into French law the European Union electricity Directive 96/92/EC dated 19 December 1996; and has (ii) opened to competition the French electricity market.

The French Electricity Act contains measures which support the development of generation of electricity from renewable sources. In particular, article 10 of the French Electricity Act, which was repealed and is now codified in articles L.314-1 to L.314-13 of the French

4 Program law No. 2009-967 dated 3 August 2009 *on the implementation of the Grenelle Environment Forum.*

5 A first round of offshore wind power tenders, launched on 5 July 2011, resulted in 2 gigawatts of bids going to a consortium led by EDF, wind turbine manufacturer Alstom and Denmark's DONG Energy.

6 Repealed by the order No. 2011-504 dated 9 May 2011 and codified in the new Energy Code.

energy code, imposes on State-owned and historical operator, *Electricité de France* ("EDF") and non-nationalized electricity distributors, an obligation to purchase at a preferential tariff electricity generated in France from renewable sources (please see sections 7 and 8 below). The French authorities have enacted various secondary legislation and set out the conditions under which a renewable energy generator may benefit from the power purchase obligations provided for by the French Electricity Act. In particular, decree No. 2001-410 dated 10 May 2001 (as amended) lists certain requirements which need to be satisfied by a generator (including renewable energy generator) in order to benefit from the power purchase obligation.

A ministerial order (*arrêté*) enacted by the French Ministry in charge of the energy sector (the "French Ministry of Energy") sets out for each type of renewable source the preferential tariff for the purchase by EDF and non-nationalized electricity distributors of electricity generated from such renewable source.

4. What are the principal regulatory bodies in the renewable energy sector?

The principal regulatory body in the renewable energy sector is the *Commission de régulation de l'énergie* (the "CRE"). The CRE is an independent administrative body governed by the French Electricity Act and the French energy code. Article 28 of the French Electricity Act[7] defines in general terms the missions and powers of the CRE which are to "*assist in ensuring the proper operation of the electricity and natural gas markets to benefit the final customer. In particular, CRE ensures that the conditions of access to electricity and natural gas transmission and distribution networks do not impede the development of competition. It monitors, for the electricity and natural gas sectors, all transactions made between suppliers, traders and producers, all transactions made on the organized markets and cross-border trading*"[8]. New prerogatives regarding price fixing and control over access to nuclear electricity were granted to the CRE by law No. 2010-1488 dated 7 December 2010.

In relation to the renewable energy sector, the CRE's role is to ensure that the development of renewable energy sources is carried out under reasonable economic conditions. At the request of the French Government, the CRE carries out calls for tenders for new generation capacities from biomass (please see section 1 above). The CRE also delivers opinions on the level of feed-in tariffs applied to the power generated from renewable sources.

5. What are the main permits/licenses required for renewable energy projects?

First and foremost, a distinction has to be established between (i) the standard procedures; and (ii) the specific procedures pertaining to the right to operate sources of renewable energy.

Firstly, the frameworks of the standard procedures are those which are applicable to the operating of sources of renewable energies but which are not necessarily specific to these energy sources. Within the context of the standard procedures, the right to operate sources of renewable energy either takes the form of authorizations, issued by the competent body, or prior declarations, which are mostly used in smaller projects.

For example, article R.421-1 of the French town planning code furthermore provides that all new constructions must be preceded by the issuance of a building permit, except for the

[7] Repealed by the order No. 2011-504 dated 9 May 2011 and codified in the French energy code.

[8] The articles relevant to the CRE, which encompass the aforementioned powers and missions, can be found at the third title of the first book of the French energy code.

constructions mentioned pursuant to articles R.421-2 to R421-8-1 which are exempt from any formalism under this code, and articles R.421-9 to R.421-12 which require a prior declaration. Consequently, if an installation corresponds to a new construction, its implementation will be subjected to the issuance of a building permit. Such is the case for a cogeneration thermal plant, a dam, a hydroelectric plant and wind turbines with a height exceeding 12 meters, to name a few.

Secondly, specific frameworks regulate the access to the operating of a source, or of a particular category of sources, of renewable energy. The operating rights consequently depend either on *ad hoc* regulations. They are often more demanding and technical in comparison with the standard procedure.

For instance, (i) in geothermic matters, mining legislations will have to be taken into account, as well as environmental legislation; and (ii) article L.311-1 of the French energy code imposes that the creation or extension of electricity production installations be subject to an operating permit.

However, the French government has stated its willingness to simplify the procedures for obtaining administrative authorizations in general and, in particular, permits, prior declarations and/or licences required for renewable energy projects.

In this perspective and in accordance with the provision of article 14 of law No. 2014-1 dated 2 January 2014, the French Government has enacted the order (*ordonnance*) No. 2014-355 dated 20 March 2014 related to the experimentation of a single authorization with regard to facilities classified for environmental protection (*autorisation unique en matière d'autorisations classées pour la protection de l'environnement*).

On an experimental basis (e.g., for a period of 3 years starting from 1 June 2014), facilities classified for environmental protection listed in article 1 of the said order (in particular facilities installations utilizing the mechanical energy of wind) located in one of the seven regions also listed in article 1 will be authorized by a single order (*arrêté*) enacted by the Prefect. Under article 3, this single authorization would have the effect of all the authorizations requested for the project concerned, and especially (i) authorizations requested under articles L.411-2 and L.512-1 of the French environmental code; (ii) building permit; (iii) authorizations for forest-clearing operations; and (iv) operating permit under article L.311-1 of the French energy code.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

There are mainly two tax advantages granted in France to renewable energy generation companies:

- article 39 AB of the French Tax Code (the "FTC") permits an exceptional and accelerated depreciation over a twelve-month period for equipment designed to save energy or intended to produce renewable energy. This mechanism of depreciation allows companies which invest in renewable energy to reduce their taxable profit by the amount of the investment, which equates to a $33^{1/3}\%$ subsidy. However, to date, this incentive benefits only equipment acquired or manufactured before 1 January 2011; and

- article 1382-12 of the FTC grants an exemption of land tax on installations which produce solar energy, including solar panels.

There are no other tax advantages which are specific to the renewable energy generation companies. However, please note that the French tax legislation contains other tax mechanisms aimed at promoting electricity from a renewable source, but which apply only to individuals (i.e., tax credits on investments in renewable energy systems or tax exemptions on income derived from the sale of electricity produced from renewable energy).

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The French Electricity Act imposes on EDF and non-nationalized electricity distributors an obligation to purchase electricity generated from facilities producing renewable energy at a preferential tariff. This principle is embodied in articles L.311-10 to L.311-13 and articles L.314-1 to L.314-13 of the French energy code.

Firstly, article L311-10 of the French energy code, provides that when the production capacities do not meet the objectives of the multiannual investment programming, especially those pertaining to techniques of production and geographical localization of the installations, the competent administrative authority can resort to call for tenders, on the understanding that EDF and non-nationalized electricity distributors are obliged to enter into a power purchase contract with the successful bidder.

Pursuant to the said article L311-10 of the French energy code, any company incorporated in a European Union Member State may participate in the tender. The terms and conditions of the power purchase contract (e.g., duration and purchase price of electricity) are set out in the tender documentation and depend on the nature and specificity of the facility. Concerning criteria selection of the bidders, article L.311-5 of the French energy code specifies certain criteria, such as (i) the security and safety of public electricity grids; (ii) the protection of public health and of public security, (iii) environmental protection, (iv) energy efficiency and (v) the technical, economic and financial capacities of the candidate.

Secondly, article 10 of the French Electricity Act, codified for this provision in articles L.314-1 to L.314-13 of the French energy code, also imposes on EDF and non-nationalized electricity distributors an obligation to purchase, at a preferential tariff, renewable energy produced by facilities (i) that generate energy from household waste or similar waste or that use such sources to provide heat to a heating system; (ii) the generating capacity of which does not exceed 12 MW and that use renewable energy sources or implement highly energy-efficient techniques such as cogeneration; (iii) that use wind power and are based in a wind power development area; or (iv) that use energy recovery.

The list set out in article 10 of the French Electricity Act is a non-exhaustive list. As a consequence, the following facilities are also concerned by the purchase guarantee: installations which utilize household waste or assimilated substances as mentioned at articles L.2224-12 and L.2224-14 of the French general local authorities code (*code general des collectivités territoriales*) and those who aim to fuel a heating network, electricity production installations which use renewable energy, ground installations utilizing the mechanical energy of wind in a zone which is not interconnected to the metropolitan continental grid, or installations which implement efficient technology in terms of energy efficiency, such as a cogeneration plant. A decree from the French supreme administrative court (*Conseil d'Etat*) details the limits in terms of installed capacity of the production installations which

benefit from the purchase obligation. These limits, which cannot exceed 12 megawatts for the installations specified at the 2° of the article L.314-1 of the French energy code, are determined for each category of production installation[9]. Article 3 of the decree No. 2001-410 provides for the revocation of the certificate enabling the purchase obligation if the production limit is exceeded.

However, EDF and non-nationalized electricity distributors are required to enter into a power purchase contract only if the renewable source generator has obtained a power purchase obligation certificate (*Certificat ouvrant droit à l'obligation d'achat*). The power purchase obligation certificate will be issued for the benefit of the renewable source generator if the latter has satisfied the requirements provided in the decree No. 2001-410 dated 10 May 2001 (as modified). Power purchase contracts are concluded in a standard form approved by the French Ministry of Energy.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Renewable energy companies, having entered into a power purchase contract with EDF or a non-nationalized electricity distributor, benefit from a guaranteed purchase price for the duration of the power purchase agreement. However, the purchase price is not decided by the parties but is set by the French Ministry of Energy.

Under a tender process organized under article 8 of the French Electricity Act[10], codified at article L.311-10 of the French energy code, the power purchase price is determined by the French Ministry of the Energy and is set out in the tender documentation. Such price depends on the nature and specificity of the facility and is indexed according to the terms of the power purchase agreement.

If a power purchase agreement has been entered into on the basis of the provisions of article 10 of the French Electricity Act, the purchase price for each source of renewable energy is set by an order of the French Ministry of Energy. As a general principle, the purchase price shall be determined taking into account the capital and operating costs avoided by EDF and non-nationalized electricity distributors, with a possible premium to the benefit of the renewable source generator.

However, in respect of the purchasing tariff of electricity produced by wind turbines, the European Union Court of Justice has recently considered that these tariffs constitute State aids as defined by the Treaty on the Functioning of the European Union (the "TFEU"): "*article 107(1) TFEU must be interpreted as meaning that a mechanism for offsetting in full the additional costs imposed on undertakings because of an obligation to purchase wind-generated electricity at a price higher than the market price that is financed by all final consumers of electricity in the national territory, such as that resulting from law No. 2000-108, constitutes an intervention through State resources*" (Case C-262/12 *Association Vent De Colère! Fédération nationale* dated 19 December 2013).

[9] The decree No. 2000-1196 of 6 December 2000 defines the calculation method of the installed capacity of the installations producing electricity and specifies by installation category their capacity limits.

[10] Decree No. 2002-1434 dated 4 December 2009 (as amended) further defines the tendering procedure. As stated previously, article 8 of the French Electricity Act was repealed by the order No. 2011-504 dated 9 May 2011 and codified in the new Energy Code.

Thus, the determination of the said tariff will now be regulated: before entering into force, the ministerial order setting out the said preferential tariff will have to be notified to the European Commission, and validated by it e.g., under the TFEU, aid measures can only be implemented after approval by the European Commission).

However, this decision should not disrupt the French legal order on this matter because by its decision dated 27 March 2014 (No. SA.36511), the European Commission concluded that the French scheme providing support to the production of electricity from wind installations described above is compatible with European Union state aid rules.

According to the said decision, the feed-in tariffs (i) only compensate producers of renewable electricity to cover the additional production costs they face compared to traditional electricity generation; and (ii) allow for a reasonable rate of return in line with the Guideline on Environmental Aid, which are currently applicable, entered into force in 2008, and with the new Energy and Environmental State Aid Guidelines adopted by the European Commission on 9 April 2014 which will take effect from 1 July 2014.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

France signed the Kyoto protocol on 29 April 1998 and implemented it by way of decree No. 2005-295 of 22 March 2005. The European Union put into place a trading system of greenhouse gas ("GHG") emissions to which France is a part of.

In addition, France implemented a carbon credits mechanism designed to support projects aiming to reduce GHG emissions. The order (*arrêté*) dated 26 October 2012, modifying the order (*arrêté*) dated 2 March 2007, specifies that the mechanism of domestic projects aims to incentivize the reduction of GHG emissions by delivering carbon credits to economic agents not submitted to the community GHG emissions trading system, which invest in technologies producing less GHG emissions.

10. Do renewable energy based power plants have priority for connection to the grid?

Renewable energy based power plants do not have priority for connection to the grid. As a general principle, article 23 of the French Electricity Act[11] requires the entities responsible for the management and connection of facilities to the electricity grid to guarantee without discrimination an access to the grid to all electricity generators. The two entities responsible for the connection to the grid are (*i*) *Électricité Réseau Distribution France* ("ERDF") for the connection to the medium-voltage or low-voltage grid; and *(ii) Réseau de Transport d'Electricité* ("RTE") for the connection to the extra high-voltage or high-voltage grid. In order to be connected to the grid, a generator must request ERDF or RTE (depending on the voltage) to issue a proposition (*Proposition Technique et Financière)* setting out technical and financial conditions under which the facility of the generator may be connected to the grid (the "PTF"). Upon receipt of the generator's application, the grid manager has three months to study the information submitted by the generator and to provide the generator with the PTF. The PTF contains an estimation of the technical and financial conditions for the connection but also mentions an estimated waiting time for the execution of a connection agreement as well as an estimated length of the connection works.

[11] Repealed by the order No. 2011-504 dated 9 May 2011 and codified in the French energy code.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

Under French law, there is no specific incentive available to manufacturers of equipment or materials used in the construction of renewable energy based power plants.

12. What are the other incentives available to renewable energy generation companies?

Please refer to our comments in Section 5.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

Figure 1: (Source: European Commission "Energy – country factsheets" - 2012)

Gross Electricity Generation in 2010 (TWh)	**569**
Electricity from renewable sources **(%)**	14,45

Figure 2: (Source: European Commission "Energy – country factsheets" - 2012)

	Gross Electricity Generation from renewable sources in 2010 (in TWh)
Total	82,6
Hydro	66,8
Wind	10
Solar	0,6
Tide, wave and ocean	0,5
Biomass and renewable wastes	4,7
Geothermal	-
Other	2,1

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GENERAL

1. What is the nature and importance of renewable energy in your country?

Given the climate change discussion, as well as the limited availability of fossil energy resources such as coal and oil, the importance of renewable energies is constantly increasing. Germany has taken this issue very seriously and sees a huge opportunity in renewable energies, as these are virtually inexhaustible and are (in principle) being perceived as not having a negative effect on the climate.

In 2012, renewable energy sources had a share of nearly 24% of the electricity supply and 12.6% of the total energy consumption in Germany (figures of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) for 2012, AGEE-Stat).

Germany is one of the pioneers in the wind power sector. With an installed capacity of 33,730 MW in 2013, Germany has one of the largest installed onshore wind power capacities worldwide. About 29% of the installed wind power in Europe is installed in Germany. With 250 MW installed capacity, offshore wind power installations comprise less than 7% of the total installed wind power capacity in Germany.

Up until 2012 Germany was one of the world's top photovoltaic markets. As per 2012, there was an installed capacity of 32,643 MWp in Germany with an overall capacity of 7,600 MWp having been installed in the year 2012 itself.

Germany aims at reducing greenhouse emissions by 40% by the year 2020 compared to the year 1990. Such ambitious goals require an ambitious strategy to increase energy efficiency and expand the renewable energy sector. Accordingly, the German government published an integrated energy and climate program in 2007 ("IEKP") which set out global standards and considerations on an appropriate response for a modern economy. It contained both political and legal initiatives aimed at securing energy supply while at the same time being cost-effective and environmentally sustainable. All of the 29 legal initiatives in the program have been implemented.

In September 2010, the German government published its first energy strategy ("ES") with the intention of organizing an environmentally friendly, sustainable and affordable energy supply for the first half of the 21st century. The core of this ES was the extension of the operating time for nuclear power plants by twelve years (average) and the development of the renewable energy sector. In addition, the ES comprised plans concerning the grid system extension, modernization of the insulation of buildings and the transport sector. After the nuclear disaster in Fukushima in March 2011, the German government revised its ES – after a new evaluation of nuclear power risks – and decided to shut down the last nuclear power plant in Germany in 2022. The eight oldest operating nuclear power plants in Germany were shut down immediately in 2011. Therefore, the development of the renewable energy sector became more significant. A main focus of the German government now lies on improving

the integration of the renewable energy sources in the system and in the market.

With the German Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz ("EEG")), the German legislature created a regulatory instrument:

- to facilitate the sustainable development of energy supply, particularly for the sake of protecting the climate and the environment;
- to reduce the costs of energy supply to the national economy, also by incorporating external long-term effects;
- to conserve fossil fuels;
- to promote the further development of technologies for the generation of electricity from renewable energy sources (Sec. 1 para. 1 EEG); and
- to increase the share of renewable energy sources in electricity supply to at least 35% by the year 2020, 50% by the year 2030, 65% by the year 2040 and 80% by the year 2050 (Sec. 1 para. 2 EEG).

The EEG came in force in 2000 and has been amended several times thereafter with the latest substantial amendment as of 1 January 2012. In addition, a further amendment of the EEG regarding the promotion of solar power in Germany became effective on 23 August 2012 (with retroactive effect as of 1 April 2012). In principle, the tariffs applicable to facilities generating electricity from solar radiation were reduced and other measures to limit the promotion of this sector were implemented.

The forthcoming amendment of the EEG, however, is expected for August 2014 and currently in the legislative procedure. On 8 April 2014, the German Federal Government approved a ministerial draft bill of the legislative reform bill of the EEG (EEG-D 2014, dated 11 April 2014) intended to enter into force on 1 August 2014. The amendment is to be seen against the backdrop of the current approach of the EU Commission to qualify the German renewables support scheme as being a notifiable state aid. In this regard, the EEG-D 2014 is based on newly adopted Draft Guidelines on environmental and energy State Aid for 2014-2020 (draft adopted in principle on 9 April 2014) of the European Commission to ensure its compliance with European Law. Key to the amendment is:

- Mandatory direct-marketing for all new plants with an installed capacity of at least 100 kW (as opposed to the existing feed-in tariff model) with possible entitlement to statutory market premium paid under the EEG;
- feed-in tariffs are only being paid on an exceptional basis;
- the introduction of degression rates for wind energy conditional on target corridors for expansion;
- the discontinuation of certain additional payments.

At this stage of the legislative process, the draft bill may still be subject to amendments. Consequently, the following outline of the EEG-D 2014 is to be taken as a mere reference for the prospective changes of the legal framework.

2. What is the definition and coverage of renewable energy under the relevant legislation?

According to the European Directive on the promotion of the use of energy from renewable sources (Directive 2009/28/EC), energy from renewable sources covers energy

from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases (Article 2 para. 2 lit. (a) Directive 2009/28/EC). However, even though German law on renewable energies is already consistent with material provisions of Directive 2009/28/EC, there is no generally accepted definition of "renewable energy" in the German legislation. Therefore, the coverage of renewable energy may differ between the respective legislative acts.

Within the meaning of the EEG, renewable energy is defined as:

- hydropower, including wave power, tidal power, salt gradient and flow energy;
- wind energy (onshore and offshore);
- solar radiation;
- geothermal energy; and
- energy from biomass (as defined in detail in the Biomass Ordinance), including biogas, landfill gas and sewage treatment gas, the biodegradable fraction of municipal waste and industrial waste.

Biomass (energy sources from phyto and zoomass) is defined in Sec. 2 of the Biomass Ordinance as:

- plants and parts of plants;
- fuels made from plants or parts of plants whose components and intermediate products have all been produced from biomass;
- waste and by-products of plant and animal origin from agriculture, forestry and commercial fish production;
- biological waste within the meaning of Sec. 2 no. 1 Biological Waste Ordinance;
- gas produced from biomass by gasification or pyrolysis and all resulting products and by-products; and
- alcohols produced from biomass, whose components, intermediate products, products and by-products have been produced from biomass.

Please note that the EEG also promotes mine gas – even if mine gas is not a renewable energy within the meaning of the EEG.

The Act on the Promotion of Renewable Energies in the Heat Sector – Erneuerbare-Energien-Wärmegesetz ("EEWärmeG") defines "renewable energy" as:

- heat extracted from the ground (geothermal energy);
- heat extracted from the air or water, excluding waste heat (ambient heat);
- heat made technologically usable to cover thermal energy demand through the use of solar radiation;
- heat generated from solid, liquid or gaseous biomass; and
- cooling energy extracted from the ground or water or extracted from heat extracted or generated as per the above.

Only the following energy sources shall be recognized as biomass within the meaning of this Act (i.e., the EEWärmeG):

- biomass within the meaning of the Biomass Ordinance;
- biodegradable fractions of household and industrial wastes;

- landfill gas;
- sewage treatment plant gas;
- sewage sludge within the Sewage Sludge Ordinance; and
- vegetable oil methyl ester.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The principle laws and regulations are:

Renewable Energy Sources Act – Erneuerbare-Energien-Gesetz ("EEG"); in force since March 2000, latest amendment in 2012. An English translation is available on the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety's website, www.bmu.de/47883

The EEG is the most important legislative act promoting the use of renewable energies in Germany. It covers the connection of installations for the generation of electricity from renewable sources to the grid system, the offtake of the generated electricity by the respective grid system operator, the respective feed-in tariffs the grid system operator has to pay for the electricity, provisions for direct-marketing and a nationwide scheme to equalize the financial burden of the promotion of renewable energies. In detail:

Priority connection to the grid system

Installations generating energy from renewable energy sources have priority regarding connection to the grid system.

Priority offtake, transmission and distribution

Grid system operators are obliged to offtake, transmit and distribute electricity generated from renewable sources. Upon request, grid system operators shall immediately optimize, boost and expand their grid systems in accordance with the best available technology in order to guarantee the offtake, transmission and distribution of such electricity. In case of congestion in the grid system, grid system operators are obliged to regulate the installations generating energy from renewable energy sources provided it is ensured that the largest possible quantity of electricity from renewable energy sources and from combined heat and power generation is being off taken (feed-in management). If, however, they have to do so, they are obliged to compensate the installation operator (hardship clause).

Regulated tariffs

The EEG provides for a guaranteed minimum tariff to be paid for electricity which is exclusively generated from renewable energy sources. Installations generating energy from biomass/bioliquids are, however, only entitled to this compensation if they prove that the biomass used has been produced in accordance with the sustainability requirements set up in the Biomass Ordinance/Biomass-Electricity-Sustainability Ordinance.

Direct-marketing

Power plant operators may opt not to claim feed-in tariffs for the generated electricity and rather sell the electricity to a third party (direct-marketing) in order to increase their revenue. As long as plant operators stay in this direct-marketing regime they are not entitled to receive feed-in tariffs anymore. Yet, alternating between direct-marketing and the statutory feed-in tariffs are possible according to Sec. 33d EEG 2012. In case of the direct-

marketing of the generated energy according to Sec. 33b-33f EEG 2012, e. g. by a direct marketing contractor, the plant operators receive a statutory market premium according to Sec. § 33g EEG 2012. The market premium is calculated as set out in Sec. 33h and Appendix 4 EEG 2012. One of the factors for the calculation of the latter is the management premium as stipulated in the Ordinance on the Management Premium (Managementprämienverordnung – MaPrV). It covers the additional costs caused by the direct-marketing.

Nationwide equalization scheme

The costs resulting from the payment of feed-in tariffs are equalized according to the EEG and the Ordinance on the Further Development of the Nationwide Equalization Scheme (Equalization Scheme Ordinance). While the EEG provides for the principles of the equalization mechanism, the Equalization Scheme Ordinance stipulates detailed rules on the marketing of electricity generated from renewable sources by the transmission operators.

1st Step:

Grid system operators who offtake electricity generated from renewable energy sources are obliged to deliver it immediately to the respective upstream transmission system operator, who has to pay the regulated tariffs less avoided grid system usage costs to the grid system operator.

2nd Step:

The transmission system operators are obliged to meter the quantities and the temporal sequence of the quantities of electricity for which tariffs were paid and to equalize the quantities of electricity amongst themselves.

3rd Step:

Transmission system operators are obliged to market electricity for which tariffs have been paid, either themselves or jointly, on the Energy Exchange Spot Market (EEX) in an effective, nondiscriminatory and transparent manner.

4th Step:

Transmission system operators may claim reimbursement from the utility companies delivering electricity to final consumers to share the costs caused due to the EEG promotion regime that exceed the compensation received by marketing this electricity on the EEX (the so-called "EEG surcharge"). This EEG surcharge has to be calculated in a transparent manner according to the Equalization Scheme Ordinance. The EEG surcharge for 2011 was set at 3.530 ct/kWh, for 2012 at 3.592 ct/kWh for 2013 at 5.277 ct/kWh and for 2014 6, 240 ct/kWh. (Resource: *www.netztransparenz.de*).

5th Step:

Generally, utility companies are entitled to pass through the financial burden arising from the EEG surcharge to the final customers (general equalization scheme).

However, there is an exception granted to electricity-intensive manufacturing enterprises with high electricity consumption and rail operators (Secs. 41, 42 EEG). Upon request, their financial burden arising from the EEG promotion of renewable energy shall be limited pursuant to a special equalization scheme. The reason for this exception is that the electricity-intensive manufacturing industry shall not lose its competitiveness due to the EEG regulatory framework.

Ordinance on the Further Development of the Nationwide Equalization Scheme (Equalization Scheme Ordinance – Ausgleichsmechanismusverordnung; in force since July 2009, latest amendment in 2012) and Implementing Ordinance on the Further Development of the Nationwide Equalization Scheme (Equalization Scheme Implementing Ordinance – Ausgleichsmechanismusausführungsverordnung; in force since February 2010, latest amendment in 2013)

This Ordinances set out details of the complex equalization scheme under the EEG according to which purchased electricity is marketed on the spot energy market and costs are distributed amongst the utility companies delivering electricity to final customers (see above, steps 3 and 4). The Ordinance intends to simplify the process by minimizing costs and risks for the involved parties.

Act on the Promotion of Renewable Energies in the Heat Sector (Renewable Energy Heat Act – Erneuerbare-Energien-Wärmegesetz ("EEWärmeG"); in force since 2008, latest amendment in 2011).

The purpose of this Act is to facilitate sustainable development of the energy supply and to promote the further development of technologies for the generation of heat from renewable energies, especially with a view to climate protection, efficient use of fossil resources and the reduction of import dependence. According to this Act, owners of new buildings are obliged to satisfy their heat demand by using a specific amount of renewable energy (unless the building meets certain requirements regarding thermal insulation).

Ordinance on Generation of Electricity from Biomass (Biomass Ordinance – Biomasseverordnung; in force since 2001, latest amendment in 2012)

This Ordinance sets forth details regarding the scope of application of the EEG. This includes descriptions of:

- substances that shall be considered to be biomass;
- the technical processes for generating electricity from biomass; and
- environmental standards that must be met in relation to the generation of electricity from biomass.

Ordinance on Requirements Pertaining to Sustainable Production of Bioliquids for Electricity Production (Biomass-Electricity-Sustainability Ordinance – Biomassestrom-Nachhaltigkeitsverordnung; in force since 2009, latest amendment in 2011)

This Ordinance aims at ensuring that bioliquids used for electricity production which are eligible for the promotion framework under the EEG are always produced in full compliance with binding sustainability standards. Bioliquids not complying with these standards are not eligible for the promotion under the EEG. The liquid biomass must – in the interest of environment, climate and nature – be produced and used in a way that emits significantly less greenhouse gases than energy production from fossil fuels. Furthermore, the cultivation of the crops must not take place in areas having a high ecological value.

To qualify for the regulated tariffs stipulated by the EEG, installation operators have to prove vis-à-vis the grid system operator, that the offered energy has been solely generated from renewable energy sources, i.e., that it has been produced in accordance with these sustainability standards.

Ordinance on Requirements Pertaining to Sustainable Production of Biofuels (Biofuel-Sustainability Ordinance – Biokraftstoff-Nachhaltigkeitsverordnung; in force since 2009, latest amendment in 2012)

To promote biofuels, the German legislature grants tax relief. Energy products are generally subject to energy taxes under the German Energy Tax Act. Upon request, tax relief can, however, be granted for the share of biofuels used in the fuel mix, as long as the biofuels are generated in a sustainable manner according to the Biofuel-Sustainability Ordinance. The Energy Tax Act aims at increasing the share of biofuels in the fuel mix up to a volume of 20% by 2020, while ensuring at the same time that biofuels are generated in a sustainable manner.

Furthermore, the Federal Emission Protection Law (*Bundesimmissionsschutzgesetz*) requires that fuels placed on the market have to contain a certain amount of biofuels.

Ordinance on System Services by Wind Energy Plants (System-Service Ordinance – Verordnung zu Systemdienstleistungen durch Windenergieanlagen ("SDLWindV"); in force since 2009, latest amendment in 2011)

The development of onshore wind energy generation has been progressing in line with the political objectives with respect to the development of renewable energies. It is expected that up to 45,000 MW of onshore wind facilities will be installed by the year 2020. This development represents a challenge for grid system operators. They must ensure the security and stability of the grid system and at the same time transport significantly increasing shares of wind- generated electricity through the grid system. Therefore, newly installed and repowered onshore wind farms have to provide system services which have – so far – only been required from conventional installations. This Ordinance intends to boost the security and stability of the grid system, particularly solving wind-energy-related problems (such as frequency control, voltage control, network security), as well as technical developments in this field.

4. What are the principal regulatory bodies in the renewable energy sector?

Federal Network Agency (Bundesnetzagentur)

The tasks of the Federal Network Agency with regard to renewable energy are enumerated in the EEG.

Monitoring the (general) equalization scheme

The Federal Network Agency particularly monitors the (general) equalization scheme (Secs. 34 – 39 EEG – see question 3).

The Federal Network Agency shall monitor:

- that the utility companies are only charged by transmission system operators with tariffs paid in accordance with the general equalization scheme less the avoided grid system costs;

- that the data referring to the location and capacity of the installations the grid system operators are obliged to present to the Federal Network Agency, and other data the grid system operators have to publish, are duly submitted and published; and

- that, based on the information provided by the transmission system operators, third parties are able to understand how the EEG surcharge is calculated.

Responsibilities concerning Solar Radiation Power

- Operators of solar radiation installations have to report the location and capacity of the installations to the Federal

Network Agency in order to be entitled to the regulated feed-in tariffs (Sec. 17 para. 2 sentence 1 EEG);

- The Federal Network Agency publishes, in consultation with the Federal Ministry for the Environment, Nature and Nuclear Safety and the Federal Ministry of Economics and Technology, the percentages of the next year's degression and the resulting tariffs concerning those installations (Sec. 20a para. 6 EEG);

- Furthermore, the Federal Network Agency has the option to determine specifications of the technical equipment necessary to allow the so-called feed-in management (Secs. 6 and 11 EEG) and the order of deactivation pursuant to Sec. 11 EEG (Sec. 61 EEG).

Installation register

Under Sec. 6 EEG-D 2014, the Federal Network Agency shall establish and maintain an installation register in which all necessary information on the installations will be gathered, centralized and made available to the public.

Federal Office of Economics and Export Control (Bundesamt für Wirtschaft und Ausfuhrkontrolle)

The Federal Office of Economics and Export Control is charged with duties regarding the special equalization scheme for electricity-intensive enterprises and rail operators (Secs. 40 – 44 EEG). The financial burdens electricity-intensive manufacturing enterprises with high electricity consumption or rail operators face can, under certain conditions, be exempt from a part of the electricity costs which are accrued by the renewable energies promotion system according to the EEG.

5. What are the main permits/licenses required for renewable energy projects?

As main permits/licenses, the construction and operation of renewable energy installations may require a building permit under the applicable federal state building code and/or a permit according to the Federal Immission Control Act (*Bundesimmissionsschutzgesetz, BImSchG*). The building permit is issued by the competent building control authority; the permit under the BImSchG is generally issued by the relevant district authority.

A building permit may be necessary depending on the type, size and location of a plant, the area in which it is built as concerns planning law requirements as well as the applicable federal state jurisdiction. The main legal basis for the requirements and conditions of licensing are the Federal Building Code (*BauGB*), the Federal Land Utilisation Ordinance (*BauNVO*) and the respective building codes of the federal states. A building permit may be granted only if the installation complies with the planning law requirements, particularly with the determinations laid down in the respective building plan.

A permit according to the BImschG is generally required for installations that, on account of their nature or their operation, are particularly liable to cause harmful effects on the environment or otherwise endanger or cause considerable disadvantages or considerable nuisance to the general public or the neighborhood. The installations subject to licensing are listed in the Ordinance on Installations Requiring a Permit (*4. BImSchV*).

The respective permit has to be granted if the installations are in compliance with the requirements set forth in the BImSchG itself and the ordinances issued thereunder as well as with all other public law requirements. This includes, inter alia, the relevant planning law situation, the obligations of operators of

installations subject to a permit according to the BImSchG and any other provisions under public law or any occupational safety and health concerns. Depending on the type and size of a plant, it may be necessary to carry out an ecological impact assessment as part of the applicable licensing procedure.

Since the BImSchG provides the legal basis for the granting of a permit, the permit has a so-called concentrating effect (*Konzentrationseffekt*). This means that, with the exception of planning approvals, approvals of operation plans under mining law, official decisions based on nuclear law and permits and authorizations under water law, the permit under the BImSchG includes all other official decisions, in particular licenses under public law, approvals, grantings, permits and authorizations. Thus, a permit under the BImSchG also contains a building permit under the applicable federal state building code.

Offshore wind farms, which are usually situated beyond Germany's coastal waters in the exclusive economic zone, require a permit pursuant to the Maritime Facilities Ordinance from the German Maritime and Federal Hydrographic Agency (*Bundesamt für Seeschifffahrt und Hydrographie* or *BSH*) as the single authority responsible for granting such permits.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Electrical power is generally subject to an electricity tax in Germany. However, the electricity tax law allows for exemptions for electrical power if it is exclusively generated from renewable energy sources and if the electrical power is off taken from a grid system / power line that provides electrical power exclusively from renewable energy sources (Sec. 9 para. 1 no. 1 Electricity Tax Act).

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

According to the principle of the priority purchase, transmission and distribution:

- grid system operators shall immediately and as a priority offtake and pay for, transmit and distribute the entire available amount of electricity generated from renewable energy sources (Sec. 8 para. 1, 16 et seq. EEG); and

- grid system operators shall, upon request of those interested in feeding in electricity, immediately optimize, boost and expand their grid systems in accordance with the best available technology in order to guarantee the offtake (and payment for), transmission and distribution of the electricity generated from renewable energy sources (Sec. 9 para. 1 sentence 1 EEG). This obligation also applies to upstream grid system operators (Sec. 9 para. 1 sentences 2 EEG).

In the event of system congestion, grid system operators may regulate the system by means of so-called feed-in management instruments (Sec. 11 EEG). Using these instruments, grid system operators shall be entitled to take technical control over installations connected to their grid system with a capacity of more than 100 kW – and of more than 30 kW in the case of solar radiation if:

- the grid system capacity in the respective grid system area would otherwise be overloaded on account of that electricity;

- they have ensured that the largest possible quantity of electricity from renewable energy sources and from combined heat and power generation is being off-taken; and

- they have called up the data on the current feed-in situation in the relevant region of the grid system.

The respective installation operator, however, has a claim for compensation: The grid system operator whose grid system gives rise to the need for the feed-in management shall compensate those installation operators who, due to such measures, were not able to feed in electricity. Compensation is limited to 95% of the lost tariffs and revenues less (if applicable) the expenses saved by the installation operator if the lost tariffs in one year do not exceed 1% of the revenues of the installation operator. Once that is the case, 100 % of the lost tariffs shall be compensated (Sec. 12 para. 1 EEG). Claims for further compensation made by the installation operators against the grid system operator shall remain unaffected (Sec. 12 para. 3 EEG).

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

There is a minimum price guarantee for electricity which is exclusively generated from renewable energy sources (Secs. 16 – 33 EEG).

General provisions regarding tariffs

The EEG sets forth the basic parameters of the tariff system which apply equally to all types of renewable energy sources, such as:

- the commencement and duration of the tariffs paid (20 years plus the commissioning year from the start of the commission of a new installation);

- the calculation of the tariffs in accordance with the capacity of the installation in relation to the threshold value to be applied in each case (principle of gliding tariffs);

- the degression (the specific tariffs shown in the EEG are subject to a reduction each year by certain percentages set forth in Sec. 20 et. seq.; the applicable tariff calculated for any given year shall apply for the above mentioned duration).

Moreover, the EEG provides for certain additional payments subject to technical conditions (e.g., repowering bonus, remote control bonus).

Under the EEG-D 2014 the remuneration scheme will be fundamentally altered from the existing feed-in tariff model to mandatory direct-marketing for all newly commissioned plants (Sec. 2 para. 2 EEG-D 2014). A purchase guarantee therefore only exists in cases where a feed-in tariff is granted according to Sec. 19 para. 1 No 2, 35, 36 EEG-D 2014. Under Sec. 35 EEG-D 2014, small plants receive feed-in tariffs
(i) if they are commissioned before 1 January 2016 and do not exceed an installed capacity of 500 kW; (ii) if they are commissioned after 31 December 2015 and before 1 January 2017 and do not exceed an installed capacity of 259 kW; and (iii) if they are commissioned after 31 December 2016 and no dot exceed an installed capacity of 100 kW. Additionally, a feed-in tariff is granted in "exceptional cases" according to Sec. 36 EEG-D 2014, whereat these exceptional cases are not further specified by the draft. The draft bill does not provide for the scope of such "exceptional cases". The draft bill reasoning clarifies that it may be an exceptional case if and to the extent direct marketing is temporarily not possible, e.g., in case of insolvency of the direct marketing contractor.

Special provisions regarding tariffs

In addition to the rules applicable to all types of renewable energy sources, the EEG sets forth specific rules for the promotion of every single type of installation in detail (in particular the tariff to be paid).

The following table shows the minimum tariffs for the different renewable energy sources. The tables below sets forth the tariffs shown in the EEG which, however, are subject to the degression mentioned above.

Renewable Energy Source	EEG	Rated Output/Capacity	Minimum Tariff (cent/KWh per 2012) (subject to degression)
Hydropower	Sec. 23	max. 500 kW max. 2 MW max. 5 MW max. 10 MW max. 20 MW max. 50 MW > 50 MW	12.7 8.3 6.3 5.5 5.3 4.2 3.4
Landfill Gas	Sec. 24	max. 500 kW max. 5 MW	8.6 5.89
Sewage Treatment Gas	Sec. 25	max. 500 kW max. 5 MW	6.79 5.89
Mine Gas	Sec. 26	max. 1 MW max. 5 MW > 5 MW	6.84 4.93 3.98
Biomass	Sec. 27	max. 150 kW max. 500 kW max. 5 MW max. 20 MW	14.3 12.3 11.0 6.0
Biogas from fermentation of biological waste	Sec. 27a	max. 500 kW max. 20 MW	16.0 14.0
Biogas from fermentation of liquid manure	Sec. 27b	all installations (< 75 kW, minimum 80 % liquid manure use)	25.0
Geothermal Energy	Sec. 28	all installations	25.0

Wind Energy Onshore	Sec. 29	● basic tariff ● initial tariff (first 5 years after start of commissioning)	4.87 8.93
Wind Energy Offshore	Sec. 31	● basic tariff ● initial tariff (first 12 years after start of commissioning) or ● initial tariff (first 8 years after start of commissioning)	3.5 15.0 19.0
Solar Radiation	Sec. 32	basic tariff	13.5
Solar Radiation – attached to or on top of buildings	Sec. 32 para 2	max. 10 kW max. 40 kW max. 1 MW max. 10 MW	19.5 18.5 16.5 13.5

The following table shows the special bonuses:

Name of Bonus	Source of Energy	Basic Principles, e.g., Innovative Technology	Amount of Bonus (cent/ KWh) / Rated Output (Capacity) (subject to degression)
Gas-processing Bonus (Sec. 27c)	● landfill gas (Sec. 24) ● sewage treatment gas (Sec. 25) ● biomass (Sec. 27 para 1) ● biogas from fermentation of biological waste (Sec. 27a para 1)	gas processing	3.0 by max. 700 standard m³/h 2.0 by max. 1000 standard m³/h 1.0 by max. 1400 standard m³/h
Bonus for Electricity generated by using explicit listed biomass (Sec. 27 para 2)	biomass (Sec. 27 para 1)	● electricity is exclusively generated by using biomass explicit listed in appendix 2 to the Biomass Ordinance ● electricity is exclusively generated by using biomass explicitly listed in appendix 3 to the Biomass Ordinance	6.0 by max. 500 kW 5.0 by max. 750 kW 4.0 by max. 5 MW generally 8.0 by max. 5 MW if electricity is exclusively generated using cattle/swine /sheep liquid manure or other explicit listed biomass 8.0 by max. 500 kW 6.0 by max. 5 MW
Heat-Use Bonus	geothermal energy (Sec. 28 para 2)	heat-use	5.0

Special provisions regarding tariffs under the EEG-D 2004

Renewable Energy Source	EEG	Rated Output/Capacity	Reference amounts (cent/KWh per 2012) (subject to degression)
Hydropower	Sec. 38	max. 500 kW max. 2 MW max. 5 MW max. 10 MW max. 20 MW max. 50 MW > 50 MW	12.52 8.25 6.31 5.54 5.34 4.28 3.30
Landfill Gas	Sec. 39	max. 500 kW max. 5 MW	8.42 5.83
Sewage Treatment Gas	Sec. 40	max. 500 kW max. 5 MW	6.69 5.83
Mine Gas	Sec. 41	max. 1 MW max. 5 MW > 5 MW	6.74 4.91 4.00
Biomass	Sec. 42	max. 150 kW max. 500 kW max. 5 MW max. 20 MW	13.66 11.78 10.55 5.85
Biogas from fermentation of biological waste	Sec. 43	max. 500 kW max. 20 MW	15.26 13.38
Biogas from fermentation of liquid manure	Sec. 44	all installations (< 75 kW, minimum 80 % liquid manure use)	23.73
Geothermal Energy	Sec. 46	all installations	25.20
Wind Energy Onshore	Sec. 47	● basic tariff ● initial tariff (first 5 years after start of commissioning)	4.95 8.9
Wind Energy Offshore	Sec. 48	● basic tariff ● initial tariff (first 12 years after start of commissioning) or ● initial tariff (first 8 years after start of commissioning)	3.90 15.40 19.40
Solar Radiation	Sec. 49	basic tariff	9.23
Solar Radiation – attached to or on top of buildings	Sec. 49 para 2	max. 10 kW max. 40 kW max. 1 MW max. 10 MW	13.15 12.80 11.49 9.23

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

The Kyoto Protocol was ratified by Germany in 2002. It entered into force on 16 February 2005.

The general regime for carbon credits in Germany is the European Union Emissions Trading System ("EU ETS"). Under the EU ETS, the EU Member States agree on national emission caps which have to be approved by the EU commission. In order to comply with the national cap the Member States allocate allowances to the industrial operators subject to the EU ETS. The operators may reassign or trade their allowances. However, after the end of each year they have to return a number of allowances depending on their actual emissions to the competent national authority.

When the Kyoto Protocol came into force, Phase I of the EU ETS had already become operational. The EU later incorporated the so-called Kyoto flexible mechanism certificates (these are in detail: Joint Implementation projects (JI), Clean Development Mechanism (CDM) and International Emissions Trading (IET)) into the EU ETS. Up to a certain extent, Emission Reduction Units (ERUs) and Certified Emission Reductions (CERs) resulting from JI respectively CDM may be used by industrial operators in order to cover their emissions.

In Germany, the EU ETS is implemented by the carbon emission trading act (*Treibhausgas-Emissionshandelsgesetz – TEHG*) in national law. The allocation of allowances for the third trading period from 2013 until 2020 is stipulated in the Ordinance on allocation 2020 (*Zuteilungsverordnung 2020 – ZuV 2020*). Generally, the German Emissions Trading Authority (*Deutsche Emissionshandelsstelle – DEHSt*) at the Federal Environment Agency (*Umweltbundesamt*) is the competent national authority regarding the allocation of allowances and the surveillance of actual emissions. The German Emissions Trading Authority also is the competent authority to implement the market instruments of the Kyoto Protocol.

10. Do renewable energy based power plants have priority for connection to the grid?

According to the principle of priority connection to the grid system, grid system operators shall immediately and as a priority connect installations generating electricity from renewable energy sources and from mine gas to that point in their grid system which is suitable in terms of voltage and which is at the shortest linear distance from the location of the installation if no other grid system has a more favorable (technically and economically) grid system connection point (Sec. 5 para. 1 sentence 1 EEG).

The costs associated with connecting installations generating electricity from renewable energy sources to the grid system connection point and with installing the necessary metering devices for recording the quantity of electricity transmitted and received shall be borne by the installation operator (Sec. 13 para. 1 EEG).

If the grid system operator assigns the installations a different grid system connection point, he shall bear the resulting incremental costs (Sec. 13 para. 2 EEG).

Regarding the grid connection of offshore windfarms, further amendments to the German Energy Act ("EnWG") have been adopted at the end of 2012. Such amendments set forth planning mechanisms for the offshore grids, provisions for claims of windfarm operators due to delayed grid connection or unavailability of the grid as well as provisions and conditions for a pass through of damages paid by grid operators to end customers.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

There are no incentives, such as state aids, for local manufacturing of equipment or materials used in the construction of renewable energy-based power plants. If the public procurement law is applicable, the public authority or public company is obliged to set non-discriminatory conditions for the bidders.

12. What are the other incentives available to renewable energy generation companies?

There are various incentives available to renewable energy generation companies. In particular, the Market Incentive Program for Renewable Energy Sources by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety has to be mentioned. In the context of the Market Incentive Program there are two kinds of incentives: loans with subsidized interest rates (the interest rates on the loan are below market rates) on the one hand and investment grants on the other hand.

Loans by the Reconstruction Loan Corporation (KfW – Kreditanstalt für Wiederaufbau)

The KfW grants loans with low interest rates for the erection of large installations producing heat or power from renewable energy sources; e.g., the erection or extension of district heating networks or to innovative technologies for the utilization of heating and cooling energy. Eligible in this context are biomass heating systems, large solar collectors, large heat storage tanks, biogas pipelines for the transport of untreated biogas to combined heat and power installations or installations which process biogas to natural gas quality and feed it into the network. Further, the KfW provides grants for the redemption of the loans. The loans are in particular granted to smaller and middle sized companies to effect a change to climate friendly and sustainable energy supply in this sector.

In addition, a EUR 5 billion loan facility program aimed at supporting offshore windfarms was established by the KfW. With this special program, the KfW wants to support up to ten offshore windfarms in the exclusive economic and the twelve-mile coastal zone of the North and the Baltic Sea via direct and indirect loan facilities. The financial amount per project can be up to EUR 700 million. Furthermore, the credits have a fixed interest period of ten years.

Investment Grants

The other incentive of the Market Incentive Program is the provision of investment grants allocated by the Federal Office of Economics and Export Control. Eligible in this context are, for example, smaller solar collectors and biomass heating systems.

The Environmental Innovation Program

The Environmental Innovation Program intends to finance large -scale environmental projects, which first demonstrate advanced technological processes and process combinations to prevent or minimize environmental impacts. Like the above-mentioned incentives it is based on a loan with low interest rates provided by the KfW combined with grants for the redemption of the loan.

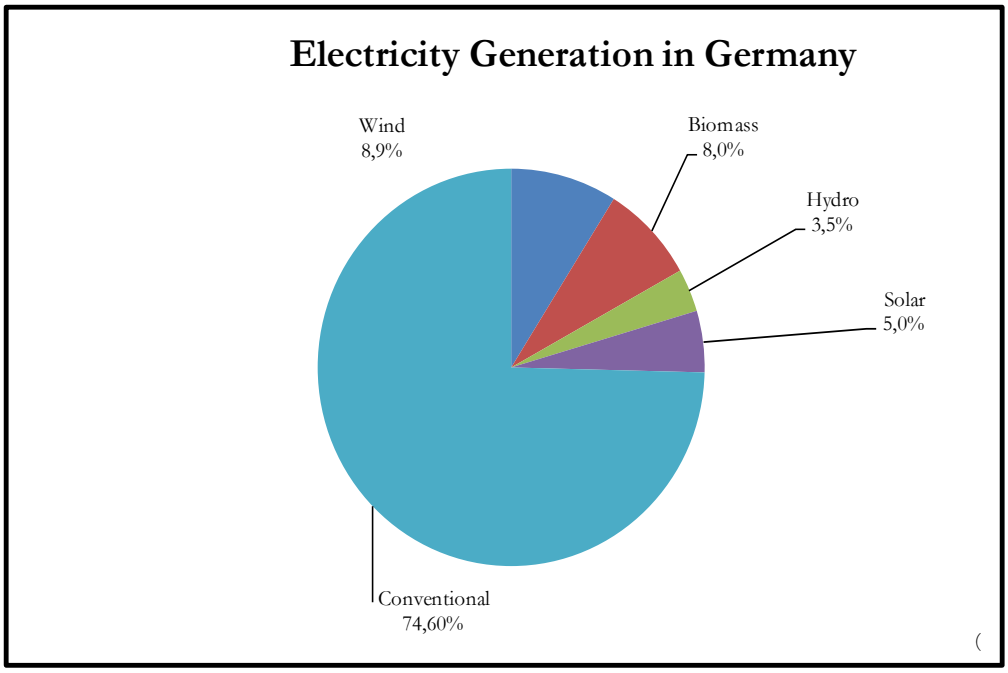
STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

In 2011, renewable energy sources had a 25% share in the total generation of electricity. This share is steadily growing. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety anticipates that Germany will be able to cover its total energy consumption generated from renewable sources by the year 2050.

Resources:

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), development of renewable energy sources in Germany in 2012 (Status as per February 2013), AEEG-Stat; *www.netzbetreiber.de; www.ewea.org; www.bmwi.de*



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GENERAL

1. What is the nature and importance of renewable energy in your country?

Currently, renewable energy ranks relatively low on the agenda in politics. In contrast, private investors would be willing to invest into renewable energy, especially with respect to biomass, geothermal energy, and biofuel projects if suitable subsidies were available. The legislative background has not changed recently. In 2010, the government published Hungary's Renewable Energy Action Plan for the period from 2010 to 2020. In 2011, the Hungarian Parliament adopted the National Energy Strategy until 2030, with an outlook until 2050. They adopted an optimistic scenario with the ambitious target of increasing the ratio of electricity from renewable energy sources (the "RES-E") in domestic electricity generation to 14.65% by 2020.[1] [2] [3]

This renewable energy action plan is also intended to serve as the basis for a renewable energy act and a sustainable energy management act to be approved by the Parliament, as well as of a subsidy program in energetics (co-financed by the EU) for the 2014-2020 period. In late 2012, the competent minister was asked to review the Renewable Energy Action Plan and, therefore, the new subsidy system is delayed further.

Nevertheless, MAVIR, the Hungarian state-owned transmission network operator, expects the Hungarian energy market to grow by an annual rate of 1.5% during the next fifteen years decades and that the peak power load will increase by approximately 70 MW a year.[4]

Due to aging power plants and growing demand, there is currently considerable room for new power plant capacity. In Hungary, 18 big power plants and approximately 300 small power stations generate electricity. The current approximately 9,000 MW gross nominal capacity of the Hungarian power plants can increase to 10,500 MW by 2030, primarily due to the planned new nuclear power plant blocks. However, owing to aging equipment, approximately 6,300 MW gross new capacity must be installed in Hungary during the coming two decades. Of the new capacities, 7,000 MW will be given by the big power plants (including 2,000 MW by the two new nuclear blocks) and 1,600 MW by small power plants built on renewable energy sources including, primarily, biomass and wind. Power plants burning biomass can have significant role in district heating as well.[5]

According to the Hungarian Government's New Széchenyi Plan (in Hungarian: Új Széchenyi Terv), a special area for development is the development of the so-called "green economy" that helps increase the employment rate and aims at supporting the development and use of innovative technologies, increasing the security of supply

1 Hungarian Renewable Energy Action Plan 2010-2020, Budapest, 2011 p. 38

2 Pursuant to the EU Renewable Energy Directive, Hungary is required to achieve a 13% share of renewable energy sources in its final energy consumption by 2020.

3 National Energy Strategy 2030, Budapest, 2011 p. 13

4 MAVIR Source-side Capacity Balance of the Electricity System, Budapest, 2013, MAVIR-RTO-DOK-0008-00-2013-09-30, issued on 30 September 2013.

5 MAVIR Source-side Capacity Balance of the Electricity System, Budapest, 2013, MAVIR-RTO-DOK-00085-00-2013-09-30, issued on 30 September 2013.

and the diversification of sources, thus decreasing the dependency on energy imports (primarily on Russian natural gas) and encouraging the generation and utilization of renewable energy. The priorities of the Environmental and Energy Efficiency Operative Program (in Hungarian: Környezetvédelmi és Energia Operatív Program, the "KHEOP") encourage the use of renewable energy sources and the improvement of the efficiency of energy consumption.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Under Hungarian Act LXXXVI of 2007 on Electricity (the "Electricity Act"), renewable energy includes energy resources other than fossil fuel and nuclear energy such as: solar, wind, geothermic, wave, tidal and hydro energy, biomass (whether used directly or indirectly); landfill gas, gas from waste and sewage, and biogas.

According to the current Renewable Energy Action Plan, Hungary will subsidize primarily biomass (forestry and agriculture), biogas, bio and alternative fuels, geothermal and thermal energy and, secondarily, solar and wind energy and hydropower.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

General Framework

The Electricity Act sets forth the basic principles of licensing power plants using renewable energy, the connection of such power stations to the electricity grid and the basis of incentivizing and promoting renewable energy.

Under the Electricity Act, electricity produced from renewable sources has priority when licensing new generation capacity. Any company eligible for a Hungarian electricity generation license may establish RES-E generation plants at its own business risk, except for wind farms. Licenses for wind farms may only be acquired through a tender procedure (see Resource-specific Rules below). The licensing of RES-E plants in Hungary is a rather complex and lengthy procedure which is relatively under-coordinated, and involves many authorities, including those of energy, environmental protection, water management and construction (see also Section 5 below). This is why a key objective of Hungary's Renewable Action Plan is to simplify and accelerate the licensing procedures of renewable energy production.

The Government Decree implementing the Electricity Act further specifies the role of the Hungarian Energy Office (the "HEO") in supervising and licensing the obligatory off-take regime.

Off-take Obligation

The off-take obligation is regulated in detail by Government Decree No. 389/2007 on the off-take obligation of electricity generated by using renewable sources or waste and the price thereof.

Decree No. 63/2013 of the Ministry of National Development on the distribution of energy in the mandatory off-take system by the transmission network operator and applicable prices sets forth the rules on schedules and data supply, metering, pricing and invoicing of electricity under the off-take obligation.

For a detailed description of the off-take regime, see please Sections 7 and 8 below.

Resource-specific Rules

Further specific rules and regulations apply to the most important of renewable resources, such as wind, namely Decree No. 33/2009 of the Ministry of Transport, Communications and Energy of Hungary on the terms of the tender regarding the installment of wind farm capacity, the minimum contents of the tender and the rules of such tender; and biofuels, namely Government Decree No. 343/2010 regarding the requirements and certification of sustainable biofuel production.

Wind Energy

The HEO issues licenses for wind farms through tenders. In general, the HEO prepares and publishes a mid-term forward-looking assessment regarding the capacity balance of the electricity grid by 15 September of each year, and determines if new wind farm capacities may be installed and the amount of such new capacity. Once the HEO establishes that new wind farm capacity may be added to the electricity grid, the HEO prepares a call for tender, based on which it issues licenses for the operation of electricity generating wind farms.[6]

In 2006, the HEO granted a license to build 330 MW wind farm capacity in Hungary but did not issue a tender for the installation of extra wind power capacity in 2007 and 2008. Since then, practically the entire licensed wind energy generation capacity has been installed and commissioned in Hungary; nevertheless, no additional new capacities have been licensed.

The HEO issued a call for tenders on new wind farm capacity in late September 2009, with a total capacity of 410 MW. 68 bidders submitted tenders on 1 March 2010, to establish 1,118 MW wind energy capacity. The HEO cancelled the tender in July 2010. The national target for 2020 is aligned, in respect of wind energy, to the limit of controllability of the electricity system, which is, to our present knowledge, capable of receiving wind energy up to an approximate total output of 740 MWe.[7]

Biofuel

The Hungarian Government has established a national goal of achieving a 10% share of RES-E by 2020, in terms of the energy consumption of all types of transportation, in line with the EU Biofuels Directive.[8] Legislative instruments, adopted in late 2009, imposed a statutory obligation on fuel vendors to ensure that an appropriate share of fuels sold is biofuels, whether blended or clean. Fuel vendors must register the share of biofuels sold and report this to the appropriate authority designated by law. The authority may impose a fine upon vendors who do not submit such a report or sell less biofuels than required by law.[9] 4.9% of the quantity of gasoline and diesel oil (expressed in energy content) sold must be certified biofuels.[10]

6 Articles 5 and 6 of Decree No. 33/2009 of the Hungarian Ministry of Transport, Communications and Energy on the terms of the tender regarding the installment of wind farm capacity, the minimum contents of the tender and the rules of such tender.

7 Renewable Energy Action Plan p. 39

8 See Hungarian Act CXVII of 2010 on advancing the use of renewable energy for transportation purposes and reducing the greenhouse gas emission of energy used in traffic, and Government Decisions 2233/2004 and 2058/2006.

9 See Hungarian Act CXVII of 2010

10 Article 5 of Government Decree No. 343/2010 on the requirements and certification of sustainable biofuel production.

4. What are the principal regulatory bodies in the renewable energy sector?

There are two main regulatory bodies responsible for the electricity industry: (i) the Ministry of National Development (the "Ministry"); and (ii) the HEO.

The Ministry defines Hungary's energy strategy and is primarily responsible for the establishment of off-take prices for RES-E and network usage fees.

The HEO is the government authority responsible for the electricity industry's compliance with the Electricity Act, other energy-specific legislative instruments and the decisions of the HEO. The HEO is supervised by the Minister for National Development. Its responsibilities include: issuing and withdrawing operational licenses; implementing and enforcing the Electricity Act; approving the Operating Code; approving the Commercial Code; approving the General Terms and Conditions of the licensed operators of the energy market; and setting consumer prices in the regulated market segments (i.e., universal service and system usage fees) and consumer protection.

In addition to the HEO, the Hungarian Competition Authority actively supervises anti-competitive market practices in the energy market.

5. What are the main permits/licenses required for renewable energy projects?

The licensing of RES-E projects does not materially differ from the licensing of any other (conventional) electricity generation projects. The licensing procedure is rather segmented and involves numerous authorities. Although the licensing procedure is expected to be simplified in the future, currently the following authorities have competence in the licensing procedure of RES-E projects.

Local Municipalities

Local municipalities are responsible to elaborate on, amend and approve local zoning plans which set forth the possible areas and conditions of installing RES-E (or conventional) electricity generation projects.

Environmental Authorities

The competent environmental authorities are responsible for the issuance of the environmental license of the project in the form of an IPPC license (if the planned project is expected to have a significant environmental effect) or a simplified environment usage license (if the expected effect of the project to the environment is not considered significant).

Environmental authorities are also responsible for issuing water usage licenses.

Building Authorities

As specialized building authorities, the territorial Metering and Technical Safety Authorities are responsible for the issuance of building and occupancy permits of electricity generation projects.

HEO

Under the Electricity Act the HEO is responsible for issuing licenses for the installation and operation of electricity generation projects. Power plants, regardless of whether they are RES-E or conventional, below a nominal capacity of 50 MW face a simplified licensing procedure compared to those above a nominal capacity of 50 MW.

In the case of RES-E projects eligible to participate in the mandatory off-take regime, the HEO also specifies in the license the quantity of the electricity produced subject to mandatory off-take and the term of such mandatory off-take.

Distribution and Transmission System Operators

Although not expressly authorities, the distribution system operators ("DSOs") and the transmission system operator (i.e., MAVIR) also have an important role in the licensing procedure of RES-E projects.

A connection agreement concluded with the competent DSO is a precondition to the issuance of an HEO electricity generation license, whilst RES-E project developers entitled to sell the generated electricity in the mandatory off-take regime must enter into an off-take agreement with MAVIR.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Hungary offers specific development tax incentives which work in the form of tax allowances and reduce the corporate income tax payable by a business for carrying out environmental protection or rehabilitation projects that aim to reduce the use and pollution of the environment, and also for projects improving energy efficiency, to preserve and conserve natural resources, and to promote efficient management that ensures the renewal of resources.

In order to take advantage of the tax incentive, prior to the commencement of the project, a notification or application must be served upon the Ministry of National Economy. The project must have a minimum investment value of HUF 100 million and at least 25% of the cost must be funded by the investor's own funds.

Moreover, to be eligible for a tax incentive granted for an environment protection project, the investor must have been a tax payer of Hungary for at least five years prior to the submission of the notification or application.

The maximum amount of the corporate tax deduction that may be claimed under the incentive depends upon the geographical location of the project. Developments in deprived areas of Hungary may entitle investors to claim as much as 50% of the investment costs, while investors in the utmost part of Central Hungary are not entitled to any deduction. In other areas the ratio varies between 25% and 35%.

The investor can take advantage of the tax incentive in the given tax year, or the tax year following the completion of the project, and continue doing so in the following nine tax years, provided that the project remains in operation for at least five years (or three years if run by an SME) following the start of operations. At the latest, the tax incentive can be utilized in the 14th tax year following the tax year in which the notification or application was submitted to the Ministry of Finance.

Renewable energy generation companies may also take advantage of other corporate income tax incentives of a general nature. For example, projects that result in the creation of new jobs, projects that are carried out by SMEs, or projects that are carried out on the territory of designated local governments or represent a value of more than HUF 3 billion. The requirements that need to be met in order to claim a benefit under these general tax incentives are set out in Hungarian Act LXXXI of 1996 on Corporate Tax. The incentives only reduce the corporate income tax burdens of a business but do not reduce other taxes specific to the energy sector.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Obligatory off-take regime

The Electricity Act reformed the obligatory off-take regime effective of 1 July 2011, in a manner that producers of cogenerated electricity were removed from the obligatory off-take system. Accordingly, only electricity produced from renewable energy sources and waste (so-called "Green Power") is now eligible for the obligatory off-take system. Cogeneration power plants up to nominal capacity of 50 MW could opt to become members of the 'cogeneration balance circle' established by the Hungarian transmission system operator MAVIR[11].

The cogeneration power plants that joined the new balance circle[12] may sell electricity in the cogeneration balance circle only. The electricity in the new cogeneration balance circle is then sold by MAVIR on the Hungarian electricity exchange (HUPX).

The amendment of the Electricity Act also introduced the so-called 'cogeneration restructuring tariff' that is payable by license holders (including universal service providers) supplying customers (i.e., electricity users) and system users buying electricity directly. The new tariff is aimed at supporting heat production instead of electricity generation.

Option to introduce the green and cogenerated certificate system

Pursuant to the Electricity Act, the government may introduce a so-called "green and cogenerated certificate system" instead of the current regime based on obligatory off-take obligation, also observing the provisions of the EU Renewable Energy Directive regarding guarantees of electricity, heating and cooling produced from renewable energy sources. Under the green and cogenerated certificate system, RES-E would be sold at conventional market prices for electricity. In order to finance the additional cost of producing Green Power and to ensure that the desired Green Power is generated, all consumers (or producers) would be obliged to purchase a certain number of green certificates from RES-E producers according to a fixed percentage, or quota, of their total electricity consumption. As the green and cogenerated certificates would be market-based instruments, they have the theoretical potential, if functioning well, of ensuring best value for investment.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Pursuant to the regime of state-set prices, the same feed-in tariffs apply to different types of RES-E, except for wind and solar energy sources. The off-take prices are published annually on the HEO's website. The HEO determines guaranteed peek, off-peek and deep off-peek prices based on the basic fees set forth in Government Decree No. 389/2007, indexed by the CPI issued by the Hungarian Statistical Office. For certain types of RES-E, the CPI must be decreased by an efficiency factor of 1%. In case of cogenerated electricity, the off-take price must also be indexed in accordance with any change to the officially fixed price for natural gas.

11 The new obligatory off-take system, differentiating based on technologies and power plant capacities, as well as certain other aspects, will come into force following the review of the Renewable Energy Action Plan.

12 92 of the 160 producers concerned, with total nominal capacity amounting to 4% of the Hungarian electricity system, joined the new balance circle.

Such indexation of the off-take price for cogenerated electricity may also take place during the year, if the change in gas prices makes it necessary.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Hungary, like all other Member States of the European Union, has ratified the Kyoto Protocol and it is binding on Hungary since 2005. Hungary participated in the first two trading periods of the Kyoto Protocol and continues to do so in the third trading period that commenced in 2013.

Hungary has adopted detailed regulations regarding the allocation, registration, accounting and trade of carbon credits[13] in accordance with the applicable EU directives, and a directly applicable EU resolution establishing a common Emissions Trading System in the European Union.

Hungary has also adopted laws for the execution of the Kyoto Protocol, under which RES-E projects in Hungary may make use of the joint implementation mechanism under Article 6 of the Kyoto Protocol to attract investments.[14]

Hungary has a significant surplus of carbon credits that it can sell to other states participating in the international carbon trading regime due to historical reasons (i.e., structural changes in Hungary's industry during and after the 90's) and the recent economic crisis affecting also industry. The revenue so generated is allocated to the Green Investment System which may only use such funds for emission reduction purposes in accordance with climate policy goals.

The Green Investment System is supervised and operated by the Minister of National Development. Through regular and structured programs, the Green Investment System offers refundable and non-refundable subsidies to emission reducing projects, such as energy efficiency of buildings, increase of renewable energy use, increase of efficiency of district heating or the implementation of carbon sinks.

10. Do renewable energy based power plants have priority for connection to the grid?

In terms of connection to the electricity grid, RES-E plants enjoy certain benefits under, or are prioritized by, the Electricity Act and Decree No. 76/2011 of the Ministry for National Development on the financial and technical conditions of connecting to the public electricity grid.

The distribution operators must prioritize the electricity from renewable sources when ensuring connection and maintenance of the distribution network. The distribution operators may deny access to the distribution grid or limit, reduce or suspend the service for contracted distribution capacities if it would be disadvantageous for the generation of electricity from renewable energy sources.

The transmission network operator and the distribution network operators must bear the costs of upgrading the public network (especially transmission capacity and grid connection) when capacities from renewable sources are installed to the system, to the extent provided for by law. If the share of renewable energy sources in the production of a power plant equals or exceeds 70% or 90%, such power plant gets a statutory reduction of the network connection fees in an amount of 30% and 50%, respectively.

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13 Act CCXVII of 2012 on the participation within the greenhouse gas trading system of the Union and Government Decree No. 410/2012 on the implementation of Act CCXVII of 2012.

14 Act XL of 2007 on the implementation framework of the UN's Climate Change Convention and the Kyoto Protocol

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

The new Rural Development Program of Hungary during the period of 2014 to 2020 (in Hungarian: Vidékfejlesztési Program 2014-2020) is currently being finalized. The currently available draft envisages subsidizing the production and processing of biomass raw materials at competitive prices and the electricity self-supply of producers, including the installation of biomass power generation and electricity storage equipment. The New Széchenyi Plan also supports the use of renewable energy produced from biomass.

Further subsidies and incentives may be available in Hungary; however, these are not RES-E specific.

12. What are the other incentives available to renewable energy generation companies?

Investment in RES-E is supported by the Environmental and Energy Efficiency Operative Program that distributes EU Structural Funds. The Office of the Prime Minister and the Ministry of National Development, having competence in matters of the environment, is responsible for the strategy and decisions with respect to KHEOP and the Hungarian Energy Centre (in Hungarian: Energia Központ Kht.,[15] the "HEC") is the intermediate coordinating body. When deciding which investments should be subsidized from this fund, these entities examine the cost-efficiency of each project and also take into account thesubsidy provided through the compulsory energy purchase scheme. The application period for the KHEOP programs is between 2014 and 2020. It is expected that the new KHEOP program will allocate over HUF 1,000 billion in the period between 2014 and 2020.

In order to facilitate the production and use of biofuels, mining and water management companies may be eligible for partial excise tax rebates after the biofuel used for vehicles which operate off the public roads.[16]

Indirect incentives to RES-E generation companies include participation in the European Union Emissions Trading Scheme, project financing under Article 6 of the Kyoto Protocol and the household-scale green investment system funded from Hungary's revenues of international emissions trading under the Kyoto Protocol (see Section 9).

In January 2012, Hungary applied for derogation from the introduction of the emission quotas: Hungary undertook three investments with an aggregate value of 120 billion HUF, i.e., the amount corresponding to the quantity of free quotas. To this end, Magyar Villamos Művek, the state owned power company, is required to build a pump-storage hydro power plant and gas pipeline as well as introduce the smart metering of energy consumption by 2020.

Within the framework of the Renewable Energy Action Plan, the Hungarian government also plans to establish a so-called "green bank" to provide financial coverage for green investments, including those related to renewable energy. In addition, green financing schemes and programs are planned to be introduced.

[15] See *www.energiakozpont.hu*

[16] Article 55(4) of Hungarian Act CXXVII of 2003 on excise tax.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

The chart below shows the share of different energy sources used for gross electricity production in Hungary in 2012. Renewable energy sources, including waste, covered 8.07% of gross electricity generation. Currently, the most significant renewable energy sources in Hungary are biomass, including biomass and biogas used for electricity generation, and waste, while the share of solar power is insignificant.

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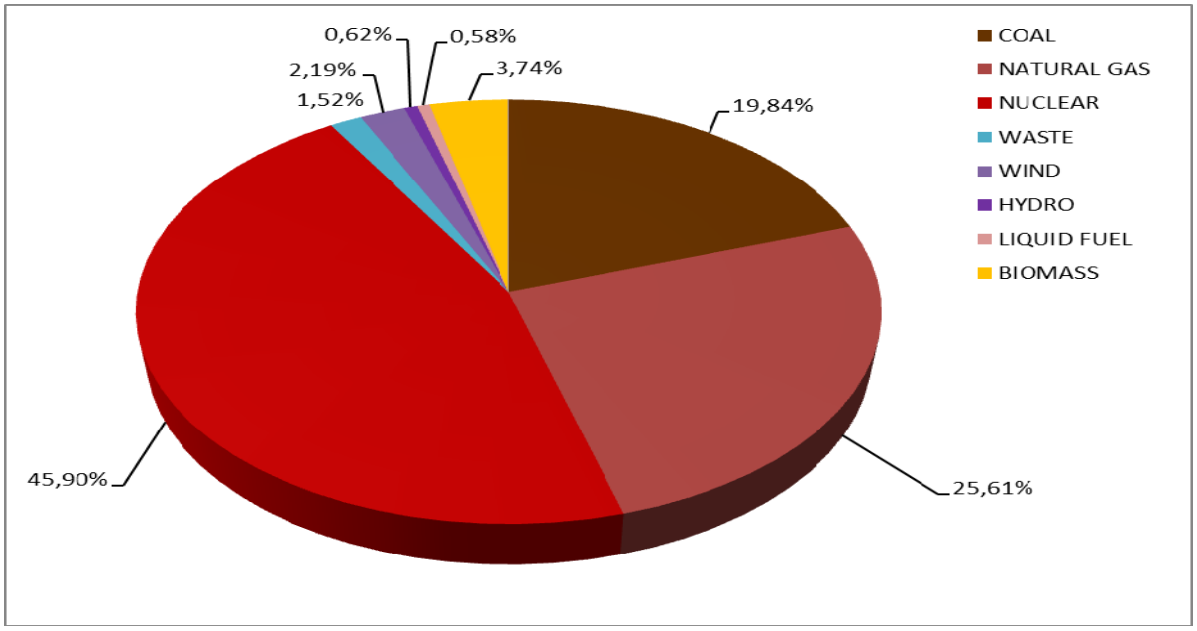
Share of energy sources in gross electricity production in Hungary, 2012 [7]



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[7] Statistical Data of the Hungarian Power System, MAVIR, 2013

Ireland

Alex McLean
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GENERAL

1. What is the nature and importance of renewable energy in your country?

Under the Renewable Energy Directive 2009/28/EC (the "RED"), the European Commission has set out its "20-20-20" goals, i.e., a 20% reduction in greenhouse gases by 20% by 2020; a 20% increase in EU energy efficiency by 2020; and for 20% of total energy consumption in the EU to come from renewable sources by 2020. The RED also imposes individual renewable energy consumption targets for each Member State based on a flat rate approach adjusted to each Member State's GDP. The EU has set a target of 16% of Ireland's gross final consumption of energy to come from renewable sources by 2020. In addition to specific targets in respect of transport (10%) and heat (12%), 40% of overall electricity consumption must be generated from renewable sources. Prior to the financial crisis, this was estimated to equate to about 5,800MW of installed renewable capacity. Revised demand forecast figures have seen this figure drop to 4,600MW according to EirGrid's Transmission Forecast Statement for 2010-2016.

Ireland has some of the most valuable renewable energy resources in Europe. The development and growth of the internal renewables sector will continue to be of the utmost importance for Ireland as a means of both satisfying its own 2020 obligations and of realizing sustainable alternatives to our dependency on fossil fuels and reducing our reliance on imported fuel sources.

Ireland faces a significant challenge to reach its 2020 targets of installed renewable capacity. There is currently 2,780 MW of renewable generation installed on the power system of Ireland and Northern Ireland. In order to reach Ireland's 2020 targets, it is estimated that the amount of installed wind generation will need to reach an installed capacity of between 4,800 MW and 5,300 MW by the end of 2020.[1]

The National Renewable Energy Action Plan ("NREAP") sets out the Government's strategic approach and concrete measures to achieve Ireland's 2020 targets. The NREAP estimates the total contribution expected from each renewable energy technology sector. By 2020, it is proposed that the following renewable energy technologies will hold the following energy share in electricity:

- Hydro: 34 MW;
- Tide, wave, Ocean: 75 MW;
- Biomass:153 MW;
- Wind (Onshore): 4,094 MW;
- Wind (Offshore): 555 MW.

The Government has introduced a number of measures to reduce the dependency on imported oil in the transport sector. In order to meet its target of 10% of vehicles to be powered by electricity in 2020, the Government has introduced tax incentives to encourage both private individuals and businesses to purchase electric vehicles. Although high costs and underdeveloped support systems have so far hindered the popularity of the electric car amongst

[1] "*All Island Renewable Connection Report 36 Month Forecast (Q3 2013)*" published by EirGrid and the System Operator for Northern Ireland ("SONI").

consumers, the existing scheme is encouraging and indicative of the Government's intention to grow this sector in the future. In addition, under the national Biofuel Obligation Scheme 2010, road transport fuel suppliers are obligated to use biofuel in their fuel mix to ensure that a certain percentage of transport fuel used in the State consists of biofuels. The Irish government withdrew Vehicle Registration Tax ("VRT") relief on biofuel car models in 2013. This approach is in line with the European Commission's proposal to scale back support for biofuels, for example by eliminating subsidies for food crop based biofuel production and imposing caps on biofuel shares of total transportation fuels[2]. VRT and other tax reliefs will however continue to be available in respect of electric and hybrid vehicles in Ireland.

Regulators and policy makers alike face the challenge of ensuring a smooth transition from the current market to a market fuelled by up to 40% renewable energy in less than six years' time. While renewable technologies continue to be promoted at a government policy level, key stakeholders are working to address practical implementation issues such as grid development and management of variability. A high penetration of intermittent renewable generation (largely wind) has placed a premium on flexibility and resilience in the balance of Ireland's generation portfolio. The Irish Transmission System Operator, EirGrid, is involved *in detailed* examination of the challenges posed by large scale intermittent power on the Irish grid, and is leading several facilitation studies to ensure the appropriate management of the grid and stability of the electricity system during this transition.

EirGrid has also launched a major initiative, called Grid25, to develop and upgrade the transmission infrastructure throughout Ireland. Approximately €3.2 billion will be invested in this project, which is expected to continue until 2019. EirGrid has already commenced a number of large-scale regional projects under this initiative, such as Grid West which alone has accounted for €240 million of investment to date. In 2012, EirGrid was responsible for the construction of 130km of new circuits, in addition to upgrading and refurbishing over 415km of existing circuits. EirGrid has carried out extensive public consultation over the past two years on its Grid25 projects. The consultation process is currently being reviewed and EirGrid has indicated that it expects to publish its findings and recommendations in June 2014.

Separately, EirGrid has invested an additional €500 million in the Grid Link project. The purpose of Grid Link is to develop the electricity infrastructure in the south and east of Ireland, including the construction of a 400kV overhead power line linking to the two regions. The completion of the Grid Link project will result in increased security of supply, as well as helping Ireland to meet its 2020 targets by integrating more renewable energy sources into the grid. Public consultation and studies are currently underway, and it is expected that EirGrid will obtain planning permission to commence works in 2015.

2012 saw the completion of the East-West Interconnector, a 500MW HVDC electricity link between the Irish and British grids. This was a major step forward for both markets, as it will help to improve security of supply as well as promoting competition in the electricity sector. Efforts continue to be made to marry an intra-day trading regime with the Single Electricity Market ("SEM") market design which is currently characterized by a lengthy gate closure and optimization time horizon.

[2] Ren21's Renewables Global Status Report 2013.

EirGrid's East West Interconnector was named 'Engineering Project of the Year' at the Irish Building and Design Awards 2014.

In addition to reducing Ireland's dependence on fossil fuels and securing energy supply, Ireland's renewable energy industry plays a central role in our economy by creating a demand for highly-skilled workers and providing a welcome boost to the construction sector.

2. What is the definition and coverage of renewable energy under the relevant legislation?

The principal legislation governing the electricity industry in the Republic of Ireland is the Electricity Regulation Act 1999, as amended (the "1999 Act"). The 1999 Act defines "renewable, sustainable or alternative forms of energy" as energy used in the production of electricity which uses as its primary source one or a combination of more than one of the following: wind, hydro, biomass, waste (including waste heat), biofuel, geothermal, fuel cells, tidal, solar and wave.

The definition of renewable energy was further expanded in the European Communities (Renewable Energy) Regulations 2011 (which transposed the RED into Irish law) to include energy from renewable non-fossil sources, namely aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The Minister for Communications, Energy and Natural Resources (the "Minister") has overall responsibility for the renewable energy sector. The Minister is advised by a range of other statutory bodies including the Commission for Energy Regulation (the "CER"), which was established under the 1999 as the national regulatory authority responsible for overseeing the liberalization of Ireland's energy sector and granting licenses for the generation, transmission, distribution and supply of electricity. The Minister is also assisted by Ireland's national energy authority, Sustainable Energy Authority Ireland ("SEAI") which promotes and provides grants for the development of sustainable energy structures, technologies and practices.

Government policy in the electricity sector is driven principally by the relevant European Directives. The European Communities (Internal Market in Electricity) Regulations 2000 (the "2000 Regulations") completed the transposition of Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity (Directive 96/92/EC). The European Communities (Internal Market in Electricity) Regulations 2005 (the "2005 Regulations") were promulgated to transpose the requirements of Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC (Directive 2003/54/EC).

The implications of the Third Energy Package and in particular of the RED concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC remain to be seen. The European Communities (Internal Market in Electricity) Regulations 2010 (S.I. 450 of 2010) were signed into effect on 17 September 2010 and mark the first step in full transposition of this Directive. Full transposition of the RED is still progressing in Ireland. The RED was transposed into Irish Law by the European Communities (Renewable Energy) Regulations 2011 on the 28 March 2011, supplemented by the Sustainable Energy Act 2002 (Section 8(2)) (Conferral of Additional Functions - renewable Energy) Order 2011.

The Irish electricity sector underwent fundamental reform with the establishment on 1 November 2007 of the SEM encompassing the Republic of Ireland and Northern Ireland. Key characteristics of the SEM include a gross mandatory pool with central commitment, a single system marginal price transmission-constraint payments and the introduction of capacity payments. The Energy (Miscellaneous Provisions) Act 2006 and the Electricity Regulation (Amendment) (Single Electricity Market) Act 2007 provide the legal basis for the SEM in Ireland, including establishment of a SEM Committee of the CER to regulate SEM matters in conjunction with an equivalent committee of the CER's counterpart in Northern Ireland. The Irish Government's framework for renewable energy fully mirrors the European Union's energy policy objectives which can be clearly identified in the 2007 Government White Paper, 'Delivering a Sustainable Energy Future for Ireland'. This proposes future development of the energy sector for 2007 to 2020 around the central pillars of increasing security, sustainability and competitiveness of energy supply. As noted above, Ireland's energy efficiency policy is reflected in the NREAP, which provides an overview of the various strategies and measures proposed by the Government to reach our 2020 targets.

The Government's Strategy for Renewable Energy 2012-2020 recognizes Ireland's wind and ocean resources as a potential for Ireland to become a renewable energy exporter within the next few years. This document outlines a number of key actions to be taken in order to facilitate the cooperation needed to achieve this objective. This strategy achieved one of its goals when the Memorandum of Understanding with the United Kingdom was signed on 24 January 2013. The next step in this process will be an intergovernmental agreement between Ireland and the United Kingdom, setting out a detailed framework to support the development of Ireland's renewable energy resources within the context of the cooperation mechanisms under the RED.

The implementation of the Energy (Biofuels Obligation and Miscellaneous Provisions) Act, 2010 further transposed the RED into Irish law and provides for further promotion of the use of biofuels in the transport sector in order to meet the 10% target.

The Energy Efficiency Directive (2012/27/EU) (the "EED") was partially transposed into Irish law under the European Union (Energy Efficiency Obligation Scheme) Regulations 2014 (SI No. 131 of 2014) (the "2014 Regulations"). Under the 2014 Regulations, the Minister is authorised to issue Energy Efficiency Notices to energy suppliers, setting out energy efficiency standards, timescales and targets to be achieved. The scheme enables the Minister to monitor performance and compliance with the EED by apportioning the obligations between the market players. The 2014 Regulations provide for the imposition of penalties for non-compliance.

The overall regulatory framework (supported by various action plans published by the Government) is indicative of Ireland's commitment to become a low carbon economy based on energy efficiency and renewable energy.

4. What are the principal regulatory bodies in the renewable energy sector?

Ireland has successfully fostered a strong culture of independent regulation through the appointment of an independent energy sector regulator. The CER is an independent body and is responsible for overseeing the liberalisation of Ireland's energy sector and granting licences for the generation, transmission, distribution and supply of electricity.

The CER is Ireland's designated National Regulatory Authority ("NRA") for the purposes of the New Electricity and Gas Directives and has responsibility for gas, electricity and water regulation. In light of European and Irish energy policy, the role and functions of the CER have been expanded over time and with various legislative amendments.

Its functions are extensive, and include:

- licensing and regulation of gas and electricity undertakings;
- regulating allowed revenues and tariffs for incumbents;
- overseeing market arrangements including, without limitation, approving changes to the electricity and gas industry Codes;
- promoting and regulating gas and electricity safety;
- cooperation with other NRAs and the European Commission;
- settling disputes;
- ensuring a high standard of protection for final customers in dealings with licensed suppliers; and
- monitoring.

The CER also has functions in relation to the development of an all-island energy market and the development and regulation of the SEM.

5. What are the main permits/licenses required for renewable energy projects?

The main permits and licenses required for renewable energy projects are listed below.

(a) Authorisation to Construct

Under Section 16 of the 1999 Act, projects require authorisation from the CER to construct or reconstruct a generating station, for the purpose of supply to final customers. Contravention of this section is an indictable offence. A project is also required to hold an authorisation to construct under the terms of their connection agreement.

The criteria to which the CER may have regard in determining an application for such an authorisation are prescribed under Section 18 of the 1999 Act (Criteria for Determination of Authorisations), Order 1999 (SI No. 309 of 1999) and include the safety and security of the electricity system, electric plant and domestic lines and the protection of the environment including the limitation of emissions to the atmosphere, water or land.

(b) Licence to Generate Electricity

The key administrative authorisation required to operate a generation facility is a license to generate electricity granted by the CER under Section 14(1A) of the 1999 Act.

Applicants are required to provide information as to their technical and financial competence to construct and operate the relevant facilities.

Under Regulation 4(1)(a) of the European Communities (Internal Market in Electricity) Regulations 2000 (S.I. No. 445 of 2000) as amended by Regulation 23(a) of the European Communities (Internal Market in Electricity) (Electricity Supply Board) Regulations 2008 (S.I. No. 280 of 2008), unauthorized generation of electricity is an offence and parties are liable on summary conviction to a fine not exceeding €5,000 or to imprisonment for a term not exceeding 12 months, or to both. Furthermore, by virtue of section 34(3) of the 1999 Act, the making by the ESB of a connection offer is subject to the offeree holding a license to generate.

(c) Transmission Use of System Agreement

A Transmission Use of System ("TUOS") Agreement with EirGrid is one of the conditions to accepting a connection offer. The TUOS Agreement is a standard form agreement which sets out the terms and conditions upon which EirGrid permits the User to use the ESB Transmission System. Under the TUOS Agreement, EirGrid agree to the User being provided with the use of the ESB Transmission System at the Network Connection Points. The User in turn agrees to pay the generation related Generation Transmission Service TUOS Charges under a specified tariff schedule. TUOS Tariffs are revised annually. The General Conditions of Connection and Transmission Use of System are incorporated into the TUOS Agreement.

(d) Planning Permission

Planning permission will need to be secured for every renewable energy project in addition to any other consents required. The Department of Communications Marine and Natural Resources has no direct function in regard to the planning aspects of renewable energy developments. The grant of planning permission for these projects is a matter for the relevant local authority.

An applicant will need to apply to the relevant planning authority for the area in which the proposed development is to be situated with details of the proposed project and provide an Environmental Impact Statement, if required. There are some planning exemptions and restrictions for small scale renewable technologies and CHP structures available.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

(a) Tax Relief for Renewable Energy Generation Investment

Section 486B of the Taxes Consolidation Act 1997 (the "1997 Act") provides tax relief for investments in renewable energy generation. The relief applies to corporate equity investments in certain renewable energy generation projects. The energy project must be in the solar, wind, hydro or biomass technology categories, and must be approved by the Minister. The relief is given in the form of a deduction from a company's profits for its direct investment in new ordinary shares in a qualifying renewable energy company.

(b) Revenue Business Expansion Scheme

The Employment Investment Incentive ("EII") is a tax relief incentive that allows investors to obtain income tax relief on investments made, in each tax year, into EII certified qualifying companies. The EEI scheme has replaced the previous Business Expansion Scheme ("BES"). Investments in renewable energy companies qualify for EII/BES relief. EII relief enables investors to deduct the cost of their qualifying investment from their total income for income tax purposes and is given at the claimant's marginal rate of income tax. Securing EII/BES status therefore enhances the ability of eligible companies to attract outside investment.

(c) Securitization of Carbon Credits

Carbon is steadily increasing in significance within structured and project finance in multiple forms, such as a revenue stream, cost item, asset class and a commodity capable of being traded financially or physically. The Irish Government has created a firm securitization regime under the governing legislation of the 1997 Act. Section 110 of the 1997 Act provides that the taxable profits of a company involved in the holding and/or management of "qualifying assets" should be computed on the same basis as a trading company. Thus, the cost of funding and other related expenditure is generally tax deductible, favoring minimal tax leakage and maximum return for investors. The Government extended the application of Section 110 under the Finance Act 2011, which opened up Ireland's securitization regime to new markets. The definition of "qualifying assets" for securitization purposes specifically includes carbon offsets.

(d) Research and Development ("R&D") Grants

R&D grants and capital grants are offered to support innovative domestic and commercial schemes using biofuels, CHP, large-scale wood heating systems and domestic renewable heat technologies.

Various funding programmes are offered through the SEAI. A fund is currently available to stimulate the development and deployment of Ocean Energy devices and systems.[3] The emphasis is on industry-led projects for the following types of activities:

- industry-led projects to develop and test wave and tidal energy capture devices and systems;
- independent monitoring of projects / technologies;
- industry-led R&D aimed at the integration of ocean energy into the electricity market and the national electricity grid (and network);
- data monitoring, forecasting, communications and control of OE systems; and
- specific industry-led research projects carried out by research centres, third level institutions and centres of excellence with a high level of expertise in the relevant area.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

There is no purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies. However, the 1999 Act requires the Transmission System Operator to give priority dispatch into the SEM's mandatory gross pool, subject to system security considerations. Therefore, priority dispatch, coupled with a gross pool market,

[3] *Available at* "http://mw.seai.ielGrants/oceanenergy",

gives rise to an effective purchase guarantee, subject to constraints and curtailment. Renewable energy companies and qualifying hybrid plants have mandatory priority dispatch under EU law.

The SEM is currently undergoing a market redesign process.

The purpose of the new arrangements (referred to as "I-SEM") is to bring the Irish market in line with the EU Target Model. The I-SEM arrangements are currently in the consultation phase. One of the key design challenges is the high proportion of priority dispatch plant that will be operating on the island of Ireland by 2020.

There are four market design options currently being considered. Two of the options propose mandatory participation of intermittent generation in the day-ahead market in order to limit the cost of balancing priority dispatch plant. It is expected that the new market arrangements will be in place by the end of 2016.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The Renewable Energy Feed In Tariff ("REFIT")

While there is no minimum price guarantee under Irish legislation for electricity generated by renewable energy companies, Ireland has implemented a number of supplier compensation regimes for additional costs of renewable energy purchased, which are known as Renewable Energy Feed In Tariffs or REFIT. REFIT allows suppliers to contract with generators outside the SEM pool and provide a price floor in power purchase agreements reflecting the level of compensation available to the suppliers. These REFIT supported power purchase agreements operate to insulate renewable generators from fluctuations in the wholesale market price.

The first REFIT programme ("REFIT I") was opened by way of competition in 2006 by the Department of Communications, Energy and Natural Resources ("DCENR") to support the construction of new electricity generation plant powered by biomass, hydropower or wind energy. The REFIT I scheme was open for applications until 31 December 2009, and was subject to a quantitative limit which has now been reached. Since that date no new applications have been accepted; although projects accepted into the scheme before that date, which were granted an extension of time to become operational, continue to be developed. The second REFIT programme[4] ("REFIT II") and third REFIT programme[5] ("REFIT III") are now open for applications. REFIT II provides support for electricity exported to the grid in the onshore wind, hydro and biomass landfill gas technology categories subject to a quantitative limit of 4000MW in total. The maximum size of an individual plant that may be accepted into REFIT II is 125MW. Plants above 125MW will require an individual state aid application to be submitted by DCENR to the European Commission.

REFIT III covers biomass technologies and is designed to incentivize the addition of 310MW of renewable electricity capacity. Of this, 150MW will be High Efficiency CHP (HE CHP), using both Anaerobic Digestion and the thermo-chemical conversion of solid biomass, while 160MW will be reserved for biomass combustion and biomass co-firing. REFIT III provides support for electricity exported to the grid subject to the following quantitative limits: Anerobic Digestion

[4] A Competition for Electricity Generation - from Onshore Wind, Hydro and Biomass Landfill Gas Technologies 2010-20 IS.

[5] A Competition for Electricity Generation from Biomass Technologies 2010-2015.

(including AD CHP) 50MW; Biomass CHP 100MW; Biomass Combustion (including co-firing with peat) 1603VTW. The maximum size of an individual plant that may be accepted into REFIT III is 50MW. An exception to this rule applies to peat co-firing stations which may co-fire peat and biomass up to 30% of the capacity of the plant (up to a maximum of 50MW) in any single year. Plants above 50MW will require an individual state aid application to be submitted by DCENR to the European Commission.

REFIT II projects must be built and operational by 31 December 2017. The support for any particular project cannot exceed 15 years and the support may not extend beyond 31 December 2032. In addition, applications to the REFIT II scheme will not be accepted after 31 December 2015.

In order to participate in the REFIT Schemes, renewable generators must first be accepted by the DCENR in accordance with the relevant REFIT terms and conditions. Successful generators who receive a "letter of offer" are subsequently required *to* enter into a power purchase agreement ("PPA") with a supplier licensed by the CER. With the benefit of a REFIT letter of offer (the generator is the addressee although details of the supplier are subsequently notified to the DCENR), the supplier counterparty to a REFIT PPA is entitled to be reimbursed its "additional costs" in performing its "public service obligation" (the "PSO") to purchase the output from the new electricity generation plant. This PSO is imposed on licensed suppliers by way of statutory instrument. Where the additional costs to suppliers of purchases under REFIT PPAs exceed market incomes in the SEM suppliers are entitled to compensation from funds collected from all consumers of electricity through the PSO levy together with a balancing payment to compensate the supplier for the costs associated with balancing renewable electricity. The balancing payment for REFIT I is 15% of the reference price for large scale wind (indexed). The balancing payment for REFIT II and REFIT III is €9.90 MWh (not indexed), payable only to the extent that the market price does not exceed the applicable reference price.

REFIT Reference Prices indexed to 2014:[6]

a. REFIT I

The reference prices for REFIT I are:

- Large Scale Wind category – 69.581 eurocents per MWh;
- Small Scale Wind category – 72.023 eurocents per MW;.
- Hydro – 87.892 eurocents per MWh;
- Biomass Landfill Gas – 85.451 eurocents per MWh;
- Other Biomass – 87.892 eurocents per MWh.

b. REFIT II

The reference prices for REFIT II are:

- Onshore Wind (above 5MW) 69.581 eurocents per MWh;
- Onshore Wind (equal to or less than 5MW) – 72.023 eurocents per MWh;
- Hydro (equal to or less than 5MW) – 87.892 eurocents per MWh;
- Biomass Landfill Gas – 85.451 eurocents per MWh.

[6] Figures taken from Department of Communications, Energy and Natural Resources website at: http: www.dcenr.gov.ie/Energy/Sustainable+and+Renewable+Energy+Division/REFIT.htm

c. REFIT III

The reference prices for REFIT III are:

- Biomass Combustion (non *CHP):*
  - *For using Energy Crops – 99.623 eurocents per MWh;*
  - *For all other biomass* – 89.136 eurocents per MWh;
- Biomass CHP units greater than 1500 kWh – 125.839 eurocents per MWh;
- Biomass CHP units less than or equal to 1500 kWh – 146.812 eurocents per MWh;
- AD CHP greater than 500 kWh – 136.326 eurocents per MWh;
- AD CHP unit less than or equal to 500 kWh – 157.299 eurocents per MWh;
- AD (non-CHP) units greater than 500 kWh - 104.866 eurocents per MWh;
- AD (non-CHP) units less than or equal to 500kWh - 115.353 eurocents per MWh.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Ireland became a signatory of the Kyoto Protocol on 29 April 1998. The Protocol was ratified by Ireland on 31 May 2002 and came into force in Ireland on 16 February 2005.

Ireland, as an EU Member State, is required under the European Union Emissions Trading Scheme (EU ETC) to limit or cap the amount of greenhouse gases emitted by certain installations covered by the scheme. The relevant regulator in Ireland is the Environmental Protection Agency. Each Member State is required to put in place a national allocation plan in order to allocate allowances for each installation, which can then be bought and sold. The objective is to create scarcity and reduce overall emissions.

Ireland has also developed its own voluntary carbon exchange platform. The Irish Carbon Trading Platform (Cosain) was established in 2009 and enables installations and brokers to trade allowances online. Cosain also facilitates the trading of carbon credits (permitting the holder to emit one tonne of carbon dioxide) in voluntary offset markets.

10. Do renewable energy based power plants have priority for connection to the grid?

Renewable energy power plants do not have priority connection to the grid, although priority connection for small scale generators below 5MW (see below) predominately benefit renewables (other than small scale wind).

Ireland has implemented a Third Party Access Regime under Sections 33, 34 and 34A of the 1999 Act. These Sections govern access to transmission and distribution systems and interconnectors as well as arrangements and agreements relating to the transmission system together with the Northern Ireland transmission system. Anyone may apply to EirGrid for connection to the transmission system and to ESB Networks Limited for connection to the distribution system. Offers are subject to the applicant becoming an eligible customer or obtaining a license or authorization.

The CER may issue directions to the Relevant System Operator specifying the terms of connection offers from time to time. The CER may give directions in relation to matters to be specified in a connection and/or use of system agreement; terms and conditions of a connection offer; respective proportions of costs to be borne by the Relevant System Operator and connecting parties; and time

periods within which an offer must be made or a refusal notified.

The only *circumstances* in which the Relevant System Operator can refuse to make a connection offer to an applicant are set out in Section 34(4) of the 1999 Act and include where the CER is satisfied that it is not in the public interest; where it would result in a breach of the 1999 Act, the regulations made under the 1999 Act, the grid code or any condition of any license or authorization; or where the applicant does not undertake to be bound by the terms of the grid code.

The holder of a license to transport electricity across and maintain an interconnector is required to offer interconnector access on the basis of published non-discriminatory terms which must be approved by the CER. The interconnector operator may refuse to enter into an agreement providing access where it can demonstrate to the CER that to do so would not be in the public interest or if doing so would involve the operator breaching the 1999 Act, regulations made under the Act and as the case may be, the grid code or distribution code or, its license or authorization. In practice, there has traditionally been a lack of capacity for parties seeking to connect to the transmission and distribution systems. The CER enjoys powers under Section 34(1) of the 1999 Act to issue directions relating to the terms for connections to the transmission and distribution system. Pursuant to those powers, the CER imposed until mid-2004 a moratorium on new wind farms. Since then, the CER has been implementing a group processing approach for the issue of connection offers by the Relevant System Operators under successive "Gates", but there remains a considerable backlog and delays. The issuance of offers for the Gate III process commenced in December 2009 and the issue of offers from the system operators continued until June 2011. All offers have now been issued under this Gate process.

In December 2011, the SEMC published a final decision in relation to treatment of curtailment in the SEM where the instantaneous penetration of wind exceeds 50% of system demand. However, following a number of industry submissions, the decision was partially withdrawn by the SEMC in March 2012. The decision outlined the preferred option for allocating curtailment in tie-break situations on a firm access quantity basis, i.e., giving preference to plant which had already obtained a firm access quantity (a grandfathering approach). This would mean existing plant would have different rights to new plant. On 1 March 2013, the SEMC published its final decision, which provided that all wind generators should make a contribution on a pro-rata basis to address the fact that curtailment is a system-wide problem. This decision was largely welcomed by the industry as a fair alternative which provided much needed certainty to the market.

In 2009, the CER published a Decision Paper[7]which details how small, renewable and low carbon generators that fulfil public interest criteria would be processed outside the Group Processing Approach (GPA). The public interest criteria include diversity of fuel mix, predictability and power system support, environmental benefits and research or innovation. The CER decision paper also sets out a list of pre-approved classes of technology for processing outside the GPA which include:

- Bioenergy;
- CHP;
- Autoproducers;
- Hydro;
- Ocean;
- Wave;
- Solar;

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- Geothermal;
- Experimental/Emerging Technologies.

Renewable generators (<500kW) were previously all subject to the GPA, which is effectively a queue system. The new approach differentiates between wind and non-wind renewable generators. Applications by non-wind renewable generators with a Maximum Export Capacity (MEC) less than or equal to 5 MW will be processed outside of the queue and interaction studies will not be carried out. Only auto production wind sites, where the generator (up to 5MW) is installed on an industrial site to predominantly supply in-house demand, will be included in this new arrangement. Wind sites with a direct connection to the grid will not be included and will be subject to the full GPA. Non-wind renewable generator applicants with an MEC greater than 5 MW will also be processed outside of the GPA but interaction studies will be performed. If no interactions exist then they can proceed to be given a connection offer. If interactions do exist, then the CER will consider these on a case-by-case basis.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

There are no incentives for domestic manufacturing of equipment or materials used in the construction of renewable energy based power plants.

12. What are the other incentives available to renewable energy generation companies?

There are various incentives available to renewable energy generation companies. The tax and financial schemes have previously been discussed under section 6.

In addition, the Irish government has also introduced a number of measures to encourage investment in renewable energy including:

- changes to planning legislation with the potential to significantly expedite the planning process for wind farms with more than 50 turbines or an output greater than 100MW and publication of revised '*Wind Energy Development Guidelines for Planning Authorities*'; and

- the introduction of a biofuels obligation scheme, corporate investment in certain renewable energy projects and registration of hybrid electrical vehicles and flexible fuel vehicles.

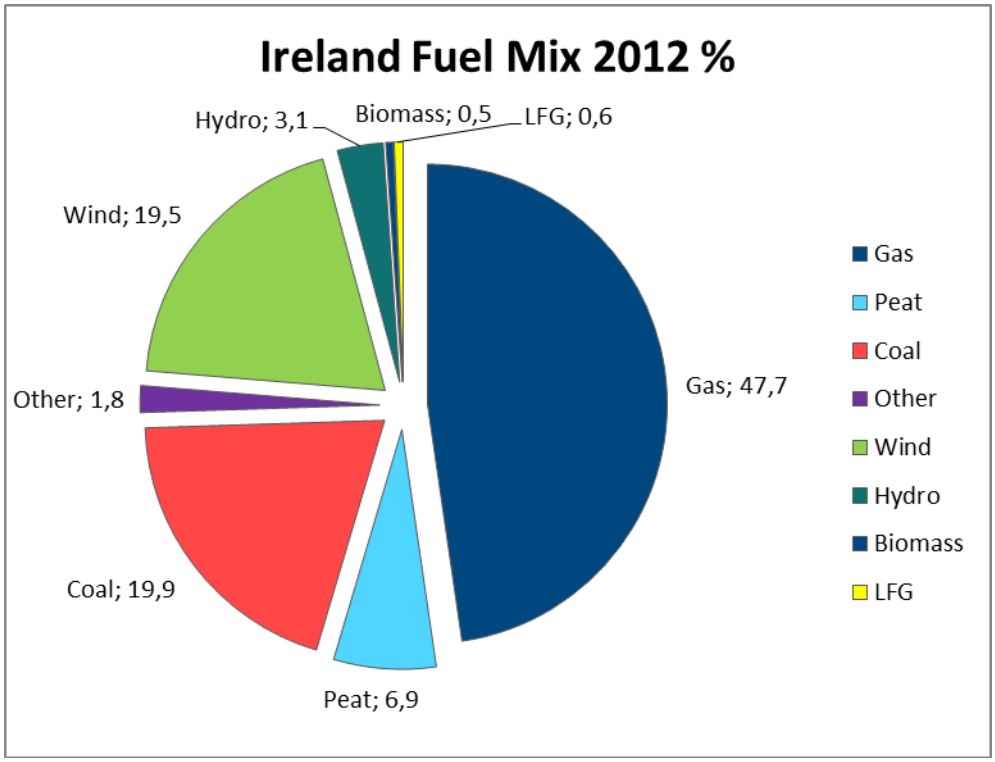
STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

In 2012, renewable energy sources contributed 19.6% of Ireland's electricity needs, with 15.3% of this figure arising from wind, 2.7% from hydro and 1.6% from other bioenergy sources, mainly biomass co-firing and landfill gas.[8] The significant increase in electricity produced from wind (an increase from 10% of total generation in 2010) has allowed Ireland to reduce its dependency on imported fossil fuels. See Figure 1 for a breakdown of the fuel mix in Ireland in 2012.

[8] SEAI report from February 2014 - Renewable Energy in Ireland 2012

Figure 1: Ireland Fuel Mix 2012[1]



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[1] CER/13/148

Italy

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CLIFFORD CHANCE

GENERAL

1. What is the nature and importance of renewable energy in your country?

1.1. A country full of renewable sources

Italy's energy industry – the importance of which is constantly and rapidly increasing – is essential for satisfying Italian residential and business energy needs. However, Italy and its economy have always been and still are disadvantaged by the fact that Italy is an importer of energy sources, especially of fossil fuels (i.e., oil and natural gas).

Italy's strong dependence on the import of raw materials such as oil and natural gas from non-EU countries, as well as of further amounts of already-produced electricity from nearby EU-countries, the decision to stop nuclear power and Italy's availability of large potential of renewable resources[1], have led to use of renewable energy sources to constantly gain increasing strategic and economic importance. Consistently, the Italian government has passed, over several years, a series of laws and regulations (the majority of which, in order to implement EU directives), by means of which strong mechanisms of incentives for the use of renewable energy sources have been offered to investors.

More specifically, during the past decade, the Italian government has been implementing a series of laws and regulation which may be divided into two main areas: one regarding the photovoltaic sector (i.e., feed-in tariffs – so called "*Conto Energia*"), and the other regarding the other renewable sources, including on- and off-shore wind-farms, biomass, biogas and wind power plants (i.e., Green certificates – so called Renewable Energy Certificates (RECs)).

1.2. Market trends

During the past years, such regulatory framework has created a dynamic market, attractive for both domestic and foreign capital, especially with respect to photovoltaic, wind and biomass energy sources. However, the economic crisis of recent years has led the Italian government to adopt quite severe spending review programs, pursuant to which specific measures aimed at reducing the impact of the incentives on Italy's public accounts have also been introduced. Indeed, in 2012 the reforms introduced to the applicable laws and regulations generally reduced the amount of incentives made available to renewable energy operators, while rendering more complicated the administrative procedures to be admitted to receive the incentive tariffs, thus limiting the number of plants admitted to the new incentive systems and decreasing the profitability of the new investments made.

Since July 2013, the incentive system has no longer been available in Italy for photovoltaic plants that had yet to start operations and had not yet applied for the *Fifth Conto Energia* (which is the latest incentive scheme introduced with respect to the photovoltaic sector – see Paragraph 12.1).Further, only

[1] Italy has a vast expanse of coast, both in the mainland and on the islands (total of 7,468 Km) for the potential installation and exploitation of wind power plants, a wealth of water and stretches of steep slopes for hydroelectric exploitation, a sunny Mediterranean climate in the south for the exploitation of solar energy and extensive lands which may be irrigated and mechanized for production of biomass.

those plants that, as of 6 July 2013, that were already receiving incentives under either the *Fifth Conto Energia* or the previous incentive schemes continued and will continue to receive them through their respective eligibility periods.

Additionally, a further reform introduced at the beginning of 2014 provides energy producers from renewable sources which benefit from green certificates, all inclusive tariffs (*tariffe onnicomprensive*) or premium tariffs with the option to defer receipt of the overall incentives over a period of time by seven years longer than the standard, thus receiving an annual incentive lower than the one originally set forth. Alternatively, such producers would incur in negative consequences (i.e., losing the right to enjoy other incentive mechanisms for a ten-year period upon expiry of the feed-in tariffs originally granted to their renewable energy plants) (see Paragraph 12.3).

Despite this continuously evolving, complex legal framework which is causing uncertainty in the market, opportunities for investors still exist, mainly because the plants that are already operating, and that receive incentives, are good prospects for acquisition by new operators that wish to access the market or by existing operators who wish to consolidate their market position.

Therefore, in the years to come, we will witness the growth of a florid secondary market, which will lead to a concentration of plants in the hands of a few qualified operators.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Renewable energy sources ("RES") are defined by the relevant applicable law[2] as "*the renewable non-fossil energy sources (including wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases sources)*".

Furthermore, the electricity produced from RES is defined by the relevant applicable law[3] as "*the electricity produced by plants that are powered exclusively by RES, the portion of electricity produced from RES in hybrid plants that also use conventional energy sources, as well as the renewable electricity used for filling storage systems, but excluding electricity produced as a result of storage systems*".

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The renewable energy sector is mainly regulated at the national level by general provisions which implement EU directives. At the local level, the renewable energy sector is regulated by Regional provisions, which have to comply with the national laws.

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2 In Italy, the definition of renewable energy is set forth in Article 2, paragraph 1(a), of Legislative Decree 29 December 2003, No. 387 ("LD 387/2003"). LD 387/2003 implemented in Italy Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from RES in the internal electricity market, and currently reflects the same definition of renewable energy given therein. Notwithstanding the repeal of Directive 2001/77/EC by Directive 2009/28/EC, the definition of renewable energy given in LD 387/2003 is still valid and complies with Directive 2009/28/EC.

3 LD 387/2003, Article 2, paragraph 1(f).

Some of the principal laws and regulations currently in force in Italy at the national level are listed below:

- Legislative Decree No. 79 of 16 March 1999 ("LD 79/1999") implementing EU Electricity Directive No. 92 of 19 December 1996, which was the first main step towards the liberalization of the electricity market;
- LD 387/2003, implementing Directive 2001/77 on the promotion of electricity produced from RES in the internal electricity market;
- Law No. 239 of 23 August 2004, which outlined a radical reform of electricity regulation in Italy, transforming the sector from a public monopoly to a free competition regime;
- Ministerial Decree No. 25336 of February 2007 ("MD 25336"), approving the criteria and procedures for supporting production of electricity by photovoltaic conversion of the solar source;
- Ministerial Decree dated 21 December 2007, introducing the system of Green Certificates;
- Law No. 244 of 24 December 2007 ("Budget Law 2008"), which created several tax advantages and introduced changes in the regime of the incentives granted for production of electricity from RES;
- Ministerial Decree of 11 April 2008 ("MD 11/04/2008"), approving the criteria and procedures for supporting production of electricity from the sun through thermodynamic cycles;
- Ministerial Decree dated 18 December 2008 ("MD 18/12/2008"), approving the criteria and procedures for supporting electricity generation from RES;
- Legislative Decree No. 28 of 3 March 2011 ("LD 28/2011"), implementing EU Directive 2009/28, which aims to achieve the objectives set out for 2020 on the overall share of renewable sources for each EU state;
- Law No. 27 of 24 March 2012 ("LD 27/2012"), which modifies Legislative Decree No. 1 of 24 January 2012 ("LD 1/2012") and aims to facilitate access to the renewable energies market;
- Ministerial Decree 5 July 2012 (the "Fifth Conto Energia"), implementing Legislative Decree No. 28 of 3 March 2011 and relating to photovoltaic plants;
- Ministerial Decree 6 July 2012 (the "RES Decree"), implementing Legislative Decree No. 28 of 3 March 2011, and relating to the new incentive system for on-shore and off-shore wind farms, biomass, biogas plants and all renewable energy sources other than photovoltaic;
- Law No. 9 of 21 February 2014, converting into law Law Decree No. 145 of 23 December 2013 (the so called "*Decreto Destinazione Italia*", hereinafter, the "Destinazione Italia Decree"), relating to the minimum guaranteed prices and voluntary extension of incentives for renewable energy sources;
- AEEG Resolution No. 280 of 6 November 2007, as subsequently amended, governing the procedures and economic terms and conditions for the purchase of electricity;

- AEEG Resolution No. 74 of 3 June 2008 ("TISP"), governing the procedure and the technical and economic terms and conditions for net metering;

- AEEG Resolution No. 99 of 23 July 2008, governing the procedure for the interconnection of power plants to the power grid; and

- AEEG Resolution No. 123 of 16 September 2008, governing the disputes among the project owners and the grid operators.

Furthermore, energy regulations have also been affected by amendments to the Italian Constitution. Among others, Constitutional Law No. 3/2001 amended Article 117 of the Italian Constitution and brought regulation of the production, transportation and distribution of national energy within the legislative control of the Regions, subject to the fundamental principles set out in the national energy legislative framework.

At the regional level, each Region in Italy is entitled to enact regional laws and regulations governing, inter alia (i) the authorization procedure for the construction; and operation of plants fuelled by RES and (ii) the authorization procedure for the construction of the electrical lines to connect such plants to the power grid. The provisions enacted by the Regions, however, must comply with the general principles set forth by the national legislation.

4. What are the principal regulatory bodies in the renewable energy sector?

The principal regulatory bodies in the renewable energy sector are (i) the Italian Ministry for the Economic Development, (ii) the Italian energy regulator (*Autorità per l'Energia e per il Gas* – the "AEEG"), (iii) the Gestore Servizi Energetici S.p.A. (the state-run entity in charge of the implementation of incentive systems to promote the use of RES – the "GSE"), and (iv) the Gestore dei Mercati Energetici S.p.A. (the "GME").

- The Italian Ministry for Economic Development is responsible for a wide variety of policies, including economic development and cohesion, as well as incentives for sectors such as energy and mineral resources, telecommunications, internationalization and business. The Italian Ministry for Economic Development has recently drafted and passed two Ministerial Decrees (the Fifth Conto Energia and the RES Decree) relating to the new incentive systems granted to operators of photovoltaic plants and plants fueled by renewable energy sources (other than photovoltaic), respectively.

- The AEEG is an independent body that regulates, controls and monitors the electricity and gas sectors and markets in Italy. The AEEG's role and purpose is to protect the interests of users and consumers, to promote competition and to ensure efficient, cost-effective and profitable nationwide services with satisfactory quality levels. To this end, the AEEG defines and maintains a reliable and transparent tariff system, promotes environmental protection and the efficient use of resources and sets forth observations and recommendations to the Government and to the Parliament on matters of energy.

- The GSE is a publicly-owned company promoting and supporting the use of RES in Italy. The GSE fosters sustainable development by providing economic support to renewable electricity generation ("RES-E") and by taking actions to raise awareness of environmentally-efficient energy use. The GSE manages support schemes for RES at the central level; in the

past few years, the GSE has been conferred technical responsibilities also for the assessment of the architectural integration of solar photovoltaic (PV) plants into buildings and in relation to energy efficiency.

The GME is a company established by the "Gestore della Rete di Trasmissione Nazionale S.p.A." (that now is the GSE) with the mission of organizing and economically managing the Italian Electricity Market. As part of the organization and economic management of the Electricity Market, the GME is also vested with organizing the trading of, and the market for, Green Certificates (i.e., certificates giving evidence of electricity generation from RES), the RECs (as defined below), Energy Efficiency Certificates (the so-called "White Certificates", giving evidence of the implementation of energy-saving policies) and Emissions Allowances or Units.

5. What are the main permits/licenses required for renewable energy projects?

There are two main sets of permits and licenses that are required under Italian laws and regulations in order to construct and operate renewable energy projects. One set of permits regards the construction and operation of the plant itself, whereas the other set of permits is related to the construction of the interconnection facilities of the plant to the national and the local transmission grids, which are needed in order to sell the electricity produced by the plant.

5.1. The main permits/licenses required for the construction and operation of renewable energy plants

a) The environmental impact assessment

The first authorization procedure that a project developer needs to undergo in order to commence the construction of a renewable energy plant is an environmental impact assessment (*valutazione di impatto ambientale*, "VIA"), which is an environmental assessment carried out by the appropriate authority (generally the Province, Region or the Ministry of the Environment) to evaluate the foreseeable impact of a project on the surrounding environment.

However, certain categories of projects benefit from a two-step assessment procedure, which includes a pre-screening assessment (*verifica di assoggettabilità*), the outcome of which is used to determine whether a VIA will be necessary.

The pre-screening assessment is a preliminary, streamlined assessment of the impact that a project may have on the environment; when the pre-screening assessment has a negative outcome, the project is required to undergo a VIA procedure, which is a further and more detailed assessment.

The national legislation exempts certain projects from the construction and operation of plants for the generation of electricity from the requirement to undergo pre-screening. These exempted plants include plants that produce electric power from renewable sources of energy with a maximum installed capacity not higher than a specific threshold, which has changed over the years.

Construction projects to be realized within certain areas of high value in terms of landscape and environmental value because of the presence of specific flora or fauna must undergo an additional assessment (called the "environmental incidence assessment") (*valutazione di incidenza ambientale*).

b) The Single Authorization

Since 2004, an authorization named "single authorization" (*autorizzazione unica*) ("the AU") is required to construct, to operate, and to perform ancillary works in connection to any

renewable energy plant. Renewable energy plants with an installed capacity below certain levels, however, are exempt from the single authorization requirement and benefit from a simplified "deemed consent" authorization procedure (see subparagraph c) below).

Applications for AUs must be submitted to the Region, or to the Province, where the plant is to be located (in accordance with regional law), which is required to call a conference of authorities called "*Conferenza di Servizi*" ("Conference of Authorities"). All the public entities interested in the project, such as the Province, the Municipality, the competent grid operator and any other public authority responsible for specific matters within the territory (e.g., landscape, seismic, or hydro-geological matters) must be asked to participate in the Conference of Authorities and to render their respective opinions on whether the project may be authorized.

The Conference of Authorities must be called within 30 days (non-mandatory term) from the date an application for the AU is received and the authorities are mandated to complete their evaluation of an application for a single authorization within a maximum term of 90 days (if no VIA is required), or 90 days plus 150 days for the VIA (if a VIA is required).

Certain minor variations from the project are permissible without requests for further single authorizations, although variations that are deemed material must be approved, following a request from the holder of the single authorization.

c) Simplified authorisation procedures

Projects for the construction of renewable energy plants with a capacity of up to certain thresholds (e.g., 20 kW for photovoltaic plants and 60 kW for wind plants) have the benefit of a simplified authorization procedure (thus, not needing to undergo the AU procedure).

To benefit from this procedure, project owners are required to file a so-called *Denuncia di Inizio Attività* ("DIA") with the Municipality where the project is to be developed. If the Municipality does not object to the DIA within 30 days from the date the DIA is filed in complete form (i.e., with all required accompanying documents), the relevant project is deemed to have been authorized.

In addition, if the project is to be developed within an area that is subject to specific restrictions (e.g., landscape or environmental restrictions) monitored by authorities other than the Municipality (e.g., the Region, the Province or a State entity), then the DIA submission will be suspended until these additional authorities have issued a favourable opinion in relation to the project.

The DIA is valid for three years; if the construction works described in the DIA are not completed within three years, a new DIA must be filed for the remaning part of the works.

Subsequent to the introduction of the DIA, further legislative provisions have been enacted to simplify the authorization procedures for certain categories of renewable energy plants. These provisions include Article 11, paragraph 3, of Legislative Decree No. 115 of 30 May 2008, which states that construction works to increase the energy efficiency of buildings consisting in the installation of photovoltaic plants integrated into the roof, having the same slope and surface of the roof and whose components do not affect the shape of the buildings are considered extraordinary maintenance works and are exempt from the DIA requirement. These works can be carried out subject to prior notification to be sent to the Municipality.

Additional provisions to simplify the authorization procedures for renewable energy plants have been introduced by the Ministry of

Economic Development Guidelines, pursuant to which renewable energy plants that can start construction subject only to the DIA procedure or to mere notification of commencement of the works, are subject to a simplified authorization procedure denominated simplified allowing procedure (*Procedura Abilitativa Semplificata*), which is in any case substantially equivalent to the DIA procedure.

5.2. The main permits/licenses required for the construction and operation of the interconnection facilities of renewable energy plants to the power grids

Under Italian law, the energy produced by renewable energy plants has interconnection and dispatch priority. Moreover, the operator of the national transmission grid (i.e., Terna S.p.A.; hereinafter "Terna") and the operators of the local distribution grids (e.g., Enel Distribuzione S.p.A.; "Enel") have the obligation to interconnect to the local grids they operate every plant that so requests.

The AEEG (the Italian Authority for Energy and Gas) has the responsibility to enact guidelines setting out the technical and economic terms at which grid operators must provide the interconnection. As of the date hereof, interconnections are governed by Resolution No. ARG/elt 99/08, as amended (the "TICA").

The TICA

Under the TICA, the request to be interconnected to the power grid must be filed with either (i) the operator of the local distribution grid (e.g., Enel), if the injection power requested is below 10,000 kW, or (ii) Terna, if the injection power requested is equal to or more than 10,000 kW.

The procedure to connect energy plants to the power grid with BT/MT voltage pursuant to the TICA can be divided into the following main steps:

i. Application and issuance of the estimate for the interconnection

The requests for interconnection must be drafted in compliance with a standard form that Terna and the distribution grid operators are required to prepare and make available to the operators. Upon receipt of an application, the competent grid operator must submit to the applicant an estimate for the interconnection, which must include a description of the work that must be carried out to grant the interconnection, the related costs and time for the completion of the work.

ii. Acceptance of the estimate for the interconnection

The estimate for the interconnection is valid for 45 business days. Within this term, the applicant must send written acceptance of the estimate to the grid operator or the estimate becomes invalid. This written acceptance must include evidence of payment of at least 30% of the aggregate interconnection costs set out by the grid operator in the estimate.

iii. Authorisation for the construction of the electrical lines

Once the estimate for the interconnection has been accepted, either the grid operator or the plant operator (at the plant operator's choice) must request the necessary authorisation to carry out the interconnection works set out in the estimate for the interconnection.

iv. Realisation of the connection works

The construction works regarding the interconnection facilities may be carried out either by the plant operator itself or by the grid operator, at the plant operator's choice.

If the plant operator wants to carry out the connection works itself, it is required to specify this in the acceptance of the estimate for the interconnection. In this case, the plant operator is not required to pay the costs for the interconnection to the grid operator.

Following the issuance of the authorisation, the plant operator is required to send to the grid operator the executive projects of the interconnection facilities to obtain its favourable opinion. The plant operator is required to notify the grid operator of the completion of the interconnection works in order to allow the grid operator to test the interconnection facilities (at the plant operator's costs) and accept them.

The interconnection facilities must then, in any case, be transferred to the grid operator free of charge.

If the plant operator does not specify in the acceptance of the estimate for the interconnection its willingness to carry out the connection works itself, these will automatically be carried out by the grid operator.

The term for the completion of the construction works by the grid operator are specified in the estimate for the interconnection.

In case of delays past the applicable term, the grid operator is required to pay to the plant operator an indemnity, to be determined in accordance with the TICA.

Upon completion of the connection works, the grid operator is required to send to the operator a communication specifying the availability to activate the connection.

During the construction of the power plant to be connected, the plant operator is required to send to the grid operator a quarterly communication including the forecast timetable for the completion of the construction works. Once construction of the power plant to be connected to the power grid is completed, the plant operator is required to inform the grid operator by sending a notice of completion.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Italy's mechanisms of incentives for the utilization of RES are not primarily based on the granting of tax advantages to the operators. Instead (as described in Paragraphs 10 and 12 below), the incentive systems created throughout the years by the Italian government are essentially based on the granting of feed-in tariffs (*Conto Energia*) for a predetermined period of time to operators of photovoltaic plants, and on the assignation of Green Certificates (also called Renewable Energy Certificates ("RECs")) in proportion to, *inter alia*, the renewable electricity generated, to operators of renewable energy plants (other than photovoltaic plants)[4].

Despite the above, the Italian regulatory framework still provides for some tax advantages with respect to investments relating to RES. In particular, it provides that:

a) transactions taxes and the tax regime to be applied to the sale/purchase of the land on which to install a plant fuelled by RES depend on a number of factors, the most important one being the classification of the land at the time of the sale. In case the land is classified for agricultural use, no value added tax ("VAT") shall apply

[4] The RECs system will however been abolished starting from 1 January 2016, and a transitional period (going from 2012 to 2015) has been set out in the RES Decree (see Paragraph 12.2(b)).

to the transfer, but the sale would be subject to registration tax at the rate of 12% (15% for sales executed until 31 December 2013), plus mortgage and cadastral taxes at the aggregate rate of 3%. However, in the case of a transfer of non-agricultural land, if the seller is deemed to be a VAT person, the transaction is subject to value added tax at the ordinary rate (currently, 22%), plus mortgage and cadastral taxes at the aggregate rate of 3%, no registration tax should apply;

b) VAT on the purchase and construction of plants fuelled by RES is generally applied at a reduced 10% rate (rather than at the ordinary 22% rate), plus mortgage and cadastral taxes at the aggregate rate of 4%, while VAT on the purchase of RECs is applied at the ordinary 22% rate; and

c) The VAT regime applicable on the special public tariffs granted by the GSE depends on the types of such subsidies/tariffs. The "premium" tariff granted in relation to the amount of self-consumed energy is not subject to VAT. The "all-inclusive" tariff and the tariff granted to plants with a capacity of more than 1 MW (such tariff being equal to the difference between the all-inclusive tariff and the "hourly zone rate") are subject to VAT at the reduced 10% rate. Please refer to Paragraph 12 below for a detailed description of the incentives and tariffs available to renewable energy generation companies.

Furthermore, the tariffs described in point c) above are subject to the Italian corporate income tax (currently, at 27.5% rate) and to the Italian regional tax on business activities at 3.9% ordinary rate (decreased to 3.5% ordinary rate from the fiscal year starting after 31 December 2013, pursuant to Law Decree no. 66 of 24 April 2014), each Region can vary the latter rate by an additional percentage up to 0.92%. Moreover, the "premium" tariff is also subject to a 4% advance withholding tax.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The electricity produced from RES may be sold either on the market through privately negotiated transactions or on the electric power exchange[5].

However, the Italian laws and regulations regarding the RES sector provide for the following mechanisms, which guarantee the purchase of the electricity produced without the need for the operators of the plants to offer the energy on the market:

a) *Mandatory purchase regime (*"ritiro dedicato*")*

Italian legislation grants to producers of electricity (i) from intermittent renewable sources of energy (including, therefore, electricity from solar and wind plants); or (ii) from other sources (in this case for up to a nominal power of 10 MW), the option to sell the electricity produced under the mandatory purchase regime (*ritiro dedicato*)[6], rather than on the market. Under the mandatory purchase regime, the GSE must withdraw and purchase all the energy produced by a plant, net of any energy used for in-plant consumption, in accordance with the terms and conditions that are set forth by an agreement which is entered into by and between the GSE and the

5 Sales through privately negotiated agreements are governed by contracts between the sellers and the purchasers. Sales on the electric power exchange are subject to the rules and regulations of the electric power exchange and accessible only to those parties that have been certified as operators on the exchange. Operators on the exchange are required to pay fees to the GME.

6 The mandatory purchase regime has been governed by AEEG Resolution No. 280/2007 since 1 January 2008. Such mechanism can only be activated upon request of the producer, by way of request to participate in the mandatory purchase regime to be filed with the GSE.

producer[7]. Recent amendments to the applicable legislation authorise the GSE to transfer part of the costs deriving from the management of the mandatory purchase regime to producers trying to incentivise a greater attention by the producer of forcasted injection. In particular, GSE will charge the producers: (i) the imbalancing costs, which will be calculated on the basis of a specific formula; and (ii) certain additional administrative costs, which cannot exceed certain specific thresholds as set out below:

Capacity	Thresholds / Euro
0<P<=200	300
200<P<=1000	1,500
1000<P<=10000	6,000
P>10000	7,000

In exchange for the electricity withdrawn, the GSE then pays to the producer, on a monthly basis, the "hourly zone price", which derives from the prices registered in open trading on the electricity exchange.

b) *Net metering service ("*scambio sul posto*")*

Under the net metering service (*scambio sul posto*), producers/users at small power plants (up to 200 KW) may feed into the grid all the electricity generated and not immediately consumed and take-in electricity as needed at a different time.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The guarantee of the payment of a minimum price was a peculiarity of the mandatory purchase regime (*ritiro dedicato*), and it was reserved to renewable energy plants with a capacity of up to 1 MW and limited to the first 2 GWh of electricity produced per year.

However, the Destinazione Italia Decree in substance removed the minimum guaranteed prices under the mandatory purchase regime (*ritiro dedicato*), providing that, starting from 1 January 2014, the minimum guaranteed prices for renewable energy plants that benefit from other incentives mechanisms (the cost of which is charged as part of electricity costs) will be equal to the hourly zone price – that is, these plant operators will receive from the GSE the same price which they would have earned in case of sale of energy on the electric power exchange.

The only renewable energy plants which will still benefit from a minimum guaranteed prices are photovoltaic plants with capacity up to 100 kW and hydroelectric plants with capacity up to 500 kW (which two types of plants will continue to benefit from the minimum guaranteed prices, as recently reduced by the Italian Authority for Electricity and Gas on 19 December 2013).

These minimum guaranteed prices are updated on annual basis by the AEEG in accordance with the ISTAT index.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Italy has ratified the Kyoto Protocol with Law No. 120 of 2002 and the system came into force on 16 February 2005, when the

[7] Such agreement is executed in compliance with a standard form, has a term of one calendar year, and can be tacitly renewed. The producer, however, can withdraw from the agreement at any time, by giving 60 days' written notice to the GSE via registered mail.

European Union introduced the "EU Emission Trading System" (the so called "EU ETS"), which is based on a "cap and trade" mechanism

In particular, such system has been implemented in Italy in accordance with Directive 2003/87/CE, with Legislative Decree No. 216 of 2006 and with Legislative Decree No. 30 of 2013. Both these Decrees have been issued in order to improve those measures firstly identified and set forth in Law No. 120 of 2002.

Under the system which is currently in force, the Italian government – under European Commission supervision – must set a limit of the emission levels allowed for every company emitting carbon dioxide, granting to each of such companies an equivalent number of carbon credits for free.

Should these companies emit carbon dioxide in a measure which is lower than the level which they would be entitled to emit under the EU ETS system and in relation to which they have been granted a certain number of carbon credits, then these companies may sell to other companies a number of carbon credits equivalent to those which have not been used.

Conversely, those companies which emit carbon dioxide in a measure which is higher than the level which they would be entitled to emit under the EU ETS system need to purchase additional carbon credits (on top of those which had already been granted to them by the government) from companies which have extra carbon credits available, up to the amount needed to cover the extra carbon dioxide emitted.

In this way, a mechanism of supply and demand of carbon is created and companies are encouraged to invest in machineries and production procedures which would lead to lower carbon dioxide emissions.

The European Union is now taking into consideration the amendments made by the Doha convention establishing the new regime for the carbon credits' market and, in the near future, Italy may need to further amend its internal legislation regarding carbon emissions in order to comply with the European decisions and implement the relevant decrees.

10. Do renewable energy based power plants have priority for connection to the grid?

Renewable energy plants have interconnection priority and must be connected to the grid without delay.

a) *Interconnection priority*

Under Legislative Decree No. 79 of 16 March 1999 ("LD 79/1999"), the energy produced by renewable energy plants has dispatch priority over plants fuelled by non-renewable energy sources. This means that the transmission grid operator must give priority to plants fuelled by RES to inject the generated energy into the network, in the event that the national energy system becomes congested.

Notwithstanding the above, the dispatching priority must be balanced against the necessity to ensure the safety of the electric system and, therefore, also the production of electricity produced by RES may be subject to restrictions/interruptions.

b) *Delays of interconnection to the grid*

The grid operator has the duty to allow interconnection within specific terms. In case of delays, the RES producers may reserve the right to start legal proceedings against the grid operator, filing a claim with the AEEG according to AEEG Resolution No. 123/08. If the claim is approved, the grid operator will have to pay to the company (i) an amount of money as reimbursement of all expenses related to the interconnection procedure; and

(ii) an amount of money as compensation for the delay in the interconnection procedure, without prejudice to compensation for any greater damages that may be suffered.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

As of today, Italian law does not provide for any monetary incentives for local manufacturing of equipment or materials used in the construction of renewable energy plants. However, alternative and "indirect" incentives are sometimes provided by the applicable laws and regulations. A clear example is represented by the recent Ministerial Decree of 5 July 2012 (the Fifth Conto Energia), relating to the new incentive system granted to photovoltaic plants.

Under the Fifth Conto Energia – which sets forth a specific procedure for the admission of certain photovoltaic plants to the incentive tariffs – if materials used to build the plants are produced in a EU member state, the plants built up using such materials benefit from a preferential criteria in the selection process to be admitted to the incentive system (see Paragraph 12.1 below).

12. What are the other incentives available to renewable energy generation companies?

12.1. The incentive system for photovoltaic plants – Feed-in tariffs

a) The "Fifth Conto Energia"

With respect to the incentive system granted to photovoltaic plants' operators, the Italian regulator has made available a feed-in tariff mechanism known as "Conto Energia" since 2005.

The "Conto Energia" mechanism consisted in the payment by the GSE of incentives to the plant, for twenty years starting from the date the plant commenced operations. The terms and conditions of this incentive system have been changed repeatedly in the past ten years, and the last of the Conto Energia to have been implemented, known as the Fifth Conto Energia, which was introduced by Ministerial of Decree 5 July 2012 ("Fifth Conto Energia"), and entered into force on 12 July 2012.

The intent of the Fifth Conto Energia was to reduce significantly the incentive tariffs of the Fourth Conto Energia in the current economic downturn, and the result has been a reduction ranging approximately from 30% to 60%, depending on the size of the plant.

However, since 6 July 2013, no incentive system has been available in Italy for photovoltaic plants that had not yet started operations or had not yet applied for the Fifth Conto Energia.

However, based on the applicable laws and regulations currently in force, plants that, as of 6 July 2013, were already receiving incentives under the Fifth Conto Energia, continued and will continue to receive them through their respective 20-year eligibility period (save for those plants in relation to which the respective operators chose to defer the receipt of the overall incentives over a period of time by seven years longer than the standard – see Paragraph 12.3). The incentives available under the Fifth Conto Energia are however alternative to and cannot be cumulated with the benefits deriving from (i) the mandatory purchase mechanism; and (ii) the net metering service.

Below is a summary of the main features regarding the incentive mechanism under the Fifth Conto Energia, which – as mentioned above – continues to apply to those plants which started operations or had applied for the Fifth Conto Energia as at 6 July 2013.

b) The new Feed-in Tariffs

The Fifth Conto Energia provides that photovoltaic plants with a capacity above 1 kW admitted to receive the new feed-in tariffs will receive from the GSE – which will withdraw the electricity produced – an incentive calculated on the basis of different criteria, for 20 years from their commissioning date.

More specifically, the Fifth Conto Energia provides that:

- admitted plants with capacity of up to 1 MW will receive payment of an all-inclusive tariff, which will be calculated on the basis of the capacity and the type of the plant;
- admitted plants with a capacity of more than 1 MW will receive payment of a tariff, which will be equal to the difference between the all-inclusive tariff (calculated on the basis of the capacity and the type of plant) and the "hourly zone rate".

Generally speaking, the tariffs are higher for integrated plants characterized by innovative measures and for concentration plants. With respect to the amounts of self-consumed electricity, a premium tariff will be granted.

The Fifth Conto Energia specifies the amount of the incentives that will be applicable to photovoltaic plants on a 6 months basis. The table below sets out the incentive tariffs for the second semester of the Fifth Conto Energia:

Incentive tariffs for the 2nd semester of the Fifth Conto Energia				
Size(kW)	**Plants on the buildings**		**Other plants**	
	All inclusive (€/MWh)	**Self-consumed (€/MWh)**	**All inclusive (€/MWh)**	**Self-consumed (€/MWh)**
1-3	182	100	176	94
3-20	171	89	165	83
20-200	157	75	151	69
200-1000	130	48	124	42
1000-5000	118	36	113	31
>5000	112	30	106	24

The incentives available under the Fifth Conto Energia are however alternative to and cannot be cumulated with the benefits deriving from (i) the mandatory purchase mechanism (*ritiro dedicato*) and (ii) the net metering service (*scambio sul posto*)[8] (see Paragraph 7.2 (a) and (b) above).

c) Admission to the new incentives

The Fifth Conto Energia sets out a new (dual) mechanism for the admission of photovoltaic plants to the incentive tariffs. Depending on the characteristics of the plants (mainly, on their capacity and on their specific type of plant), these will either be directly admitted to the incentive tariffs or will need to request such admission by means of the registration procedure, filing an application form with the GSE, which will then select among the applicants on the basis of a series of ad hoc criteria (see below for more detailed information).

[8] The net metering service will however continue to apply in case of specific request made by the operators, as an alternative to the incentive tariffs, both before and after the expiration of the period in which the incentive tariffs under the Fifth Conto Energia are payable.

More specifically, admission to the new incentive tariffs will automatically be granted to:

- photovoltaic plants with a capacity of up to 50 kW, if built on buildings in order to replace fibre cement or asbestos roofs;
- photovoltaic plants with a capacity of up to 12 kW (including plants which have undergone restoration, as well as to an increase of capacity by up to 12 kW);
- integrated photovoltaic plants (characterised by innovative measures), until the threshold of Euro 50 million of all-inclusive incentives has been reached;
- concentration photovoltaic plants, until the threshold of Euro 50 million of all-inclusive incentives has been reached;
- photovoltaic plants built the public entities through public tenders, until the threshold of Euro 50 million of all-inclusive incentives has been reached; and
- photovoltaic plants with a capacity ranging from a minimum of 12 kW to a maximum of 20 kW (including plants which have undergone restoration or plants whose capacity has been increased by up to 20 kW), if such plants request incentives that are lower by 20% with respect to the incentives granted to similar plants which applied for the registration procedure.

Conversely, photovoltaic plants not included in the above list may be admitted to the new incentive tariffs only by means of the registration procedure.

d) The registration procedure

The Fifth Conto Energia provides that the photovoltaic plants seeking admission to the incentive tariffs (but, mainly due to capacity reasons, may not be automatically admitted to receive such tariffs), will need to become registered, in a register managed by the GSE.

To this end, the Fifth Conto Energia provides that the GSE will make available – each semester – a series of registers, each of them for a pre-defined maximum amount of incentive tariffs to be granted to the eligible applicants[9] . Before making available the incentives reserved to each of the registers, the GSE will publish a notice (or invitation), further to which the photovoltaic plants seeking "registration" will need to submit to the GSE a series of documents within a certain period of time[10] . Within 20 days following the end of the registration period, the GSE will rank all the plants admitted to the registry on the basis of specific priority criteria[11] .

[9] The maximum amount of estimated incentives granted each year to the eligible plants with respect to the various registers are the following: (i) 1st register: up to Euro 140 million; (ii) 2nd register: up to Euro 120 million; and (iii) further registers: up to 80 million (until the Euro 6.7 billion threshold made available by the Fifth Conto Energia has been reached).

[10] The notice relating to the 1st register will be published within 20 days from publication of the implementing rules governing the registration process (which have to be published within 30 days from the date on which the Fifth Conto Energia enters into force). The application forms shall be submitted within 30 days from the publication of the notice relating to the 1st register. With respect to the 2nd and further registers, the application forms will need to be submitted within 60 days following the date of publication of the notice.

[11] The main priority criteria for admission to the register are the following, which have to be applied in a hierarchal order: (i) plants on buildings, with priority to those with modules installed to replace fibre cement or asbestos roofs, and in each case with a plant energy performance certificate showing at least class D performance, and ranked according to best performance; (ii) plants on buildings with modules installed to replace fibre cement or asbestos roofs; (iii) plants whose main parts are produced in a EU member country; (iv) plants located in certain contaminated sites, or on dismissed dumps, mines or caves; (v) plants with a maximum capacity of 200 kW; and (vi) plants built on buildings, canopies or

Incentive tariffs will thus be available to those registered plants that are ranked high enough to be admitted before the incentive caps mentioned above are reached, provided that the plant begins operations within one year after the rankings are published.

The rankings so prepared by the GSE are not subject to any scrolling mechanism. This means that where a plant registers in a semester for a certain register and its position in the rankings does not lead to its admission because the caps are reached, a further application for registration of the plant will be required to request any incentives available any semester thereafter.

The registration may be transferred to a third party only after the plant has been commissioned.

e) Contributions to the GSE

The Decree provides that the owners of plants that apply for the incentives under the Fifth Conto Energia must pay a contribution to the GSE for the preliminary investigation costs. The contribution has been set as Euro 3,00 per kW of nominal capacity of the plant, for the first 20 kW of capacity, plus Euro 2,00 for every kW of capacity in excess of 20 Kw[12]. The Decree also provides for an additional contribution to be paid to the GSE to reimburse administration and verification costs borne by the GSE, which has been set as 0.05 Euro cent for each KWh of energy that receives incentives; this additional contribution shall be paid by any plants benefiting of an incentive tariff.

12.2. The incentive system for the renewable energy plants (other than the photovoltaic sector) – Green Certificates and Feed-in Tariffs / Feed-in Premiums

a) *Current incentive system – Green Certificates*

The current incentive mechanism regarding the renewable energy sector (other than the photovoltaic sector)[13] provides that each qualifying plant shall be assigned a certain number of green certificates (also called Renewable Energy Certificates – RECs)[14], proportionally to the renewable electricity generated multiplied by a variable factor which depends on the type of renewable energy source used to fuel the plant.

Plants are eligible to receive RECs for a period ranging from a minimum of 8 years to a maximum of 15 years, depending on a series of conditions, including the renewable energy source used to fuel the plants and the year in which the plants were commissioned.

The energy produced or the RECs assigned to the photovoltaic plants' operators are then sold to other electricity producers and importers which (due to the fact that they are producers or importers of non-renewable energy) do not input into the national electricity system a minimum quota of electricity produced using renewable sources. This obligation to input the minimum quota, indeed, may be discharged either (i) by producing the minimum quota of

greenhouses. In the event that the total amount of incentive made available were not enough to admit to such incentives all the plants which would otherwise be granted registration pursuant to the criteria listed above, the following further criteria shall be applied (in a hierarchal order): (i) plants in relation to which the operator is requesting an incentive tariff reduced by 5% with respect to the one available at the time of the start of operations; (ii) chronological priority of the authorisation to construct the plant; (iii) lower capacity of the plant; (iv) chronological priority of the application for registration.

12 These contribution must be paid to the GSE at the time the application for either the incentive tariffs or registration is filed, as the case may be.

13 Regulated by Ministerial Decree 18 December 2008.

14 It shall be noted that RECs are not cumulative with the other forms of support; i.e., national, regional, local or EU support in the form of feed-in schemes, grants or loans with advanced capitalization.

energy from renewable sources (thus receiving the related RECs); or (ii) by purchasing whole or part of the minimum quota, or equivalent amount of RECs, from other producers.

b) *New incentive system – Feed-in Tariffs and Feed-in Premiums*

A new incentive system for renewable energy plants other than photovoltaic (including on-shore and off-shore wind farms, biomass and biogas plants) has been introduced by Ministerial Decree 6 July 2012, implementing Legislative Decree No. 28 of 3 March 2011, which became effective as from 11 July 2012 (the "RES Decree").

The RES Decree will gradually replace the green certificates (RECs) incentive system (which will be abolished starting from 1 January 2016), providing however for a transitional period – to safeguard the investments in renewable plants made in the past or to be made in the future, given the investors' reasonable reliance on the incentive system – from 2012 to 2015, during which the green certificate system will continue to apply to (i) plants that are currently benefitting from the actual regime; (ii) new plants that started operations on or before 31 December 2012; and (iii) new plants that started operations on or before 30 April 2013 and were authorized before 11 July 2012[15] .

The intent of the RES Decree is to reduce the amount of incentive in the current economic downturn, aiming to protect investors' legitimate reliance on the expected returns on their investment, as well as to create a stable legal environment to promote the use of renewable sources.

c) *Feed-in Tariffs and Feed-in Premium*

The RES Decree creates an incentive system for all renewable energy plantsother than photovoltaic plants with a capacity above 1 kW commissioned after 31 December 2012 either for the first time or following repowering or total or partial refitting.

The new incentive system provides the following:

i. admitted plants with capacity of up to 1 MW will receive payment of an all-inclusive feed-in tariff ("FiT"), to serve both as compensation for the sale of the electricity produced, which will be withdrawn by the GSE, and as the incentive for using renewable sources[16];

ii. admitted plants with a capacity of more than 1 MW will receive payment of a feed-in premium ("FiP"), as an incentive, and will be able to sell the electricity produced on the electricity stock exchange or by contract.

The RES Decree sets out the base amounts of the FiT and FiP, to be paid by the GSE in relation to each type and capacity of the plants that begins operations through 2015[17] , from the commissioning date throughout a period of time equal to the pre-defined expected average

[15] Through 31 December 2015, these plants will continue to benefit from the green certificates system and the GSE will be continue to be the buyer of last resort and purchase any unsold green certificates relating to electricity produced from 2011 to 2015, at a price equal to 78% of the reference price (the "GC Price"), determined to be Euro 180.00 less the average price of electricity produced by renewable sources during the year preceding the purchase, as determined by the Authority for Electricity and GAS (AEEG). From 1 January 2016 until the end of the respective applicable incentive period (15 years for renewable plants commissioned after 31 December 2007), plants eligible for the transitional regime will receive a feed-in premium equal to the GC Price.

[16] These plants may opt to switch to the FiP, but this choice will be irreversible once made.

[17] The higher the capacity, the lower the incentive tariffs granted to the plants: incentive tariffs may range from Euro 85/MWh for biogas plants with a capacity higher than 5,000 kW to Euro 291/MWh for on-shore wind power plants.

lifetime (ranging from 15 to 30 years, depending on the type of power source, with 20 years being the most prevalent expected average lifetime, applicable to on-shore wind-powered plants, biomass and biogas plants).

The incentive systems set forth by the RES Decree , however, are alternative to, and cannot be cumulated with, the benefits deriving from (i) the mandatory purchase mechanism (*ritiro dedicato*) and (ii) the net metering service (*scambio sul posto*) (see Paragraph 7.2 (a) and (b) above).

d) *Admission to the new incentives*

The RES Decree allows admission to the new incentive tariffs to:

i. micro plants (which may range from maximum capacity of 50 kW for certain hydro-power plants to 200 kW for biomass plants)[18], by means of automatic admission;

ii. small plants (20 MW for geo-thermoelectric plants, 10 MW for hydro-power plants and 5 MW for all other renewable sources, excluding photovoltaic), by means of a registration admission process;

iii. large plants (with a capacity above the applicable thresholds in paragraph (ii) above), admitted to the incentive system on the basis of reverse auction, where operators will bid on the amount of the incentive to be paid to the plant, starting from the pre-defined base amount.[19]

Registration for plants cannot be transferred to a third party until the registered plant is commissioned. For a given plant, an application for registration, or to participate in the reverse auction, can only be submitted if, at the time of submission, authorisation for construction and operation of the plant has already been issued and the estimate for interconnection of the plant to the power grid has been accepted.

e) *Caps to new incentives*

For each renewable source, the RES Decree sets out how the new plants to be admitted to the incentive system (up to the applicable cap) will be selected, as well as the different annual caps on the overall capacity that can receive the new incentives for the period from 2013 through 2015[20].

In particular, (i) micro plants are not subject to a cap on capacity[21], whereas (ii) small plants will be subject to an annual capacity cap (e.g., for wind-powered plants, 60 MW for each year in the 2013-2015 period) and (iii) large plants will be subject to an overall capacity cap (e.g., on-shore wind farms are subject to an annual cap of 500 MW per year in each of 2013, 2014 and 2015).

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18 Plants built by public entities through public tenders will be able to qualify even if their maximum capacity is up to double that allowed for private plants. Finally, certain special allowances are made for plants constructed pursuant to specific laws to be considered micro-plants.

19 The base price for the reverse auction will differ for each source of energy. Bids to reduce the base price by less than 2% will not be accepted. The minimum FiP awarded will be up an amount that is not less than the base price, minus a maximum reduction of 30%. On the basis of such provision, it seems that a participant offering a reduction of more than 30% would in any case receive a FiP equal to 70% of the base price. The implementing regulations should provide further clarifications.

20 The respective capacity of two or more plants fed by the same renewable source that belong to the same operator and are installed on the same or on contiguous parcels of land are added together for the purposes of classification as a micro, small or large plant, as if the two or more plants were a single plant.

21 Except for cases in which the incentives granted will be counted against the cap for small or large plants, as the case may be, and will therefore erode that category's cap.

In addition to the caps on overall capacity, the RES Decree sets an annual aggregate spending cap of Euro 5.8 billion for all types of renewable plants other than photovoltaic plants.

f) *Contributions to the GSE*

An application for admission to the incentive system, for all plants, will require payment to the GSE of a fee of Euro 100 plus a variable amount depending on the plant's capacity, up to a maximum fee of Euro 2,300. Starting from 1 January 2013, and for the entire incentive period, all admitted plants will be required to pay to the GSE a fee of Euro 0.05 for each kWh produced, which will likely be set-off by the GSE against the incentives to be received.

12.3. The voluntary extension of incentives for renewable energy sources

The Destinazione Italia Decree (Law Decree No. 145 of 23 December 2013, converted into Law on 21 February 2014) confirmed the two provisions affecting incentives for renewable energy sources, which intend to reduce the costs of renewable energy charged to the final consumers in their electric bills.

In addition to removing the minimum guaranteed prices under the mandatory purchase regime (*ritiro dedicato*) for a great part of those plants which could benefit from such incentive (see Paragraph 8), the Destinazione Italia Decree introduced the requirement for energy producers from renewable energy sources which benefit from green certificates, all inclusive tariffs (*tariffe onnicomprensive*) or premium tariffs, to choose between the following two alternatives:

i. Continue to receive incentives as granted, up until the expiry of the pre-defined incentive period, losing however the right to participate in any subsequent incentive scheme (including the mandatory purchase regime) for ten years after expiry of the incentive period; or

ii. Agree to receive a reduced annual incentive than that granted originally, receiving however such lower incentive for an additional seven-year period after expiry of the pre-defined incentive period. The amount of the annual reduction will vary, *inter alia*, depending on:

- Type of renewable energy source;
- The underlying incentive mechanism; and
- The years remaining until expiry of the pre-defined original incentive period, and will take into account the operator's additional costs for having extended the incentive period.

The requirement to choose between the above alternatives does not apply to plants admitted to benefit from the 'CIP 6' incentive system and new renewable energy plants incentivised pursuant to Ministerial Decree of 6 July 2012 (i.e., the RES Decree), except for plants for which the transitional regime applies.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

In February 2013, the GSE published the draft statistics on RES for the year 2012[22], calculated in accordance with the relevant European provisions with regard to particular factors (for instance the biodegradable fraction of waste).

The analysis completed by the GSE shows that, as at 31 December 2012, in Italy an aggregate of 47,092 MW deriving from RES

[22] Please note that, as at the date of publication of this guide, the draft statistics on RES for the year 2013 were not yet available.

were installed nationwide, for an overall energy power production of 92,460 GWh[23] , which represented 27% of the overall amount of electricity consumed in Italy in 2012.

a) Photovoltaic power

With respect to solar power, the aggregate capacity of Italian photovoltaic plants as of 31 December 2011 was 16,350 MW, while the total power production amounted to 18,800 MW[23].

b) Other renewable energy sources

With respect to the other main renewable energy sources, Italy's total capacity and production of electricity has seen a positive trend throughout 2012, with an increase of the capacity in almost every sector of renewable energies.

More specifically,

- *Hydroelectric*: the total capacity of Italian hydroelectric power plants as of 31 December 2012 was 18,200 MW[23] (mainly concentrated in northern Italy). The total power production amounted to 41,940 MW[23].

- *Wind*: the aggregate capacity of Italian wind power plants as of 31 December 2012 was 7,970 MW[23] (mainly concentrated in southern Italy and in the islands).The total power production amounted to 13,900 MW[23].

- *Biomass power*: the total capacity of Italian biomass plants as of 31 December 2012 was 3,800 MW[23]. The total power production amounted to 1,250 MW[23].

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[23] The respective capacity of two or more plants fed by the same renewable source that belong to the same operator and are installed on the same or on contiguous parcels of land are added together for the purposes of classification as a micro, small or large plant, as if the two or more plants were a single plant.

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GENERAL

1. What is the nature and importance of renewable energy in your country?

To ensure a stable and appropriate energy supply

Japan's energy self-sufficiency ratio[1] is traditionally very low due to lack of domestic natural resources, reaching a mere 8% in 2012. Conversely, around 92% of energy resources used in Japan for generating "primary energy" (including uranium for nuclear power) are imported from overseas. In light of this heavy dependence on imports and the temporary suspension of Japan's domestic nuclear power stations, renewable energy plays, and will continue to play, a crucial part in Japan's energy portfolio.

Following the 1973 and 1979 oil crises, the Japanese government recognized the importance of improving energy conservation and reducing its dependency on oil by promoting new non-fossil fuel based energy sources. In accordance with this policy shift, the government enacted the Energy Conservation Act[2] in 1979 to promote technological development for improving energy efficiency. As a result of continued efforts by both the government and the private sector, Japan has improved its energy consumption efficiency approximately 43% over the past thirty-seven (37) years and has become a global leader in energy efficiency. However, recent figures suggest the gap in efficiency between Japan and other major countries is slowly closing.[3]

The Japanese government adopted a policy of reducing oil dependence through the enactment of the Promotion of Alternative Energy Act in 1980.[4] Although dependence on oil declined from 77% in 1973 to 47.3% in 2012 in respect of primary energy supply, this percentage is still high in comparison with other countries. The total percentage of Japan's dependence on fossil fuel energy (including oil, natural gas, LPG and coal) in respect of primary energy supply was around 92.5% in 2012.[5]

In light of the trends in global economic development, and the expected growth of countries such as China and India, it is anticipated that demand for oil, gas and power will continue to increase long term. Exploitable natural fossil fuel reserves are, however, limited. In addition, oil reserves are disproportionately located in distant areas

1 The "energy self-sufficiency ratio" refers to the ratio between domestic production and primary energy supply in Japan - Energy Balance Report of Japan 2012 (Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry of Japan) (hereinafter "Energy Balance Report 2012").

2 The full English translation of this law is the Act concerning the Rational Use of Energy (Act No. 49 of 1979) (*enerugi no shiyou no gourika ni kansuru houritsu*).

3 In regard to primary energy supplied per GDP, Japan's energy efficiency was 2.5 times that of the US in 1991, but only 1.6 times in 2010 - Annual Report of Energy on Japan, 2013 (Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry of Japan) (hereinafter "Annual Report of Energy, in 2013").

4 The full English translation of this law is the Act on the Promotion of Development and Introduction of Alternative Energy (Act No. 71 of 1980) (*hikaseki enerugi no kaihatsu oyobi dounyuu no sokushin ni kansuru houritsu*).

5 Energy Balance Report 2012.

such as the Middle East.[6] Since the Asian economic crisis in 1999, the price of crude oil continues to remain high, and the natural resource market carries on its path of instability. As a result, Japan's energy supply (which, as noted above, is heavily reliant on imports) is considered fragile. In order to promote stability andinsulate Japan's economy from external market forces (such as future oil crises), renewable energy is considered as playing a fundamental and crucial role.

To reduce the environmental burden

The use of renewable energy is valuable not only for contributing to the improvement of Japan's humble self-sufficiency ratio but also for slowing the effects of global warming by reducing emissions of greenhouse gases.

The issue of climate change is recognized to be one of greatest environmental concerns facing the 'global village' at present. Faced with such issues, Japan committed to reducing its greenhouse gas emissions by 6% from 2008 to 2012. Given the Kyoto Protocol target is expected to be met, the Japanese government further set a new target aiming to reduce the total amount of global greenhouse gas emissions by 3.8% by 2020.[7] Furthermore, the Japanese government proposed a long-term target aiming to reduce the current level of emissions in Japan by 80% by 2050.[8]

To reduce the dependency on nuclear energy

The 'Master Plan of Energy' adopted by the Japanese government in June 2010 required zero-emission power generation to be increased to 70% before 2030. However, the government was forced to reconsider the plan after the nuclear accident in Fukushima (precipitated by the March 2011 earthquake in East Japan) given that it assumed that 50% of electricity power would be generated by nuclear energy. In revising the plan in April 2014, the Japanese government announced its policy to decrease its dependency on nuclear energy as much as possible by introducing energy conservation measures, increasing the use of renewable energy and by promoting efficiency in thermal power. The Japanese government also announced that it will accelerate the introduction of renewable energy as much as possible for a 3 year period starting from 2013, and commit to continuing to actively promote its development thereafter.

2. What is the definition and coverage of renewable energy under the relevant legislation?

The Renewable Energy Law[9], which governs the Japanese Feed-in Tariff ("FIT") program, defines "renewable energy resources" as follows:[10]

- photovoltaic (PV) power;
- wind power;
- hydro power;

6 Over 80% of crude oil imported into Japan is from the Middle East - Annual Report of Energy, in 2013.

7 "The Greenhouse Gas Reduction Target toward COP19" on 15 November 2013 (Ministry of Environment).

8 The Forth Basic Environmental Plan (Cabinet Decision on 27 April 2012).

9 The full English translation of this law is the Act on Special Measures concerning Procurement of Renewable Energy by Operators of Electric Utilities (Act No. 108 of 2011) (*denki jigyousha ni yoru saisei kanou enerugi denki no choutatsu ni kansuru tokubetsu sochi hou*)

10 Article 2(4) of the Renewable Energy Law.

- geothermal power and biomass (organic substances derived from plants and animals, which can be used as a source of energy, excluding crude oil, petroleum gas, combustible natural gas and coal and their by-products); and

- other resources to be designated by ordinance, which can be permanently used as electrical energy resources.[11]

Other than the Renewable Energy Law, the Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers[12] has a similar definition regarding renewable energy. It defines "renewable energy resources" as sunlight, wind power and other non-fossil energy resources that can be used permanently as energy resources and that are designated by the relevant enforcement ordinance.[13] The enforcement ordinance[14] designates the resources of renewable energy as follows:[15] (i) photovoltaic power; (ii) wind power; (iii) hydro power; (iii) geothermal heat; (iv) solar thermal power; (v) heat in the atmosphere; and (vi) biomass (except for fossil fuels).

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

To promote the use of electric energy generated by renewable energy and encourage renewable energy business, the Renewable Energy Law was passed by the Japanese Diet in August 2011 and came into force on 1 July 2012. Under the Renewable Energy Law, electricity companies (i.e., utilities) are obligated to purchase all electricity generated from renewable energy sources for certain periods at fixed prices designated by the Minister of the Ministry of Economy, Trade and Industry ("METI"). The renewable energy procured by the electricity companies is, through their grid system, broadly distributed to end-consumers who bear the procurement cost as a "renewable energy surcharge"[16] which is automatically incorporated into their electricity bills on a monthly basis.

4. What are the principal regulatory bodies in the renewable energy sector?

The Agency for Natural Resources and Energy, METI and the Ministry of Environment ("MOE") are the principal regulatory bodies.

5. What are the main permits/licenses required for renewable energy projects?

Certification of Facilities

To use the FIT program, a renewable energy project is required to obtain approval from METI (the "Certification of Facilities", commonly known as "*setsubi-nintei*").

[11] There is no ordinance which designates other renewable energy resources at the time of writing.

[12] The full English translation of this law is the Act on Promotion of Use of Non-Fossil Fuel Energy Resources and Efficient Use of Fossil Fuel Energy Resources by Energy Suppliers (Act No. 72 of 2009) (*enerugi kyoukyuu jigyousha niyoru hikaseki enerugi gen no riyou oyobi kaseki enerugi genryou no yuukouna riyou no sokushin ni kansuru houritsu*)

[13] Article 2(3) of the Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers.

[14] The Enforcement Ordinance of the Act on Promotion of Use of Non-Fossil Fuel Energy Resources and Efficient Use of Fossil Fuel Energy Resources by Energy Suppliers (Ordinance No. 222, 27 August 2009) (*enerugi kyoukyuu jigyousha niyoru hikaseki enerugi gen no riyou oyobi kaseki enerugi genryou no yuukouna riyou no sokushin ni kansuru houritsu sekourei*)

[15] Article 4 of the Enforcement Ordinance of the Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers.

[16] The renewable energy surcharge from June 2014 is 0.75 yen/kWh plus photovoltaic power surcharge (0.03 – 0.05 yen/kWh, depending on each area; it is the surcharge under the buyback program mentioned in Section 7 below).

Upon receiving the application of the Certification of Facilities, METI examines the legal requirements such as the capacity and quality of the power facilities, maintenance system, appropriate measuring facilities and reports of annual costs, and then approves the facilities if all requirements are met.[17] If the renewable energy is required to undertake an "Environmental Impact Assessment" (*kankyou asesu*) under applicable law or local government rules (such as wind power projects with capacity over 10,000kWh) the renewable energy project has to submit a copy of the opinions it received from METI with respect to its 'Draft Environmental Impact Statement' at the time it submits its application of Certification of Facilities.[18]

Other Permits

Other permits may be needed depending on the land classification of the site in which a proposed project is to be located (such classifications being ultimately determined at the local level in accordance with local laws and regulations). As a typical example, the Agricultural Land Act[19] prohibits using "agricultural land" for any purpose other than "agriculture". To enable renewable energy projects to be carried out on such land "conversion" under the Agricultural Land Act will be required (such "conversion" for certain types of agricultural land being difficult to obtain). Other laws often encountered in renewable energy projects in Japan are the Nature Conservation Act[20], Natural Parks Act[21], Act on Protection of Cultural Properties[22], and the Forest Act[23]. Applicable laws will, however, be ultimately determined on a case-by-case basis, at the local rather than national level. Thorough due diligence is therefore strongly recommended.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

A small or medium-sized private business operator[24] who establishes a facility that is used for new energy (such as renewable energy) can apply to have 7% of the costs of such facility deducted from its corporate tax liability.

17 Normally, METI issues the Certificate of Facilities about 1 month after the application. We note, however, that a number of solar power developers have recently faced cancellation following authorization due to their inability to timely execute binding land agreements and module supply agreements/EPC agreements. To avoid this issue re-occurring, METI recently released amendments to the regulations (effective from 1 April 2014) with respect to solar facilities (over 50kW) requiring land and facilities to be "fixed" (i.e., binding agreements) within 6 months of authorization. Those who are unable to do so will have their authorizations cancelled, with METI also notifying the relevant utility to enable connection applications, etc to also be terminated. Carve outs are, however, provided. Developers will be granted extensions in cases, for example, where connection application acceptances are not forthcoming from utilities within normal periods (i.e., 3 months) such as the case in Hokkaido or more time is needed due to the specific areas (such as those affected by the Great East Japan Earthquake).

18 Please note that the procedure of Environmental Impact Assessment is time-consuming (taking on average between 2-4 years to complete). The opinions of METI required to be submitted with the application for authorization can take, in some cases, approximately 18 months to obtain.

19 The Agricultural Land Act (Act No. 229 of 1952) (*nouchi hou*).

20 The Nature Conservation Act (Act No. 85 of 1972) (*shizen kankyou hozen hou*).

21 Natural Parks Act (Act No. 161 of 1957) (*shizen kouen hou*).

22 The Act on Protection of Cultural Properties (Act No. 214 of 1950) (*bunkazai hogo hou*).

23 The Forest Act (Act No. 249 of 1951) (*shinrin hou*).

24 A small or medium-sized company means one whose capital amount is less than JPY100,000,000 or whose total number of employees is less than 1,000.

Alternatively, set-up costs can be immediately amortized up to 30%.

In relation to photovoltaic and wind power generation facilities, small or medium-sized private business operators can choose the way in which all set-up costs are immediately 100% amortized. Other operators can also utilize this amortization benefit but are not permitted to benefit from the 7% corporate tax deduction applicable only to small and medium-sized operators.

Owners of renewable energy power-generating facilities which have acquired Feed-in Tariff authorization can also benefit from a 33.3% discount against the value of their real-estate for the calculation of their real-estate tax for three years.

7. Is there a purchase guarantee given by the relevant legislation for electricity generated by renewable energy companies?

FIT program

Under the Renewable Energy Law, electricity companies are required to enter into a power purchase agreement with a METI-approved power producer of renewable energy ("Specified Supplier") at fixed prices for certain periods designated by METI. The Minister of METI will determine the fixed purchase price and purchase period every year for projects which lock-in the price in that year[25] after taking into consideration the opinion of a 'Price Calculation Committee' which consists of five independent commissioners. The calculation of the fixed purchase price is based on (i) the normative cost assuming the supply of renewable energy derived electricity is carried out in an efficient manner; and (ii) the estimated amount of supply of renewable energy electricity, after taking into consideration the following factors:

- the current amount of renewable energy derived electricity supplied in Japan;
- the appropriate profit which the operator should earn (METI will give special consideration to the operator's profit for the initial three years to encourage the use of renewable energy);
- the cost of supply of renewable energy derived electricity which existing operators have been incurring prior to the enactment of the Renewable Energy Law; and
- the need to ensure that the cost of renewable energy is not excessive for end users.

Electricity companies can recover the cost of using renewable energy sources by applying a surcharge to end users in proportion to their power consumption. However, a particularly large business operator whose annual electricity usage amount exceeds 1,000,000 kWh and whose ratio of electricity usage to sales volume (per 1,000 yen) exceeds 5.6kWh, can apply for a special 80% reduction of the surcharge.[26] The cost of renewable energy and surcharges are adjusted through a clearing institution to average the burden shared amongst electricity companies throughout the country.[27]

25 FIT prices are 'locked-in' by an operator on the later date in which both (a) the Certification of Facilities is obtained and (b) an application for connection is "received" by the relevant utility. We note that a utility will not "receive" an application until a prior consultation process has been undertaken which usually takes about 3 months.

26 In addition to this, there is a special reduction for victims of the March 2011 East Japan Earthquake.

27 For example, there are a large number of consumers in Tokyo and Osaka paying surcharges to their respective utilities. However, such regions do not have many renewable energy facilities compared to other areas where the situation is reversed.

The buyback program

A buyback program for photovoltaic generation was launched in November 2009 in Japan as a pilot FIT program. Under this program, electricity companies must purchase the surplus electricity generated using photovoltaic power systems at a fixed price guaranteed for ten years. The minimum price guaranteed for households was JPY42 per kWh less than 10 kW, and the minimum price for others is JPY40 per kWh in 2011. The buyback program will be integrated into the FIT program.

8. Is there a minimum price guarantee given by the relevant legislation for electricity generated by renewable energy companies?

The following table shows (i) the procurement price (per 1kWh) at which electricity companies are obliged to purchase renewable energy derived electricity; and (ii) the minimum period during which electricity companies are required to purchase renewable energy derived electricity under FIT prices locked-in within the 2014 period[28] [29]. The procurement price and the minimum purchase period will be revised for subsequent projects annually. The price for an existing project can only be retroactively amended by METI, during times of 'economic turmoil' and after consultation with the independent 'Price Calculation Committee'.

[28] This is the period on or after 1 April 2014 and before 31 March 2015 (i.e., the 2014 Japanese Financial Year).

[29] The procurement price does not include consumption tax, unless otherwise stated.

Photovoltaic power

	10kWh or more	Less than 10kWh	Less than 10kWh (double generation)
Procurement Price	32.00 yen	37.00 yen (incl. consumption tax)	30.00 yen (incl. consumption tax)
Minimum Period	20 years	10 years	10 years

Wind power

	20kWh or more	Less than 10kWh	Offshore Wind Power
Procurement Price	22.00 yen	55.00 yen	36.00 yen
Minimum Period	20 years	20 years	20 years

Water power

	1,000kWh or more Less than 30,000kWh	200kWh or more Less than 1,000kWh	Less than 200kWh
Procurement Price	24.00 yen	29.00 yen	34.00 yen
Minimum Period	20 years	20 years	20 years

Geothermal heat

	15,000kWh or more	Less than 15,000kWh
Procurement Price	26.00 yen	40.00 yen
Minimum Period	15 years	15 years

Biomass

	Methane fermentation gasified biomass	Unused wood	General wood (including palm shell)	Waste (excluding wood) biomass	Recycled wood
Procurement Price	39.00 yen	32.00 yen	24.00 yen	17.00 yen	13.00 yen
Minimum Period	20 years	20 years	20 years	20 years	20 years

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Japan ratified the Kyoto Protocol in June 2002 and is expected to achieve its reduction target for the first commitment period between 2008 and 2012. However, it has not yet set a specific target for the second commitment period.

Although a couple of voluntary-based carbon credit systems have been introduced in Japan as pilot projects[30], no national statutory carbon credit system has been established thus far. On the other hand, some local governments such as Tokyo (since 2010) and Saitama Prefecture (since 2011) adopted their own independent carbon credit systems under which such local governments impose CO2 reduction on businesses of certain sizes and allow them to use carbon credits.

10. Do renewable energy-based power plants have priority for connection to the grid?

The Renewable Energy Law obligates electricity companies to connect their substation, transmission and distribution facilities with renewable energy-based power plants if the operator so requires. However, electricity companies can refuse connection if:

- the operator does not bear the connection cost;
- there is a possibility that the smooth electricity supply by the electricity company may be disrupted by the connection;
- the operator does not provide necessary information to the electricity company for the connection;
- the relevant connection agreement includes untrue facts, illegal contents or an excessive compensation provision against the electricity company;
- the operator does not agree to contractual provisions under which (i) the electricity company can require the operator to reduce electricity output without compensation; for a maximum of 30 days per year, where electricity supply exceeds demand (i.e., a 30-day statutory curtailment right without compensation); (ii) the electricity company will not be liable to the operator if its facilities become out of order due to natural disaster or prevention of injury or death; or (iii) the operator is not entitled to make a claim against the electricity company for its loss in respect of the electricity company's temporary suspension of business when it undertakes regular or extraordinary investigation or construction for connection purposes;
- the operator does not (i) permit investigation of its facilities by the electricity company; (ii) warrant non-relationship with anti-social forces; or (iii) enter into an agreement in Japanese which is governed by Japanese law and subject to the jurisdiction of the Japanese courts; or
- the estimated electricity supply by the operator will exceed the capacity of transmission or acceptance by the electricity company, even if it takes reasonable measures.

[30] Japan's Voluntary Emissions Trading Schemer which was led by MOE (2005 – 2013); Trial Implementation of Domestic Integrated Market of Emissions Trading which is led by MOE (2008 –), etc.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

The Rural Areas Renewable Energy Act[31] was enacted in late 2013 in order to (i) promote renewable energy projects in rural areas; and (ii) harmonize the promotion of such projects with the adequate protection of agricultural and forest land, fishing ports and other rural areas in which the projects are located. Under the Act, a renewable energy business operator who will contribute to the development of rural areas may enjoy the benefits of (i) a "one stop" procedure with respect to specific approvals such as "conversion" under the Agricultural Land Act; and (ii) a favorable position by which the operator may obtain expedited approval. The Japanese government expects "contributions" to rural areas by renewable energy projects to include, for example, an operator (a) using part of its profit for improvement of agricultural land surrounding the proposed facility; (b) establishing and operating a farmers' market and providing financial support; (c) regularly purchasing wood chips from the owners of local forest land for use in its biomass plant; or (d) using livestock manure from local farmers and selling environmentally-friendly compost as a byproduct of its biomass plant.

12. What are other incentives available to renewable energy generation companies?

Renewable Energy Power System Expenditure Subsidy

The Japanese government has established assistance programs to assist local governments or companies that use renewable energy facilities.[25] Local governments or companies must apply for this assistance program by submitting a 'use plan'. If the Minister of METI approves such plan, the local government or company will be granted subsidies for up to 1/2 (in case of a local government) or up to 1/3 (in case of a company) of the necessary costs of the facilities. The renewable energy under this assistance program is limited to (i) photovoltaic power, wind power, biomass, hydro power or geothermal power which is for self-use and has not been approved under the FIT program; or (ii) using solar heat, thermal difference energy, biomass heat energy, biomass fuel production, heat from snow or ice, or geothermal heat.

Loan for Environment and Energy

The Japanese government also provides an assistance program to make available low-interest loans for acquiring non-fossil energy facilities, including renewable energy facilities. The loans are provided by the Japan Finance Corporation, which is a wholly-owned subsidiary of the Japanese government. The applicable renewable energy is solar light, solar heat, wind power, thermal difference energy, biomass energy, snow and ice, geothermal heat, and hydro power.

[31] The full English translation of this law is the Act on Promotion of Generating Renewable Energy Harmonized with Healthy Development of Agriculture, Forestry and Fishery (Act No. 81 of 2013) (*nourin gyogyou no kenzenna hatten to cyouwa no toreta saisei kanou enerugi denki no hatsuden no sokushin ni kansuru houritsu*).

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

		April 2012 – March 2013 (1,000kWh)	Percentage to the total country generation of electricity	
Thermal Power		735,941,778		89.536%
Nuclear Power		15,939,413		1.939 %
Renewable Energy	**Water Power**	67,359,987	8.195%	8.525% (8.767%)
	Wind Power	167,093	0.020%	
	Photovoltaic Power	85,982	0.010%	
	Geothermal Heat	2,460,418	0.299%	
	Biomass	(1,754,911)	(0.214%)	
	Waste	(231,237)	(0.028%)	
TOTAL		857,405,223		100%

Note (1): The reference of Thermal Power includes Biomass and Waste.

Note (2): The statistics are based on "Actual generation of electricity in 2012" (Agency for Natural Resources and Energy, METI). The statistics for 2013 were not available at the time of writing.

Note (3): Because of the nuclear accident in Fukushima in March 2011 and the subsequent Japan-wide shutdown of nuclear energy plants, the ratio of nuclear power in this table is far less than that of 2010. No nuclear power plant has been operated since September 2013, on which the Oil Nuclear Power Plant in Fukui Prefecture was halted for a regular inspection.

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GENERAL

1. What is the nature and importance of renewable energy in your country?

The introduction of the Renewable Energy and Energy Efficiency Law No. 13 of 2012 (the "Renewable Energy Law") places the renewable energy sector's growth and development firmly on the government's agenda. This is confirmed by the country's energy strategy, which aims that 10% of the Country's energy will be from renewable sources within the next decade.

Furthermore, during the last decade environmental concerns including the advancement of renewable energy in Jordan resulted in the establishment of several organizations related to renewable energy, the most relevant of which is the Jordan Renewable Energy Society headed by HRH Prince Asem Bin Nayef, which promotes the renewable energy sector in Jordan.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Renewable energy is defined in the Renewable Energy Law as:

"Renewable Energy: energy derived from natural resources, which have an element of perpetuity and continuance."

In addition, the Renewable Energy Law specifies what constitutes a renewable energy source as:

"Natural sources of energy including solar energy, wind energy, bio-energy, geothermal energy and hydropower."

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The renewable energy sector is regulated through legislation, the most recent of which is the Renewable Energy Law. Other relevant legislation includes the General Electricity Law No. 64 of 2002 and the Licensing of Electricity Companies Regulation No. 76 of 2001.

4. What are the principal regulatory bodies in the renewable energy sector?

- Ministry of Energy and Mineral Resources;
- Electricity Regulatory Commission; and
- Promotion of Renewable Energy and Energy Efficiency Fund.

5. What are the main permits/licenses required for renewable energy projects?

At the outset, it shall be noted that in order for any entity to undertake any renewable energy projects, it must register as an entity in Jordan. A license from the Ministry of Energy and Mineral Resources must also be obtained in order for the registration process to be completed.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Income Tax

Article 3 of the Income Tax Law No. 28 of 2009 (the "Income Tax Law") states that all income generated within Jordan, which is not clearly exempt by the Income Tax Law or any other legislation, is subject to income tax.

Under the Income Tax Law, income tax deduction rates are as follows:

- 30% for banks;
- 24% for telecommunication, insurance, financial intermediation companies (including exchange and finance leasing companies); and
- 14% other companies.

As the Renewable Energy Law and the Income Tax Law have not addressed income tax liabilities related to the renewable energy sector, energy generation companies would be subject to a 14% income tax. However, the Council of Ministers may issue a decision granting renewable energy generation companies income tax exemptions.

Please note that after contacting the relevant authorities, we have learned that renewable energy generation companies were to be exempt from income tax, sales tax and custom duties for a period of 10 years from the date upon which the company begins to generate renewable energy. Such exemptions were included in the draft of the Renewable Energy Law. However, they were removed in order to be included in another legislation, which is to be enacted in the near future. Nonetheless, no legislation in relation to such matter has been enacted to date.

Sales Tax

Products, processes, equipments that are used for renewable energy and energy conservation[1] exempt from sales tax and are not subject to any customs duties.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

According to the new Renewable Energy Law, the companies licensed in Jordan to distribute energy will be obligated to purchase any and all power produced by licensed renewable energy power plants.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Article 10 of the Renewable Energy Law stipulates that the price of electricity generated from renewable energy sources shall be determined by virtue of instructions issued pursuant to the Renewable Energy Law. That said, it should be noted that the aforementioned article states that the prices of electricity to be sold to the licensed distribution companies shall not be less than the purchase price determined by the licensed distribution companies.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Yes, the Kyoto Protocol has been ratified in January 2003. Therefore, we are of the opinion that the general regime adopted in Jordan for carbon credits is the one specified under the Kyoto Protocol. That said, we opine that carbon credits are tradable in Jordan.

[1] Only the products listed in the Council of Ministers decision No. 898 dated 4 March 2008.

10. Do renewable energy based power plants have priority for connection to the grid?

No such priority is provided in the Renewable Energy Law.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

No. Both locally manufactured and imported materials and equipment used in the construction of renewable energy power plants will be exempt from sales tax and custom duties.

12. What are the other incentives available to renewable energy generation companies?

In accordance with the Renewable Energy Law, the following incentives exist:

The cost of connecting the licensed renewable energy power plant to the grid will be borne by the companies licensed in Jordan to distribute energy.

A fund called "The Promotion of Renewable Energy and Energy Efficiency Fund" shall be established for the purposes of providing any necessary funding for renewable energy projects, including but not limited to granting loans and providing guarantees.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

Based on the figures of 2009, the total percentage of electricity generated by renewable energy sources does not exceed 1% of the total electricity generated in Jordan.

Please note that no statistics in relation to the percentage of each type of renewable energy generated in Jordan is published.

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GENERAL

1. What is the nature and importance of renewable energy in your country?

Kazakhstan has world class reserves of oil, gas and coal. As a result, there has been less perceived need for the development of alternative energy sources than in many other countries. Most of the power stations in the country operate on coal, although some operate on gas or fuel oil. There are also a number of power stations that operate through hydroelectric power.

Notwithstanding the plentiful supply of natural resources in Kazakhstan, the Government of Kazakhstan has realized the benefits of encouraging the development of renewable energy sources. The Government is keen to pursue, and be seen to pursue, a policy of environmental conservation. The Government also sees a need for clean energy sources and the benefits of moving away from its dependence on coal.

Kazakhstan has a very favorable landscape for renewable energy, particularly solar, wind, biomass and bioethanol energy. Hydropower energy and wind energy have the greatest prospects for growth in terms of their commercial use in the short and medium-term. Hydropower is already used in Kazakhstan to generate power. In addition, there are plans to develop wind power stations and solar power stations in Kazakhstan. According to the Plan of Measures for Development of Alternative and Renewable Energy in Kazakhstan, approved by the RK Government in January 2013, 31 plants using renewable energy is expected to be commissioned in the period from 2013 through 2020. These 31 plants will include 13 wind power stations, 14 hydropower stations and 3 solar power stations. It is estimated that these plants will generate in total 1,040 MW of power.

The importance that Kazakhstan accords to renewable energy can be seen by its accession in 2009 to the International Renewable Energy Agency Charter (IRENA) and ratifying it on 22 March 2013. As emphasized by RK Government, Kazakhstan intends to stimulate the sharing of experience related to use of renewable energy as well as develop technologies and innovation in this area through the membership of IRENA.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Kazakhstan adopted the Law on Support for the Use of Renewable Energy Sources on 4 July 2009, as amended (the "Renewables Law"). The Renewables Law defines renewable energy sources as follows:

"renewable energy sources shall mean sources of energy which are continuously renewed due to natural processes including the following types: solar radiation energy, wind energy, hydrodynamic water energy; geothermal energy: ground heat, ground waters, rivers, and water bodies as well as man-made sources of primary power: biomass, biogas and other types of fuel from organic waste, which are used for generating electric and/or thermal energy."

Although coverage of renewable energy sources under the Renewables Law is quite broad, certain provisions of the Renewables Law do not apply to some renewable energy sources (see paragraph 8 below for the details).

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The main law regulating renewable energy is the Renewables Law.

Recently (in July 2013) the Renewables Law was considerably amended to introduce a new approach for the sale and purchase of the renewable energy (introducing a mechanism for determining differentiated tariffs for renewable energy, the absence of which has hitherto created uncertainty and a disincentive to invest in the sector). The amended provisions on the sale and purchase of renewable energy became effective in January 2014 and, as such, are not fully tested in practice. The corresponding subordinate legislative acts, which are necessary for implementation of the said provisions are in the process of development.

Any issues related to production, transmission and consumption of electric and/or heat energy which are not regulated by the Renewables Law are governed by the Law on Electric Power dated 9 July 2004, as amended (the "Electric Power Law").

Other relevant legislation includes *inter alia* the Water Code, the Land Code, the Law on Energy Conservation, and the Law on Natural Monopolies and Regulated Markets and the Law on Licensing.

The subordinate acts on renewable energy available at present include:

- Resolution No. 43 of the RK Government dated 25 January 2013 on the Approval of the Plan of Measures on the Development of Alternative and Renewable Energy in Kazakhstan for 2013-2020 (the "Renewable Energy Development Plan");
- Resolution No. 2190 of the RK Government dated 25 December 2009 on the Approval of the Rules, Deadlines for Agreement and Approval of Feasibility Studies and Projects of Construction of Facilities for the Use of Renewable Energy Sources (the "Rules of Approval of Feasibility Studies");
- Resolution No. 1529 of the RK Government dated 5 October 2009 on the Approval of the Rules of Monitoring the Use of Renewable Energy Sources (the "Monitoring Rules");
- Resolution No. 119 of the RK Government dated 19 January 2012 on the Approval of the Rules of Determination of the Nearest Point of Connection to Electric or Heat Network and Connection of Facilities for the Use of Renewable Energy Sources (the "Connection Rules");
- Resolution No. 271 of the RK Government dated 27 March 2014 on the Approval of the Rules for Defining of the Fixed Rates (the "Rules for Defining of the Fixed Rates");
- Resolution No. 290 of the RK Government dated 1 April 2014 on the Approval of the Rules for Defining of the Rates for Support of the Renewable Energy Sources (this this Resolution No. 290 is not officially published as of date of preparing this this review; Resolution will become effective only upon official publishing) (the "Rules for Defining of the Support Rates").

4. What are the principal regulatory bodies in the renewable energy sector?

Renewable energy in Kazakhstan is regulated by the Government of Kazakhstan, the Ministry of Environmental Protection (the "MEP"), the Ministry of Industry and New Technologies (the "MINT") and certain local executive bodies.

The role of the Government of Kazakhstan includes, *inter alia*:

- development of the state policy in the area of use of renewable energy sources;
- approval of various regulatory legal acts for the development and use of renewable energy sources; and
- approval of fixed rates for the purchase of electric energy produced by the companies generating energy through the use of renewable sources.

The role of the MEP includes, *inter alia*:

- approval of the plan for location of renewable energy sources;
- development of regulatory legal acts and technical regulations for the use of renewable energy;
- monitoring over use of renewable energy sources;
- development of the procedures and terms for defining the nearest location for connecting of the facilities using renewable energy to the electric and heating networks;
- development of the rules for the centrally managed purchase and sale of the electric energy produced by the renewable energy facilities; and
- coordination of the activities of state bodies, business entities and scientific organizations on the development and use of renewable energy sources.

The role of the MINT includes, *inter alia*:

- control over connection of the renewable energy facilities to the network of electric and heating lines of the energy transmitting companies.

The role of the local executive bodies includes, *inter alia*:

- coordination projects for the construction of renewable energy facilities for the production of heat energy for common (central) heat supply systems;
- reserving and providing land plots for construction of renewable energy facilities in accordance with the legislation on the use of land and the plan for location of renewable energy facilities.

Finally, the Center for Accounting and Financing of the Renewable Energy Sources Support (the "RES Center") was established by Resolution No. 1281 of the RK Government dated 29 November 2013. The RES Center was established in the form of a limited liability partnership and it is not a governmental body. Nevertheless, some of the RES Center functions are close to regulatory. The role of the RES Center includes *inter alia*:

- the purchase and sale of electric power produced by the facilities using renewable energy (in accordance with the procedures established by the Renewables Law); and
- the determination of the expenses for support of renewable energy sources (which will be counted for 1 Kwt/hour of electric energy produced from all types of renewable energy sources and supplied to the national electricity grid) and publishing such information on the website.

5. What are the main permits/licenses required for renewable energy projects?

The Government continues to shorten the list of activities related to energy generation, distribution and supply which require a license. Currently a license is required only for the purchase of electrical power for purposes of energy supply. Licenses for generation, distribution or transmission of energy were eliminated effective from August 2012 (i.e., a license is not required for the production and transmission of electric or heat energy, including when energy is produced with use of renewable energy sources).

The presence of licenses should be considered for design and construction of a renewable energy facility. This is because design and construction activities in Kazakhstan are licensed. Employment of licensed contractors is possible and may be reasonable in certain cases due to some constraints for obtaining of such licenses. The design documentation is subject to obtaining of various approvals from the state authorities prior to implementation.

In case of construction of a facility using hydrodynamic water energy, obtaining of certain approvals and permits related to use of water resources should be considered.

Other permits, approvals and certifications may be required for equipment and personnel.

INCENTIVES

6. Are tax incentives available to renewable energy generation companies?

There are currently no tax incentives available to companies generating energy with use of renewable energy facilities, although such companies may be eligible for "investment preferences" (which include tax incentives) under the Law on Investments dated 8 January 2003, as amended (the "Law on Investments"). The Law on Investments permits the granting of investment preferences to: (1) priority economic activities (this list includes generation, transportation and distribution of electric power); or (2) strategic investment projects (this list includes 29 specific projects, one of which is construction of a specific high capacity hydropower station). Investment preferences may be granted in the form of: (i) customs exemptions; (ii) in-kind state grants; (iii) land tax and property tax payment preferences; and (iv) partial compensation of expenses for purchase of gas and electricity, as well as for acquisition of land plots and facilities.

7. Is there a purchase guarantee provided for by the relevant legislation for generators of renewable energy?

Electric energy: Yes, generally there is a guarantee for purchase of the electric energy generated by the renewable energy producers.

Under the Renewables Law, the RES Center (as defined in paragraph 4 above) is obligated to purchase electricity produced from renewable sources that is supplied to the national grid in accordance with the procedure established by this Law. The fixed rates should be applied for purchase of electric energy from the renewable energy producers (see paragraph 8 below for the details).

Renewable energy producers may also sell electricity to general consumers. However, if they do so, they would be bared under the Renewables Law to sell electricity to the RES Center.

Electricity purchased by the RES Center from renewable energy producers will then need to be sold to the entities which are defined as "conditional consumers". Conditional consumers include: (i) companies producing energy with use of coal, oil, gas and nuclear fuel; (ii) companies purchasing electric power from outside of Kazakhstan; and (iii) hydropower stations with units producing more than 35 MW when such units are located within one hydro engineering complex. The Renewables Law provides for a special procedure for defining rate for sale of the electric energy by the RES Center to the 'conditional consumers'.

Heat energy: Heat energy which is generated by a renewable energy producers and which is supplied to a common heating supply system of a settlement, must be purchased by a company which supplies energy to such settlement. Heat energy must comply with the technical requirements of the system which accepts heat energy.

It is worth noting that the above provisions dealing with guaranteed purchases from the renewable energy producers are somewhat untested in practice as these became effective only in January 2014.

8. Is there a minimum price guarantee given by the relevant legislation for generators of renewable energy?

Electric energy: The Renewables Law envisages fixed rates for purchase of electric energy by the RES Center from renewable energy producers. These rates will be approved by the RK Government (in local currency) for a period of fifteen years. The rates will be subject to annual indexation. Further, the RK Government has the right to revise the fixed rates every three years. Such revised fixed rates, however, will not apply to the existing agreements between the RES Center and the renewable energy producers, what may have negative impact on such renewable energy producers.

The Rules for Defining of the Fixed Rates were adopted by the RK Government in March 2014. There are, however, no approved fixed rates as of April 2014.

In a public speech, the Minister of Environmental Protection stated that the plan is to approve fixed rates for wind power stations – 19 tenge (approximately US$0.104) for 1 kWt/hour, for solar power stations – 29 tenge (approximately US$0.159) and for the stations working with biogas – 27 tenge (about US$0.148).

Kazakhstan has recently undergone a period of currency instability, and the setting of long-term tariffs in local currency is likely to give potential investors in renewable energy some pause for thought, since much of the technology required to develop renewable energy sources must be imported.

The provisions of the Renewables Law on application of the fixed rates for the purchase of electric energy do not apply to certain renewable energy facilities. In particular, these provisions do not apply to: (i) hydroelectric power stations with total capacity of more than 35MW when the units are located within one hydroengineering complex and (ii) renewable energy facilities with the term of operation longer than the term for repayment of capital cost as established by the feasibility study for such renewable energy facility.

Heating energy: There is no minimum price guarantee for sale and purchase of heating energy.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Kazakhstan ratified the Kyoto Protocol on 26 March 2009. Currently under the Kyoto protocol Kazakhstan's status is as follows: "party included in Annex 1 for the purpose of the Kyoto Protocol and not included in Annex 1 for the purpose of the Framework Convention on Climate Change".

In practice it means that Kazakhstan accepts voluntary obligations on fulfilment of the provisions of the Kyoto Protocol but it is not listed in Annex 1 of the Framework Convention on Climate Change and assigned amount units are not defined for Kazakhstan.

Provisions on internal carbon emissions trading were introduced in December 2011 and became effective from January 2013.

Certain entities which emit greenhouse gases in an amount exceeding the equivalent of 20,000 metric tons of carbon dioxide per year (the "Regulated Entities") must obtain quotas for such emissions. Quotas will be granted by the MEP and its regional subdivisions in the form a certificate, and must be obtained for each source of emission of greenhouse gases. If the quotas are exceeded, the entity will need to purchase unused quotas from other entities and/or carbon units which are obtained as a result of emissions-reducing projects.

Market mechanisms for the reduction of emission and absorption of greenhouses gases should be implemented through:

- trading of greenhouse gas emission quotas;
- trading of units of absorption of greenhouse gases, units of certified emission reduction, units of emission reduction, units of internal emission reduction;
- international trading of units which is conducted among the countries which have limitations and/or obligations on reduction of emissions of greenhouse gases (and among the entities in those countries).

The first quotas were issued by the MEP for the year 2013. Market mechanisms for the reduction of emission and absorption of greenhouses are still under development.

10. Do renewable energy based power plants have priority for connection to the grid?

The energy transmission companies are obliged to determine the nearest point of electric or heating grid which complies with the technical requirements and connect the facilities producing renewable energy on a non-discriminatory basis.

Where there is any limitation in the transmission capacity of the transmission grids, the energy transmission companies must give priority to the transmission of electricity generated using renewable energy sources.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

There are currently no incentives specifically for domestic manufacturing of equipment or materials used in the construction of renewable energy based power plants. However, legislation promotes the use of locally produced goods, work and services by various entities, including state bodies and state companies, the companies which are controlled by the State National Welfare Fund.

12. What are the other incentives available to generators of renewable energy?

The following legislative incentives for the use of renewable energy are provided for:

Training

As one of the conditions of the state regulation of the use of renewable energy, it is envisaged that the State will provide for the training of Kazakhstan personnel. The Renewables Law does not give any explanation on what is meant by this provision. However, we believe that the State will propose to allocate funds from its budget towards the training of Kazakhstan personnel, for example in the construction and operation of renewable energy facilities. If this is the case, it is likely that a tender will be held for companies capable of organizing training for Kazakhstan personnel.

Guaranteed provision of land plots for construction of renewable energy facilities

The local executive bodies are responsible for reserving and providing land plots for the construction of renewable energy facilities indicated in the plans for the location of renewable energy sources. We believe that the provision of the land plots for construction of the renewable energy facilities which are envisaged by the Renewable Energy Development Plan is guaranteed.

The right to exemption from payment for power transfer services

Entities producing electrical and thermal power generated from renewable energy sources are exempt from payment to energy transmission companies for power transfer services.

Investment Preferences (also addressed in paragraph 5 above)

The right to claim and receive investment preferences is subject to a number of further restrictions envisaged by the Law on Investments.

In order to receive investment preferences, an investment contract providing for such investment preferences must be entered into with the "authorized body". The authorized body is currently the MINT. Contracts for granting of investment preferences are entered into only with legal entities incorporated in the Republic of Kazakhstan which are performing an "investment project". Therefore foreign investors must establish a legal entity in Kazakhstan to qualify for investment preferences.

Another restriction on investment preferences is that they are only granted for certain types of activities/projects which are deemed to be "priority activities" or "strategic investment projects", and these are determined by the Government.

The following projects and activities are stated to be "priority activities": electric power production; transmission, distribution and sale; supply of steam; construction of water facilities; and civil engineering construction. It is not clear from the legislation what the position is with respect to the design and construction of facilities for the production and use of renewable energy. It is our view that the design and construction of facilities for the production and use of renewable energy should be considered a "priority activity" for the purposes of the legislation. On that basis, some investment preferences for the design and construction of facilities for the production and use of renewable energy may be available (although not all, because some investment preferences can be granted only for "strategic investment projects").

When available, investment preferences would cover the design, construction, production and sale of power (electrical and thermal).

A list of "strategic investment projects" was approved by the RK Government on 1 September 2009. It includes 29 specific projects, one of which is the construction of a specified hydropower station.

The following describes the types of investment preferences that may be available for renewable energy projects.

Customs import duties exemptions

Import customs exemptions may be available to entities implementing either strategic investments projects or projects which qualify as "priority activities". For such projects, import customs duties exemptions may be granted for the import of raw materials and technological equipment, including component parts, required for implementation of the investment project. For technological equipment such exemptions may be granted for a term of not more than five years from the date of registration of the contract. For component parts of the technological equipment and for raw materials, customs duties exemptions may be granted for a term of up to five years from the date of commissioning of the fixed assets (the term will depend on the amount of investment). Notice of a decision by MINT to grant exemptions of a project from import customs duties should be sent by the MINT within five business days to the authorized customs body.

State in-kind grants

State in-kind grants may be granted for land plots, buildings, structures, machinery and equipment, computer facilities, measurement devices and control instruments, transport vehicles (except for passenger motor transport), production and household stock. Such grants provide for temporary free use of property or the right of temporary free land use with subsequent free transfer into ownership or land use upon performance of investment obligations under a relevant contract.

State in-kind grants are valued at market price. The maximum amount of a state in-kind grant may be not more than 30% of the amount of investment in fixed assets of the investing legal entity. If the estimated value of the requested state in-kind grant exceeds the above, the recipient may receive the requested property and pay the difference between its estimated value and the maximum amount of the state in-kind grant.

State in-kind grants are provided by the MINT upon agreement with the State Property and Privatization Committee of the Ministry of Finance and/or Agency of the Republic of Kazakhstan on Land Resources Management, as well as certain local executive bodies.

Land and property tax payment preferences

Preferences on the payment of land tax and property tax can be granted only to the entity implementing a strategic investment project, provided that such project: (i) falls under the "priority activities" list; (ii) has "high-added value"; and (iii) either results in cutting-edge technology (as defined by the RK Government) or involves investments above a required threshold level (approximately $ 50,000,000 in 2014).

Partial Cost Compensation

Partial compensation of costs for the purchase of gas and electricity as well as for the acquisition of land plots and facilities ("commercial preferences") can be granted only to entities implementing "strategic investment projects" in settlements with a low level of social and economic development (as defined by the RK Government).

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

According to publically available data, thermal power amounts to 87% of the total electricity generating capacity in Kazakhstan; the share of hydroelectric power amounts to nearly 12% while other sources make up the balance. In terms of thermal power generation, coal plays the leading role with a share of nearly 75%, gas nearly 23%, and fuel oil makes up the balance.

At present, apart from some hydroelectric power, Kazakhstan does not generate any significant amount of power through renewable energy sources. Most power generated from renewable energy sources is generated by small-scale entrepreneurs and local farmers who generate power for their own consumption. This would probably amount to less than 1% of Kazakhstan's total power production.

Unfortunately, the development of the renewable energy industry is hampered by the cost of production of renewable energy as compared to the more traditional sources of power. It is therefore vital that Kazakhstan develops a sustainable system of subsidies and other support mechanisms in order to promote the development of the renewable energy industry in Kazakhstan.

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GENERAL

1. What is the nature and importance of renewable energy in your country?

In Kyrgyzstan, hydropower is the most common renewable energy source. More than 80% of all energy in the country is produced by the Toktogul cascade of hydropower plants ("HPPs"), built during the Soviet era. Kyrgyzstan's hydropower sector has the capacity to produce approximately 140 billion kWh per year. However, today it produces not more than 10% of this amount. By the amount of electric power which can be produced by hydropower plants, Kyrgyzstan is ranked 3rd among CIS countries after Russia and Tajikistan. Other renewable energy sources (solar power, wind power, etc.) are practically not used in the republic.

The Kyrgyz electric power grid consists of 15 HPPs with a total capacity of 2,950 MW. Also, there are 2 thermal power plants, thus, the total power capacity of the energy sector is 3680 MW.

The electric power sector produces approximately 3.9% of the gross domestic product (GDP) and 16% of the industrial production volume, 10% of the national budget revenues. Thus, the electric energy sector has a material impact on the economy of the country.

2. What is the definition and coverage of renewable energy under the relevant legislation?

The definition of renewable energy is given in the Law of the Kyrgyz Republic "On Renewable Energy Sources" of 31 December 2008 No. 283 (the "Law on Renewable Energy"). According to Article 3 of this Law, renewable energy is ecologically clean energy produced by renewable energy sources including renewable fuel.

Renewable energy sources include:

- energy of sun, earth, vacuum, wind, and water;[1]
- energy of non-mineral and non-carbonic origin, energy of decomposition (fermentation) of biomass of any organic waste and/or materials; and
- energy of secondary heat (graduation towers, transformation substations, other industrial installations and aggregates, operation of which results in generation of secondary thermal energy).

[1] Hydro power plants are considered renewable provided that the established capacity of HPP is less than 30 megawatts (MW). HPP's with the established capacity of 30 and more MW are considered traditional sources of energy. According to the Law on Renewable Energy, traditional energy is the energy gained from non-renewable energy sources, particularly from hydrocarbons (coal, oil, gas) and hydroelectric power stations with the established capacity of 30 and more megawatts.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The energy sector is regulated by the Government of the Kyrgyz Republic and special authorized state body for energy. The principal laws and regulations governing renewable energy are: (i) the Law on Renewable Energy of 31 December 2008 No. 283; (ii) the Law "On Energy" of 30 October 1996 No. 56; (iii) the Law "On Electric Energy" of 28 January 1997 No. 8; (iv) the Law "On Energy Saving" of 7 July 1998 No. 88; (v) the Strategy of development of fuel and energy infrastructure until 2025, approved by Resolution of the Parliament of the Kyrgyz Republic of 24 April 2008 No. 346-IV; and (vi) the Program for Development of Small and Medium Energy Sector in the Kyrgyz Republic until 2012, approved by Presidential Edict of 14 October 2008 No. 365.

4. What are the principal regulatory bodies in the renewable energy sector?

The principal regulatory bodies in the renewable energy sector are: (i) the Government; (ii) the Ministry of Energy and Industry as a special authorized body for energy, including renewable energy; (iii) the Directorate of the project on development of small and medium energy sector in the Kyrgyz Republic (the "Directorate") formed by Presidential Edict of 2 May 2008 UP No. 155. The Directorate is not a state body, but it is vested with the authority to attract investments to new generating capacities and to develop non-traditional and alternative energy sources.

5. What are the main permits/licenses required for renewable energy projects?

Since the Law on Renewable Energy of 31 December 2008 No. 283 was last amended in October 2012, licenses for generation of electric energy from the renewable energy sources are no longer required.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Kyrgyz law allows the granting to companies generating electric and thermal power using renewable energy sources, of incentives and privileges in the form of tax reduction, exemption from customs duties upon import and export of the equipment, installations and parts for renewable energy generation companies.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Kyrgyz law provides that energy generated by renewable energy sources is subject to mandatory purchase by energy companies. According to the most recent amendments to the Law on Renewable Energy, electricity generated from RES and not consumed by the plant owner for its own purposes or not sold to other consumers on a contractual basis must be acquired by the largest power distribution company operating in the administrative territorial unit where the RES plant is located, irrespective of to which company's power networks this RES plant is connected.

Thus, there is a legislative guarantee of purchase of energy generated. In Kyrgyzstan, there are 4 energy companies: Severelectro OJCS, Vostokelectro OJSC, Oshelectro OJSC, and Jalalabadelectro OJSC. In all companies the majority shareholding is owned by the state. Energy companies not meeting their obligations to mandatorily purchase the electric power generated by renewable energy sources shall pay compensation to electric power producing companies for lost profit.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Under Kyrgyz law, the state sets tariffs for energy generated by renewable energy sources in the amount ensuring recoupment of renewable energy projects within up to 8 years. According to the most recent amendments to the Law on Renewable Energy during the payback period, tariffs for RES electricity should be determined by multiplying the maximum tariff for end consumers by a respective coefficient as specified below:

- for water power plants this coefficient is 2.1;
- for sun power plants this coefficient is 6.0;
- for biomass power plants this coefficient is 2.75;
- for wind power plants this coefficient is 2.5;
- for land power energy this coefficient is 3.35.

Upon expiration of the payback period, tariffs for RES electricity are determined by the Government for each plant individually based on calculations taking into account the costs of electricity generation and fair profit. The newly determined tariffs for RES electricity are subject to annual indexation according to the procedure defined by Kyrgyz law.

Compensation for additional costs incurred by electric power companies when purchasing RES-generated electricity is taken into account by the Government when calculating and determining traditional electricity tariffs for electric power companies.

Tariffs for electric and thermal power are set by the Ministry of Energy and Industry of the Kyrgyz Republic upon the consent of the Parliament of the Kyrgyz Republic.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

The Kyoto Protocol was duly ratified by the Kyrgyz Republic. The law on the ratification of Kyoto Protocol was adopted on 15 January 2003. Enterprises are required to obtain permits for carbon credits from the State Agency on Environmental Safety. Carbon credits are also subject to a charge. The opportunity of emission trading prescribed by the Kyoto Protocol has not been adopted by the Kyrgyz Republic due to underdevelopment of the relevant market.

10. Do renewable energy based power plants have priority for connection to the grid?

Kyrgyz law envisages the guaranteed connection of small and medium HPPs to the grid. All power companies must ensure non-discriminatory access to their networks for electric power producers using RES to supply power generated by them to the power network, provided that it meets the required standards. All costs of constructing the power transmission lines up to the point of interconnection to the electric power company's network are borne by the RES plant owner.

The RES plant must be connected to the

networks of the power company offering the lowest cost of connection. National electric station networks and power distribution companies must secure unimpeded transit of electric power from the RES producers to consumers.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

Kyrgyz law provides that the state economically supports the development and application of renewable energy sources. However, it does not provide incentives for domestic manufacturing of equipment or materials used in the construction of renewable energy based power plants. Economic incentives and privileges are provided to renewable energy generation companies (as described in Section 6 above).

12. What are the other incentives available to renewable energy generation companies?

Kyrgyz law sets additional privileges for companies generating electric and thermal power using renewable energy sources by providing beneficial and targeted credits.

Besides, pursuant to the last amendments to the Law on Renewable Energy licensing of activity in the area of RES was declared invalid. Thus, the entities engaged in the area of RES (generation, transmission, sale, export of electricity, construction of power plants using RES: solar, wind, and hydro power plants), are not required to obtain respective licenses.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

As mentioned above, more than 80% of all electricity in the country is produced by the Toktogul HPPs cascade. The share of small and medium energy sector in the total volume of production does not exceed 0.5%. The use of other types of non-traditional renewable energy sources is insignificant and makes only 0.7% in the energy balance of the country.

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GENERAL

1. What is the nature and importance of renewable energy in your country?

Renewable energy resources have historically gained an important role in the balance of primary energy resources in Latvia. In 2012 the share of renewable energy sources in total gross final energy consumption in Latvia comprised 35.8%. The majority thereof was provided by large hydro power plants (Kegums HES, Plavinas HES and Riga HES), while some was generated by wind power plants, biogas power plant, biomass combined heat and power plants, as well as small hydro power plants. The main types of renewable energy resources used in Latvia are hydro energy and solid biomass (wood-pulp). The share of energy generated from renewable energy sources in the entire transport was 2.1% of the final consumption of energy in the transport in 2012 (in 2010 the share of 3.3%, while in 2011 – 3.2% was reached).

According to Part A of Annex I of *Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC,* the objective of Latvia is to increase the share of energy from renewable sources in gross final consumption of energy from 32.6% in 2005 to 40% in 2020. Likewise, the objective of Latvia also intends by the year 2020 to achieve at least a 10% share of renewable energy in gross final consumption of energy in transport.

2. What is the definition and coverage of renewable energy under the relevant legislation?

The Energy Law defines renewable energy resources as wind, solar, geothermal, wave, tidal and water energy, as well as aerothermal (thermal energy accumulated in the air), geothermal energy (thermal energy deposited under the surface of soil) and hydrothermal energy (thermal energy found in surface waters), landfill gas and sludge gas and biogas, and biomass.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

Renewable energy sector is regulated by the following principal laws and regulations:

- Energy Law;
- Electricity Market Law;
- Law on Bio-Fuel;
- Law on Public Utilities Regulators;
- Law on Subsidized Electricity Tax;
- Law on Natural Resources Tax;
- Law on Excise Tax;
- Cabinet of Ministers Regulations No. 262 "Regulations on Production of Electricity, by Means of Renewable Energy Resources and Procedure for Determination of Pricing"; and
- Cabinet of Ministers Regulations No. 221 "Regulations on Production of Electricity and Determination of Prices, when Generating Electricity in Combined Heat and Power Plants" and other.

4. What are the principal regulatory bodies in the renewable energy sector?

The energy sector, in general, is regulated by the Public Utilities Commission, which acts under subordination of the Minister for Economics.

5. What are the main permits/licenses required for renewable energy projects?

Depending on the particular renewable energy project, the following permits/licenses might be necessary:

- building permit (also authorizations for construction at the territorial sea, use of earth entrails, etc.);
- permit for increase of power generation capacity or installation of new generation equipment;
- permit for performance of polluting activities (environmental impact assessment might be necessary as well);
- permit for connection of the power station to the grid, etc.

It has to be taken into account that in order to launch generation of electricity at power stations where the installed electric capacity exceeds 1 MW, or to produce electricity and heat in cogeneration, where the total installed electrical capacity of the cogeneration equipment in the cogeneration power plant is more than 1 megawattone, has to register with the Register of Electricity Producers (but no separate permit/license needed). Similarly, in order to sell electricity to any energy users if the total sales volumes exceed 4,000 megawatt hours per annum, it is necessary to register with the Register of Electricity Traders.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

The Law on Natural Resources Tax provides that:

- hydro power plants are not required to pay natural resources tax for the use of natural resource (water) if their power exceeds 2 MW;
- there are tax exemptions for carbon dioxide gas emissions for stationary technological equipment and aircraft which are included in the EU emissions trading system and meet certain criteria to be able to trade in emissions quotas;
- there is no tax payable for emission of carbon dioxide (CO_2) generated, when using renewable energy resources and peat in certain stationary technological equipment.

The Law on Excise Tax provides for:

- exemptions to diesel made with specified levels of rapeseed oil and used in the agricultural sector.

The Electricity Tax Law states:

- Exemptions are applicable to electricity, produced:
  1) from renewable energy resources;
  2) in hydroelectric power plants;
  3) in combined heat and power plants, corresponding to efficiency criteria set forth by laws and regulations on generation of electricity in combined heat and power process.

Law on Subsidized Electricity Tax provides for:

- reduced subsidized energy tax rate for energy made from renewable energy sources.

No	Type of renewable energy resources and power plant	In 2010 and following 10 years
1.	Hydro power plants with capacity exceeding 5 MW	34.31 %
2.	Hydro power plants with capacity of 5 MW and less	1.98 %
3.	Power plants, generating or planning to generate wind energy, if electric capacity installed in the power plant does not exceed 0.25 MW and, if electrical capacity installed at the wind farm does not exceed 0.25 MW and it is connected to electricity distribution operator's transformer 20/0.4 kV on the side of.4 kV	0.27 %
4.	Power plants, generating or planning to generate wind energy, if power energy is or would be generated in power pants, not mentioned in Point 3 herein above	5.10 %
5.	Biogas power plats	7.93 %
6.	Biomass power plants and plants, where biomass is used jointly with fossil fuel	4.97 %
7.	Solar power plants	0.01 %
	Total	54.57 %

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

According to Electricity Market Law, certain share of total consumption of all end consumers in Latvia shall be comprised of electricity produced from renewable energy resources. This share is determined according to the above table:

1) Producers generating electricity by means of renewable energy resources (hydro energy, biomass, wind energy, sun energy) or planning to do so may acquire the right to sell the produced electricity to the public trader in the form of mandatory procurable amount of electricity or the rights to receive a fee for electric capacity installed (biomass, biogas) (according to Cabinet of Ministers Regulations No.262);

However, for the purpose of evaluating whether such support is economically sound and in order to prevent the increase of the end tariff higher than the one expected (because costs incurred by the public trader upon purchasing the electricity from such producers are covered by all end users of Latvia in proportion to their consumption), it is stated that during the period from 26 May 2011 till on 1 January 2016 no tenders would be organized regarding acquisition of rights to sell electricity generated in biogas, biomass, sun and wind power plants within the scope of mandatory procurement, and the producer would not be able to qualify for selling of electricity within the scope of mandatory procurement and to receive for acquisition of the rights the guaranteed price for installed electric capacity.

2) Producers generating electricity in combined heat and power process by means of renewable energy resources or planning to do so may acquire the right to

sell the produced electricity to the public trader in the form of mandatory procurable amount of electricity or the rights to receive a fee for electric capacity installed in combined heat and power plant (according to Cabinet of Ministers Regulations No. 221).

However, in 2012 it was stated that during the period from 10 September 2012 till 1 January 2016 the producer may not qualify for these types of support. In addition, the current recipients of the support had maximum period for receipt of the support established. In 2013 amendments were introduced to the formula for calculation of electricity price within mandatory procurement for the purpose to reduce support for high-capacity combined heat and power plants.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

There is no minimum price guarantee given by the legislator. However:

- Cabinet of Ministers Regulations No. 221 contain formulas, according to which (1) the price for which the trader buys the electricity generated in combined heat and power process from combined heat and power plants, which obtained the rights to sell the generated electricity within the scope of mandatory procurement, or (2) the fee for electric capacity installed in combined heat and power plant;

- Cabinet of Ministers Regulations No. 262 contain formulas, according to which is calculated (1) the price for which the trader buys the generated electricity from a business person, who obtained the rights to sell electricity generated from renewable energy resources within the scope of mandatory procurement process; or (2) the fee for installed electric capacity.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Latvia ratified the Kyoto Protocol in 2002 which came in effect in 2005. In 2005 Latvia also joined the European Union Emission Trading Scheme.

The emission allowances are received by operators (1) whose stationary installations perform certain polluting activities; and (2) whose stationary installations have permits for greenhouse gas emissions granted. The participants of the Emissions Trading Scheme have to conduct monitoring, submit verified emission reports, as well as by a set date deliver such volume of emission allowances to the government which conform to the volume referred to in the verified and approved emission report. If the annual emissions of the operator are lower than the annual emission allowance granted to him, then the operator may sell the surplus emission allowance on the market through the emissions register or accrue them for subsequent years. The operators may also buy emission reduction units (ERU) issued under the Clean Development Mechanism (CDM) and the Joint Implementation introduced by the Kyoto Protocol in order to fulfil their commitments towards the European Emission Trading Scheme.

10. Do renewable energy based power plants have priority for connection to the grid?

No, renewable energy based power plants do not have priority for connection to the grid.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

No, there is no such incentive.

12. What are the other incentives available to renewable energy generation companies?

There are various projects financed from the state budget and EU funds, as according to the Law on Control of Support of Commercial Activity, support is allowed for investments into generation of such energy, which is obtained by means of regenerative resources (energy resources, the renewal whereof is subject to natural processes, — sun, wind, biomass, ground heat and water potential energy), in the amount of up to 60 per cent of costs for investments:

- into land areas, necessary in order to achieve the purposes set for environmental protection; as well as
- into buildings and equipment, necessary, in order to reduce or liquidate pollution and noise; and
- investments, necessary, in order to adjust production technologies to the needs of environmental protection.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

Please find below the available information from the Ministry of Economics of the Republic of Latvia on the total share of the electricity generated from renewable energy sources in the gross electricity consumption in Latvia (%).

	2000	2005	2008	2009	2010	2011	2012
Hydropower plants	47,6	47,1	39,9	47,9	46,9	39,3	47,2
Key hydropower plants	47,2	46,3	39,0	46,9	45,9	38,5	46,2
Small hydropower plants	0,4	0,9	0,9	0,9	1,0	0,9	1,0
Biomass power plants	-	0,1	0,1	0,1	0,1	0,2	0,8
Biogas power plants	-	0,5	0,5	0,6	0,8	1,5	2,8
Wind farms	0,1	0,7	0,8	0,7	0,7	1,0	1,5
Total share	**47,7**	**48,4**	**41,2**	**49,2**	**48,5**	**41,9**	**52,3**

Please also see below the available statistical information from the Central Statistical Bureau of the Republic of Latvia regarding electricity generated from renewable energy sources, GWh.

	2009	2010	2011	2012
Hydroelectric power plants in total	3457	3520	2887	3706
Wind turbines	50	49	71	112
Biomass power plants	4	9	13	65
Biogas power plants	44	57	107	222
Total	**3555**	**3635**	**3078**	**4105**
Pro rata share	**49,22**	**48,47**	**41,93**	**55.03**

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GENERAL

1. What is the nature and importance of renewable energy in your country?

The increase of the renewable energy share in Lithuania continually remains as one of the key objectives declared at the level of national energy policy and one of the main strategic pillars established by the National Energy Independence Strategy approved on 26 June 2012, which is highly focused on security of supply, competition of energy markets and sustainable development.

Taking into account the lack of local primary energy sources and dependency on fossil fuel imports from one single supplier, development of alternative energy production is an underlying target for the national energy sector. Renewable energy incentives constitute a part of the groundwork for the upcoming decade to ensure the national energy balance becomes more diversified and more sustainable.

Based on the Directive 2009/28/EC of the European Parliament and of the Council of 23 August 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, Lithuania is obliged to reach a total share of 23% of energy from renewable sources in gross final consumption of energy by 2020.

Following national energy policy strategies and international commitments, the Law on Renewable Energy, transposing the Directive 2009/28/EC, established minimum rates for the renewable energy share to be reached by 2020 in each specific sector, and in particular – at least 10% of gross final energy consumption in the transport sector, at least 20% in the electricity sector, and at least 60% in district heating and 80% in household heating.

With regard to the above mentioned objectives, strategic guidelines aim at reaching up to 17.4 % of renewable energy share in final energy consumption during 2013 – 2014. Statistics shows that growth of renewable energy is in line with strategic guidelines and even more successful than expected, thus in 2012 it was 21.1% of renewable energy in final energy consumption. In the last several years, the use of renewable energy was growing in all sectors. The growth in the electricity sector was mainly determined by installed - new wind power plants, in the heat sector – new biofuel boilers and in the transport sector - mandatory requirements for fuel blending.

In 2013, the total electricity demand of 11,344 TWh was fulfilled by 4,398 TWh of local electricity generation (exported 0.66 TWh) and rest of electricity demand was fulfilled by 7,606 TWh of imported electricity. The final electricity consumption was 9,645 TWh. While the biggest stake of local electricity generation in Lithuania depends on imported fossil fuels that equals approximately 66% of local generation, the share of renewable energy sources is also constantly increasing and in 2013 covered up to 15% consumed electricity or approx. one third of total local electricity generation (excluding electricity generated by the Kruonis HPSP). The major part of electricity from renewable energy sources is produced by hydro power plants and wind power plants.

It may be well declared that the biggest potential of renewable energy development in the Lithuanian electricity sector lies with

biomass and wind energy. It is expected that electricity generation using biomass could be increased over four times by 2020, comparing to the level of installed generation capacities in 2011. However, the fastest market expansion up to now has still been focused on wind energy facilities, given the established support schemes and private business initiatives. At the end of 2013 there were approximately 280 MW of total installed capacity of wind power plants in Lithuania. Taking into account that promotion quota for wind power plants (500 MW of installed capacity) is already given to producers through quota auctions, thus it is well expected to increase this stake significantly up to 500 MW in a couple of years.

Under the Lithuanian legislation currently in force, only the development of small hydro power plants is legitimate, as specific environmental safety regime is established due to the ecosystems of the larger rivers. Currently Kaunas HPP of 100.8 MW installed capacity and smaller hydro power plants with capacity of 27 MW are operated in Lithuania. Irrespective of the said restraints reconstruction of older generation facilities and development of new projects are expected to trigger a slight increase of the hydro energy share by 2020.

In the heating sector the share of biofuels equaled approximately 35% of the fuel balance for heat production in 2012, compared to the majority of the remaining share left for fossil fuels and small share of other fuels. However, regulatory and business initiatives aim at reallocation of these shares: targeting for up to 45% of renewable energy sources in fuel balance for heat production. Especially it is aimed to increase amount of renewable energy sources in the district heating sector from 28% in 2012 to 70% in 2020. Given the absolute majority of the current renewable share is covered using biomass fired power plants, including wood and wood-waste, agricultural produce waste and biogas, the usage of biomass for heat energy generation could be well developed by increased exploitation of wood lumber waste, short rotation sprouts, straw, utility waste and biodegrading waste.

In the transport sector the share of renewable energy reached up to 4.8% in final energy consumption for transport in 2012 (mainly by blending bio-fuels and small share of electricity usage in public transport). The main raw materials used for bio-fuels is rape and grain crops.

In 2012 there were 2 GWh of solar energy generated and supplied to the grid (in 2011 – 76 MWh). The installed capacity of solar power plants increased up to 60 MW in 2013, while in 2012 the capacity was only 7.7 MW of operating solar power plants. Such an explosive growth occurred due to regulatory loopholes and high feed-in tariffs. Therefore, in 2013 certain regulatory changes were made, which basically have stopped further uncontrolled expansion of solar power plants.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Following Article 2(a) of the Directive 2009/28/EC, the Law on Renewable Energy provides the definition of renewable energy sources covering wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.

Moreover the Lithuanian law extends the primary concept of renewable energy sources, thus covering "any other renewable non-fossil energy sources, exploitation of which is technologically feasible or will be feasible in the future". Such extended definition enables the energy policy decision makers to apply relevant legislation for the benefit of new technologies becoming available for commercial use of energy production.

However, despite the renewable energy definition in force, for the purposes of electricity generation, currently the limited scope of power plants does fall under the established support framework: wind, biomass and solar power plants, as well as hydro power plants not exceeding 10 MW of installed capacity may only apply for support schemes, including fixed price (feed-in tariff) and other related guarantees, secured by the State.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

In Lithuania the renewable energy sector is mainly regulated by the State, establishing general principles for development of renewable energy generation capacities, commercial activities of energy production and energy trading. Regulations of the renewable energy sector also include the framework for the promotion of energy from renewable sources, or the support schemes secured by the State for renewable energy companies.

The regulatory framework of the renewable energy sector in Lithuania is structured based on the Law on Renewable Energy (adopted in 2011 as further amended), which transposes the Directive 2009/28/EC into the national law, as well as on other laws adopted by Parliament and promulgated by the President.

Under the current legislative framework, the following acts adopted by the Parliament do form a core legal background for renewable energy in Lithuania:

- The Law on Renewable Energy (adopted on 12 May 2011 as further amended) establishes legal background for public management, regulation, supervision and control of the renewable energy sector, as well as the basic principles for commercial activities in the renewable energy sector. The Law aims at sustainable development in the use of renewable energy sources, promotion of new energy generation technologies, and increased consumption of energy from renewable sources. The Law structures general national framework, i.e., schemes and legal instruments, for support of renewable energy;

- The Law on Implementation of the Law on Amendments and Supplement to the Law on Renewable Energy adopted on 17 January 2013. The key objective of this law is to review and slow down the uncontrolled expansion of small capacity solar power plants that occurred due to regulatory loopholes and extremely high feed-in tariffs during 2012. This law aims at changing the validity period of certain issued permits to develop electricity generation capacities for solar power plants, feed-in tariff application rules, as well as respective rights and obligations of developers active in the solar energy sector;

- The National Energy Independence Strategy, approved by the Parliament on 26 June 2012, sets key objectives for the Lithuanian energy sector for the period leading up to 2020 and outlining the vision of the energy sector up until 2050. As a task for development of the national energy sector, the Strategy *inter alia* targets an increase of the share of renewable energy sources in final gross consumption of energy;

- The Law on Energy (new wording adopted in December 2011, as further amended) establishes objectives of the State energy sector regulation, including promotion of the use of local and renewable energy sources as one of the principal objectives. The competence of the Government, as well as the competence of other public authorities acting within the energy sector is established;

- The Law on Electricity (new wording adopted in January 2012, as further amended) establishes the principle of public service obligations in the electricity sector related to the public safety, environmental safety, diversification of energy sources, as well as renewable energy generation; and

- The Law on Heat Sector (new wording adopted in 1 January 2008 as further amended) establishes the principle of promotion for usage of local fuel, bio-fuels and renewable energy sources for the heat energy generation. It is stated that the Government and local municipalities shall ensure support for take-off (purchase guarantee) of the heat energy produced using renewable energy sources, waste combustion and geothermal energy. Such take-offs are determined as a public service obligation.

Basic provisions established in the laws are further elaborated in a more detailed procedural level by the secondary legislation acts adopted by the Government, the Ministry of Energy, the National Control Commission for Prices and Energy (National Regulatory Authority), or other competent public authorities.

By April 2014 the core secondary legislation acts establishing the legal background for renewable energy are as follows:

- The National Strategy for the Development of Renewable Energy Sector (adopted by the Government in 2010) defines strategic energy policy objectives with regard to increased use of energy for renewable sources. The Strategy also establishes targeted annual rates of renewable energy share in final gross consumption of energy in electricity, district heating and the transport sector. The Strategy is considered for update following the relevant provisions of the Law on Renewable Energy;

- The Regulation on the Promotion of the Use of Renewable Energy Sources for the Production of Energy (adopted by the Government in July 2012) regulates in detail the practical implementation of the renewable energy support schemes (mechanisms) set under the Law on Renewable Energy and therefore establishes general criteria, requirements, procedures and conditions for energy producers intending to apply for support schemes designed to promote the use of renewable energy sources;

- The Resolution on the Approval of Support Quotas and Auction Zones for the Use of Renewable Energy Sources for Production of Electricity (adopted by the Government in July 2012) establishes maximum support quotas for wind power, solar power, hydropower, and for biomass – applied as a cap limit for possible application of support schemes for the use of renewable energy sources for production of electricity. This Resolution also defines the auction zones for allocation of respective support quotas among potential investors to renewable energy sector;

- The Resolution on Provision of Public Service Obligations in the Electricity Sector (adopted by the Government in 2012 as further amended) sets a complete list of activities in the electricity sector determined as the public service obligations, including electricity generation using renewable energy sources;

- The Regulation on Administration of Funds of Public Service Obligations in the Electricity Sector (adopted by the Government in 2012, as further amended) establishes the legal principles and procedures for the administration, collection and payment of funds of public service obligations, including payment of funds

(as feed-in tariff) for electricity produced using renewable energy sources;

- The Regulation on Reimbursement of Costs Related to Solar Power Plant Project Development (adopted by the Government in 2013, as further amended) establishes the procedures for costs reimbursement for solar power plants developers who were affected by regulatory amendments which slowed down the uncontrolled expansion of small capacity solar power plants;

- The Rules of Trade in Electricity (new wording adopted by the Ministry of Energy in June 2012) establish the principles and procedures for trade in electricity in the wholesale market, including bilateral contracts, power exchange, balancing services and power reserve capacities;

- The Regulation on Connection to the Power Grid of the Energy Objects of Electricity Consumers and Producers (adopted by the Ministry of Energy in 2012) establishes procedural requirements for connection of power plants and other electrical facilities to the existing power grids operated by the transmission or distribution system operators;

- The Technical Rules of Connection of Wind Power Plants to the Electric Power System of Lithuania (adopted by the Ministry of Economy in 2004) establish specific technical requirements for connection of the wind power plants to the existing power grids;

- The Rules of Issuance of Permits for Activities in the Electricity Sector (adopted by the Ministry of Energy in 2013, as further amended) establish procedural requirements concerning application for and issuance of permits for activities in the electricity sector, including development of power plants and production of electricity;

- The Resolutions adopted by the National Control Commission for Prices and Energy on establishment of the State regulated feed-in tariffs for electricity generated using renewable energy sources. Starting from 1 February 2013 a quarterly setting of the feed-in tariffs substituted the previous annual regulatory practice;

- The Rules of Auctions for Allocation of Support Quotas (adopted by the National Control Commission for Prices and Energy in 2011, as further amended) establish principles and detailed procedural requirements for competitive and transparent allocation of support quotas for development of renewable energy capacities with guaranteed support schemes;

- The Rules of Financing the Development of the Bio-fuels Production (adopted by the Ministry of Agriculture in 2008, as further amended) establish a support scheme for bio-fuel producers from the rape and grain crops; and

- The Regulation on Conditions and Rules for Submission and Use of Security for the Performance of Obligations of Producers of Energy from Renewable Resources (adopted by the Ministry of Energy in February 2013, as further amended) establishes rules and conditions for submission and use of security for the performance of obligations undertaken by developers of electricity generation capacities in solar power plants not exceeding 30 kW of installed capacity.

4. What are the principal regulatory bodies in the renewable energy sector?

The principle State authorities, performing the functions of public regulation, control and supervision of activities within the energy sector, including their competences, rights and obligations, are designated by the Law on Energy and other legal acts as described in detail hereinabove. Regulatory competencies within the renewable energy sector are further specified in the Law on Renewable Energy.

The principal regulatory bodies active in the renewable energy sector in Lithuania are as follows:

- *Government* – forms the energy policy of the State; submits the draft National Energy Independence Strategy for consideration and adoption by Parliament; adopts the National Program for Development of Renewable Energy Sources; has a right to adopt the principles for establishment of the State regulated energy prices; establishes terms and conditions for application of renewable support schemes; regulates provision of public service obligations etc.;

- *Ministry of Energy* – implements the national energy policy tasks; ensures international cooperation in the field of energy policy; drafts and reviews the National Energy Independence Strategy; establishes the requirements for connection of power plants to the existing electricity grids; adopts secondary legislation acts for electricity and heat energy sectors; issues permits for activities in the energy sector (except for independent supply of electricity); controls implementation of public service obligations, including trade in electricity produced from renewable energy sources, etc.;

- *Ministry of Environment* – makes principal decisions regarding environmental protection, environmental impact assessment for construction of power plants; participates in preparation of renewable energy sources programs, etc.;

- *Ministry of Transport* – drafts the programs and implements the measures for effective usage of energy resources in the transport sector, etc.;

- *Ministry of Agriculture* – is responsible for the development of production of flammable liquid products produced from biomass; promotes cultivation of plants used for production of biofuel, bio-fuels for transport and bio-oils; prepares programs for promotion of and support for agriculture sector in usage of bio-fuels and bio-oils, etc.;

- *National Control Commission for Prices and Energy* – establishes the methodologies for calculation of the State regulated energy prices; establishes the price caps for the State regulated energy prices; establishes the connection fees to the existing power grids; establishes the regulated prices (feed-in tariffs and maximum tariffs for capacity auctions) for electricity from renewable energy sources; adopts the rules of and announces auctions for allocation of support quotas for development of renewable energy capacities with guaranteed support schemes; issues licenses for activities in the energy sector; controls effective unbundling and non-discriminatory activities of energy companies, etc.;

- *State Energy Inspectorate under the Ministry of Energy* – issues the certificates for technical exploitation of the energy objects, including power plants; controls technical safety of energy generation facilities; performs official inspections of energy objects, etc.;and

- *Local Municipalities* – within their competence established by laws regulate supply of heat energy to the end consumers, etc.

5. What are the main permits/licenses required for renewable energy projects?

The following permits are required for electricity generation issued by the Ministry of Energy:

- Permit for development of electricity generation capacities - required in case new power units are intended for construction, or any extension of the existing capacities is planned. For renewable energy plants, developers to whom promotion quota and feed-in tariff apply, the permit for development of electricity generation capacities is issued after winning the quota auction and allows to start to develop project for 24 months with some possible extensions;

- Permit for generation of electricity - required in each case for commercial activities related to the generation of electricity. From a renewable energy promotion point of view, the generation permit is crucial as feed-in tariff shall be paid for 12 years from the issue of the generation permit.

The aforementioned permits are not required if electricity producer with installed capacity up to 10 kW produce electricity only for its own needs and is not planning to trade it or sell surplus electricity for feed-in tariff.

Other types renewable energy projects may require different permits/licenses.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

The tax advantages in Lithuania may be designated for certain groups of taxpayers, also including energy generation companies, solely on the basis of a specific law establishing certain tax as adopted by the Parliament and promulgated by the President.

Under the Lithuanian legislation currently in force, the specific tax advantages for renewable energy generation are established under the Law on Excise (adopted in 2001, as further amended). The law provides that electricity generated using renewable energy sources is free from excise tax. This principle includes both domestically produced and imported electricity. Further, the Law on Excise indicates that dehydrated ethyl alcohol for use in biofuels and/or its components and/or the production of biofuels is also free from excise tax. Moreover the same law provides excise tax exemption conditions for energy products made from biomass.

Additionally, renewable energy generation companies potentially may apply for general tax advantages depending on their activities or other criteria established by laws, though this does not presume for specific tax advantages related to usage of renewable energy sources.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Taking into account continual changes in the regulatory scheme during the past couple of years, several groups of the renewable electricity producers may be distinguished for the purposes of the purchase guarantee.

The first group are the producers to whom a permit to develop electricity generation capacities was issued not later than 23 May 2011 (i.e., before entrance into force of the Law on Renewable Energy), the power plants of which do not exceed 250 kW of installed capacity, and the producers, whose permit to produce electricity was issued from 24 May 2011 for power plants the installed capacity of which does not exceed 30 kW. All electricity generated by these producers and supplied to the electricity grid must be purchased by the energy company nominated by the Ministry of Energy or, if a producer requires, by public supplier for feed-in tariff set by the National Control Commission for Prices and Energy.

The other group are the remaining producers not indicated above (e.g., whose permit to produce electricity issued from 24 May 2011 for power plants which capacity is more than 30 kW and etc.). They have a right to sell all electricity generated and supplied to the electricity grid for the energy company nominated by the Ministry of Energy or energy suppliers for the market price and later to obtain the compensation for the remaining margin between the contract price and the feed-in tariff. That means that the purchase guarantee for these producers is optional and is implemented rather as ability to sell electricity in a centralized manner.

It should be specifically noted that following legislative amendments, which came into effect from 1 February 2013, producers with installed capacity up to 10 kW producing electricity for their own needs and producers with more than 10 kW of installed capacity are distinguished. Therefore, a purchase guarantee is ensured also for electricity consumers producing and using electricity from renewable energy sources for their own and/or household needs with installed capacity is up to 10 kW. It is ensured that the surplus electricity remaining from those producers' own and/or household needs (but not more than 50% of total electricity generation per year) shall be purchased by the public supplier in case the consumer fails to agree with any independent supplier or insists for purchase guarantee by the public supplier. The feed-in tariff for this electricity is set by the National Control Commission for Prices and Energy and ensured for no longer than 12 years period.

The costs incurred by the energy company nominated by the Ministry of Energy or public supplier due to the said purchase guarantee are designated as public service obligations and are being respectively evaluated each year while establishing the tariff for grid services. The price guarantees for renewable electricity generation is discussed in detail herein below.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The Law on Renewable Energy introduced fundamentally reviewed framework for the promotion of energy from renewable sources which was amended in the beginning of 2013. The support scheme applicable to electricity producers, operating wind, biomass and solar power plants, as well as hydro power plants not exceeding 10 MW of installed capacity, is generally based on fixed price guarantee (feed-in tariff), which may be applied under couple of regimes.

As for the first case, the feed-in tariffs are applied to renewable energy companies having valid permit for development of renewable power generation capacities or permit to produce electricity issued before adoption of the Law on Renewable Energy. This allows securing the fixed price guarantee for companies that have been already granted with respective support schemes before regulatory changes in 2011.

For the aforementioned companies maximum feed-in tariff which was applicable in 2011 applies (except for solar power plants - if producer had not applied for generation permit until 1 July 2013, in that case applies feed-in tariff valid on the day the generation permit is issued). Such feed-in tariffs for each group of supported renewable energy producers was established by the National Control Commission for Prices and Energy and shall remain in effect for a 12 year support period.

Until adoption of amendments of the Law on Renewable Energy which have come into effect from 1 February 2013 the feed-in tariffs were applied to all renewable energy companies, irrespective of the moment of granting the support scheme, i.e., before or after adoption of Law on Renewable Energy, that produce electricity in power plants not exceeding 30 kW of installed capacity. Since 1 February 2013 new permits to develop electricity generation capacities in power plants not exceeding 30 kW of installed capacity are no longer being issued, however producers already holding issued permits to develop electricity generation capacities in power plants not exceeding 30 kW of installed capacity are provided with the right to feed-in tariff.

Since 1 February 2013, electricity producers who produce and use electricity from renewable energy sources for their own and/or household needs with installed capacity up to 10 kW surplus electricity remaining from those producers' own and/or household needs (but not more than 50% of total electricity generation per year) shall be purchased for fixed feed-in tariff at the rate applicable on the day of electricity supplies to the grid.

For the second case, the feed-in tariff guarantee may be applied by new market entrants, as well as by renewable energy companies developing new power generation capacities or the ones without formerly granted support schemes. The quota auction (as well sometimes called capacity auction) model was introduced by the Law on Renewable Energy aimed at transparent allocation of limited capacity quota with secured support schemes and increase of competition among renewable energy companies.

The Law on Renewable Energy indicates the targeted capacities for generation of energy using renewable sources to be reached by 2020, and being determined as top quotas with the State guaranteed support instruments. These quotas are divided for each of renewable sources with biggest stake of 500 MW for wind power plants, 10 MW for solar power plants, 141 MW for hydro power plants and 105 MW for biomass power plants.

Renewable energy companies (until 31 January 2013 exceeding 30 kW of installed capacity and since 1 February 2013 exceeding 10 kW of installed capacity) may apply for capacity quotas with the State guaranteed support scheme through the auctions organized and announced by the national regulatory authority – the National Control Commission for Prices and Energy.

All perspective renewable energy developers participating in the auction are required to declare the proposal for a feed-in tariff which does not exceed the maximum feed-in tariff approved by the National Control Commission for Prices and Energy. The winning bidder is the one with the least feed-in tariff required.

Such auction model was established seeking to ensure transparent allocation of limited quotas with equal rights of participation to all renewable energy companies and also to ensure price competition between different technology suppliers. The feed-in tariff declared by the winning bidder is guaranteed unchanged by the State for 12-year support period.

The National Control Commission for Prices and Energy quarterly sets the rates of feed-in tariffs and maximum tariffs for capacity auctions. For 1 April 2014 – 30 June 2014 the surplus electricity feed-in tariffs, maximum tariffs and feed-in tariffs under prolonged development permits for the electricity produced using different type of renewable sources are set as follows:

- Hydro energy power plants up to 10 kW of installed capacity for surplus electricity – 0.27 LTL/kWh (approx. 0.0782 EUR/kWh); tariff for producers up to 30 kW of installed capacity – 0.24 LTL/kWh (approx. 0.0695 EUR/kWh); maximum tariffs for power plants from 10 kW up to 350 kW and from 350 kW up to 1000 kW of installed capacity – 0.24 LTL/kWh (approx. 0.0695 EUR/kWh); from 1000 kW of installed capacity – 0,22 LTL/kWh (approx. 0.064 EUR/kWh);

- Wind energy power plants – up to 10 kW of installed capacity for surplus electricity – 0.28 LTL/kWh (approx. 0,0811 EUR/kWh); tariff for producers up to 30 kW of installed capacity – 0.26 LTL/kWh (approx. 0.0753 EUR/kWh); maximum tariffs for power plants from 10 kW up to 350 kW of installed capacity – 0.26 LTL/kWh (approx. 0.0753 EUR/kWh); and from 350 kW of installed capacity – 0.22 LTL/kWh (approx. 0.0637 EUR/kWh);

- New biomass power plants – up to 10 kW of installed capacity for surplus electricity – 0.37 LTL/kWh (approx. 0.107 EUR/kWh); tariff for producers up to 30 kW of installed capacity – 0.32 LTL/kWh (approx. 0.093 EUR/kWh); maximum tariffs for power plants from 10 kW up to 350 kW and from 350 kW up to 5000 kW of installed capacity – 0.32 LTL/kWh (approx. 0.093 EUR/kWh); from 5.000 kW of installed capacity – 0.28 LTL/kWh (approx. 0.081 EUR/kWh);

- Reconstructed biomass power plants – up to 10 kW of installed capacity for surplus electricity – 0.32 LTL/kWh (approx. 0.093 EUR/kWh); tariff for producers up to 30 kW of installed capacity – 0.27 LTL/kWh (approx. 0.078 EUR/kWh); maximum tariffs for power plants from 10 kW up to 350 kW and from 350 kW up to 5.000 kW of installed capacity – 0.27 LTL/kWh (approx. 0.078 EUR/kWh); from 5.000 kW of installed capacity – 0.24 LTL/kWh (approx. 0.0695 EUR/kWh);

- Landfill biogas power plants up to 10 kW of installed capacity for surplus electricity – 0.40 LTL/kWh (approx. 0.116 EUR/kWh); tariff for producers up to 30 kW of installed capacity – 0.39 LTL/kWh (approx. 0,113 EUR/kWh); maximum tariffs for power plants from 10 kW up to 350 kW and from 350 kW up to 500 kW of installed capacity – 0.39 LTL/kWh (approx. 0.113 EUR/kWh); from 500 kW of installed capacity – 0.31 LTL/kWh (approx. 0.0898 EUR/kWh);

- Biogas (obtained by anaerobic method or otherwise processing biodegradable organic waste or substrates) power plants up to 10 kW of installed capacity for surplus electricity – 0.53 LTL/kWh (approx. 0.154 EUR/kWh); tariff for producers up to 30 kW of installed capacity – 0.48 LTL/kWh (approx. 0.139 EUR/kWh); maximum tariffs for power plants from 30 kW up to 350 kW and from 350 kW up to 500 kW of installed capacity – 0.48 LTL/kWh (approx. 0.139 EUR/kWh); from 500 kW up to 1.000 kW of installed capacity – 0.46 LTL/kWh (approx. 0.133 EUR/kWh); from 1.000 kW up to 2000 kW of installed capacity – 0.44 LTL/kWh (approx. 0.127 EUR/kWh); from 2.000 kW of installed capacity – 0.42 LTL/kWh (approx. 0.122 EUR/kWh) and

- Solar (photo) energy power plants – up to 10 kW of installed capacity: for surplus electricity 0.69 LTL/kWh (approx. 0.2 EUR/kWh) for power plants integrated into building and 0.54 LTL/kWh (approx. 0.156 EUR/kWh) for not integrated into building; tariff for producers up to 30 kW of installed capacity – 0.62 LTL/kWh (approx. 0.18 EUR/kWh) for power plants integrated into building and 0.49 LTL/kWh (approx. 0.142 EUR/kWh) for not integrated into building; maximum tariff for power plants integrated into building over 10 kW starts from 0.58 LTL/kWh (approx. 0.168 EUR/kWh) up to 0.62 LTL/kWh (approx. 0.18 EUR/kWh) and for power plants not integrated into building starts from 0.46 LTL/kWh (approx. 0.133 EUR/kWh) up to 0.49 LTL/kWh (approx. 0.142 EUR/kWh).

The auction model for allocation of capacity quotas and support scheme was introduced by the Law on Renewable Energy in 2011; however, in the beginning it was not developing very fast in practice. The very first auctions started in the end of 2012 and the peak thereon was in the first half of 2013.

A completely different situation appeared for solar power plants, the installed capacity of which does not exceed 30 kW, where expansion started grow uncontrollably. Since the adoption of the Law on Renewable Energy there has been introduced favorable conditions and high feed-in tariffs (especially for solar power plants) there were 4,710 permits to develop electricity generation capacities for solar power plants the installed capacity of which does not exceed 30 kW issued until 12 December 2012. As this growth was based on high feed-in tariffs this meant a dramatic future growth of electricity price for final electricity consumers.

In the beginning of 2013 amendments to the Law on Renewable Energy and the controversial Law on Implementation of Amendments and Supplement to the Law on Renewable Energy were adopted following unprecedented expedited Parliamentary procedures. Key provisions of these laws are those regarding changing the validity period of issued permits to develop electricity generation capacities for solar power plants and changing the fixed feed-in tariff. It is now therefore required that producers having the aforementioned permits must provide requests to issue generation permits (e.g., to finalize construction and installation of the power plant, and to prepare it for full operation) until 1 July 2013 (with possible extension for no longer than 7 month if more than 50% of project investments are made), while general rule applied before provided that permits to develop electricity generation capacities are valid for 24 months from their issue.

Most importantly it included clauses determining retroactive effect for feed-in tariffs, i.e., it has changed the rule, which ensured that feed-in tariff was fixed for producer at the day of issue of the permit to develop electricity generation capacities and will not be changed for 12 years since generation permit is obtained. It was determined that for producers who have provided requests to obtain permits to develop electricity generation capacities until 31 December 2012 and have obtained permits to produce electricity until 31 January 2013 for 12 years will apply feed-in tariffs which were applicable at the time of issue of the permits to develop electricity generation capacities. However for producers who have provided requests to obtain permits to develop electricity generation capacities until 31 December 2012 and have not obtained permits to produce electricity until 31 January 2013 for 12 years will apply feed-in tariffs, which will be applicable at the time of issue of the permits to produce electricity.

Taking into account that feed-in tariffs and maximum tariffs for solar power plants were significantly reduced in the beginning of 2013, it determined a negative reaction in the market as the aforementioned changes conditioned that feed-in tariff was retrospectively reduced for a large number of persons holding permits to develop electricity generation capacities in solar power plants which previously did possess higher guaranteed feed-in tariff. Disputes regarding such legislative changes and their practical implementation were initiated in court, although the initial kick-start rulings and outcomes are not favorable to producers.

It should be noted that the aforementioned regulation indicated that producers whose validity of the permit to develop generation capacities will not be prolonged (for additional up to 7 month from 1 July 2013) as well producers who will not apply for such prolongation shall have a right for reimbursement of direct losses due to development of the solar power plant. A special purpose commission was formed by the Ministry of Energy and special rules adopted for this procedure in order to deal with evaluation of on-going projects, the level of their actual development, possible prolongations of permits to develop generation capacities, and possible compensations for non-developed projects due to respective legal amendments.

In case the support schemes are not applied to the electricity generated using renewable energy sources, whether because of non-supported energy generation or exceeding the quotas established by the Government, such electricity must be traded under bilateral agreements or through the power exchange with no minimum price guarantees.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Lithuania ratified Kyoto Protocol to the United Nations Framework Convention on Climate Change on 3 Jan 2003 and it has entered into force on 16 Feb 2005. Up to now Lithuania has been successfully implementing the obligations imposed by the Kyoto Protocol.

As an EU member Lithuania participates in EU emissions trading system - system for trading greenhouse gas emission allowances. A greenhouse gas emission allowance trading is regulated by number of EU and national legislation. The Law on Financial Instruments for Climate Change Management adopted on 7 July 2009 by the Lithuanian Parliament is the main national law regulating the order of trading in greenhouse gas emission allowances and Kyoto units (i.e., assigned amount unit, emission reduction unit or certified emission reduction unit).

10. Do renewable energy based power plants have priority for connection to the grid?

In Lithuania the renewable energy based power plants do have a priority for connection to the electricity grid comparing to other power generation capacities. In other words the part of free capacities of the power grid is required to be reserved for renewable energy based power plants during the project development period which is generally equal to 24 months after issuance of the permit for development of renewable energy capacities and may be extended on case by case basis following legal terms and conditions in force.

Also due to technological specificities, namely the installed capacity of generation facility, the renewable energy based power plants potentially may be subject to less stringent construction planning and authorization regime, as it may significantly shorten the project preparation phase.

Under the Lithuanian legislation the grid operator is obliged to connect the energy producers or consumers after all necessary planning and authorization procedures are dully passed. The sole legitimate precondition for rejecting the connection application is technical inability criteria of the grid and energy system. The operators are required to issue design conditions, including technical requirements for connection to the grid, before the design procedure.

Renewable energy based power plants have a guaranteed discount for the grid connection fee equal to 60% of the total connection price for the power plants exceeding 350 kW and 80% for those not exceeding 350 kW. Previously cost-free connection of power plants not exceeding 30 kW of installed capacity was rejected from 1 February 2013 following recent amendments to the Law on Renewable Energy.

The connection fee discount is estimated on the basis of the contract price of the procured contractor for the connection works. The connection fee discount is covered by the grid operator and each year being reckoned into the energy tariffs as a public service obligation.

It has to be also emphasized that the abovementioned connection fee discount, as well as any other incentives for renewable energy generation, are applied solely for the said power plants falling within the scope of renewable energy support scheme.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

There is no preferential regime for local Lithuanian manufacturing of equipment and/or materials used in the construction of renewable energy based power plants. The majority of renewable energy generation technologies installed in Lithuania are imported together with supporting operation and other related devices.

There are no specific requirements or restrictions for using imported technologies or materials, given the safety and quality of relevant equipment or materials being approved under appropriate EU or international certification.

Additionally, the environmental safety of the intended power plant construction is monitored by the Ministry of Environment through the environmental impact assessment procedures, as well as technical safety is inspected before start of exploitation of the power plants and during its entire life-cycle by the State Energy Inspectorate under the Ministry of Energy.

12. What are the other incentives available to renewable energy generation companies?

Under Lithuanian legislation currently in force, the grid operators are obliged to ensure the priority transport of electricity generated using the renewable energy sources through the power grids in case the capacities of the latter are limited.

In addition to that, the abovementioned renewable energy based power plants that do fall under the renewable energy support scheme are not required for ensuring the reserve capacities or energy generation

balancing services. During the entire period of support scheme applied the responsibilities for reserve and balancing are being undertaken by the transmission system operator.

It could be also emphasized that the EU support mechanisms could be applied irrespective of national schemes in force. At the moment of preparation of this publication (April 2014), the EU structural funds promotion for 2014-2020 period is being planned and the National Renewable Energy Sources Development Program is under consideration for adoption. Taking into account the above-mentioned process promotion for additional installation of new electricity generation facilities using biofuel or old electricity generation facilities' using fossil fuel conversion into biofuel facilities in the biggest cities is expected. Thus it is planned that aforementioned biofuel cogeneration power plants projects could be developed and funded using EU structural funds support. Additionally it may be expected EU structural funds support for other types of renewable energy projects to be provided after support by EU structural funds will be finished to plan.

Please note that granting of the EU financing for infrastructure investments to the renewable energy sector in Lithuania may preclude in certain cases from applicability of the feed-in tariff and the purchase guarantee, as doubled financing of renewable energy projects is not allowed under the Lithuanian legislation.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

In 2013 there were 4,398 TWh of electricity generated in Lithuania. The share of electricity generated using renewable energy sources was equal to a bit more than one third of total local generation of electricity in 2013. There were 11.73% (0.516 TWh) of whole generated electricity by hydro power plants (not taking into account electricity generated by the Kruonis Pumped Storage Plant), 13.64% (0.6 TWh) by wind power plants, 5.98% (0.263 TWh) by biofuel power plants, 1.02% (0.045 TWh) by solar power plants and 1.73% (0.076 TWh) waste incineration power plants.

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GENERAL

1. What is the nature and importance of renewable energy in your country?

The importance of renewable energy in the Republic of Macedonia is expressed through the fact that the promotion of the consumption of Renewable Energy Sources is set out as one of the key targets that must be ensured by the Energy Law. According to this Law, the Government of the Republic of Macedonia will create a policy of consumption of the Renewable Energy Sources by establishing a Strategy on Renewable Energy Sources. This Strategy is proposed by the Ministry of Economy and enacted by the Government of Republic Macedonia each 5 years; and it refers to the period of the next 10 years. Drafting this Strategy on Renewable Energy Sources is financed by the State.

For the purpose of the implementation of the Strategy for Renewable Energy Sources the Government of the Republic of Macedonia, upon the proposal of the Ministry, passes an action plan for the renewable energy for a period of ten years. This Action plan defines the action for improvement of the consumption of the renewable energy sources.

Every two years the Ministry of the economy prepares a Report on the implementation of the action plan for Renewable Energy Sources in the past period. If, based on the findings of the report, it is found that the planned annual dynamics have not been realized, the Ministry has to propose to the Government of the Republic of Macedonia additional actions and adequate modifications to the Action plan.

The Government of the Republic of Macedonia passes a decision which provides the goals and the annual dynamics of the growth of the share of the energy from the renewable sources in the final energy consumption, in accordance with the Action plan for the Renewable Energy Sources and the obligations undertaken by the Republic of Macedonia upon the ratified international agreements.

The Energy Agency is the body which provides support to the Ministry in the preparation of the Strategy on the Renewable Energy Sources and the Action plan for renewable energy sources.

2. What is the definition and coverage of renewable energy under the relevant legislation?

The matter of the Renewable Energy Sources is covered by the Energy Law in a special chapter titled "Renewable energy sources".

Definition: Renewable Energy Sources are non-fossil energy sources, i.e., hydropower, wind, solar, aero thermal, hydrothermal and geothermal energy, biomass, landfill gas, biogas and gas obtained from sewage treatment plants and biomass.

REGULATIONS

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The renewable energy sector is regulated within the framework of the integral energy sector. The principal provisions and regulations could be found in the Energy Law.

The implementation of the Law is ensured by the regulation which includes: Rulebook for Renewable energy sources; Rulebook on the guarantee of origin of the electricity produced from Renewable Energy Sources; Rulebook for acquiring of status of preferential/privileged producer of electricity from Renewable Energy Sources; Regulation for connection for the national greed; Manual for construction and operation of wind mills and the Rulebook on the method and procedure for establishing and approving the use of feed-in tariffs for electricity produced from biomass, small hydro power plants, wind power plants and photovoltaic systems.

4. What are the principal regulatory bodies in the renewable energy sector?

The principal regulatory bodies in the Renewable Energy Sector are the Government, the Ministry of Economy (Energy Department), the Energy Agency and the Energy Regulatory Commission.

5. What are the main permits/licenses required for renewable energy projects?

The main permits/licenses required for production of electricity from renewable energy sources are: License for the production of electric energy and Certificate for privileged producer of electric energy from renewable energy sources.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

According to the Energy law it is predicted that the tax advantages should present one of the measures for supporting the implementation of the Strategy on Renewable Energy Sources, and, the preferential VAT tax rate of 5% is determined (apart to the general one of 18%) for trading and importing thermal solar systems and their components. No other tax advantages are determined so far in respective legislation.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Yes, the operator of electricity, which is a state owned company, is obliged to purchase the total quantity of electricity generated by Renewable Energy Sources which is delivered by privileged producers.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Yes, in Macedonia there are guaranteed feed-in tariffs for electricity production from Renewable Energy Sources determined by the Regulatory Commission for Energy.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

The Kyoto Protocol was ratified by the Parliament of the Republic Macedonia in February 2004 and the ratification was deposited to the Secretary-General of the UN on 18 November 2004. The protocol entered into force with respect to Macedonia on 16 February 2005. In 2007 the Macedonian government adopted a National strategy concerning the Clean Development Mechanism pursuant to the Kyoto protocol with the goal of encouraging domestic companies to participate in the carbon credits market. At the same time, the Parliament passed an amendment to the Law on environment which gave the Ministry of environment additional legal instruments to further promote carbon trading and assist the interested parties in finding foreign partners.

10. Do renewable energy based power plants have priority for connection to the grid?

The Energy Regulatory Commission of the Republic of Macedonia may requested that the relevant Operator cover the expenses for connection to the grid of the producers that require it, and the latter will be able to return these costs through the price of services.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

No, there is no incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants.

12. What are the other incentives available to renewable energy generation companies?

Pursuant to the Energy Law it is set out that the certain measures for supporting the implementation of the Strategy on Renewable Energy Sources could apply, especially: investment financial support, tax advantages, guaranteed purchase of the total quantity of electricity delivered by the privileged producer and an obligatory sell of the mixture of fossil fuels and bio fuels, issuance of guarantees of origin of the electricity produced from Renewable Energy Sources, Feed-in tariffs for the electricity generated by Renewable Energy Sources, and increase of the prices which consumers are paying for consumption of the Renewable Energy Sources .

The Energy Law also provides that the implementation of these measures could be financially supported by the State.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

According to the State Statistical Office data, in our country the actual production of renewable energy covers hydro energy, solar energy, geothermal energy, biomass and biofuel. The total generation of electricity based on renewable energy sources in 2012 decreased by 16.31% compared to 2011.

According to the official statistics for 2012, the percentage of electricity generated from renewable sources in the total electricity production is 16.7%, compared to 2011, when it added up to 20.9%. Hydroelectricity participates with 5.9% and Biomass with 12.47% in the total generation of electricity in Macedonia. Geothermal heat accounts for 0.7% of the total electricity production, while participation of biofuel and solar energy in the total generation of electricity for 2012 is minimal.

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GENERAL

1. What is the nature and importance of renewable energy in your country?

There is no doubt that Mexico's energy source depends, almost completely on petroleum, which also means that it is a petroleum based economy.

Notwithstanding, Mexico has a huge potential for the development of renewable energy due to its geographic location and landscape. For that reason, over the next ten years the Mexican Government expressed its intent to reduce its dependence on hydrocarbons as a primary source of energy and has established some general guidelines and specific targets that promote and regulate the use of these alternative sources. The Law for the Use of Renewable Energy and the Financing of Energy Transition (*Ley para el Aprovechamiento de Energías Renovables y el Financiamiento de la Transición Energética*, the "Renewable Energy Law"),[1] provides for specific goals regarding the decrease in the use of fossil fuels for power generation: By 2024, not more than 65% of the country´s total electrical output shall be obtained from fossil fuels, which percentages shall be reduced to 60% by 2035 and to 50% by 2050.

In the last ten years Mexico has achieved important developments in the field of renewable energy sources, especially in the sector of wind power, geothermal and hydropower plants.

In December 2013, the Federal Congress approved amendments to the Political Constitution of the United Mexican States in energy matters (the "Energy Reform"). The Energy Reform amends Articles 25, 27 and 28 of the Federal Constitution. In very general terms, the main purpose of the Energy Reform is to allow private investment in virtually all areas of the energy sector, including the power sector. The specific terms, conditions and requirements under which such activities will be undertaken will be established in the secondary legislation that the Federal Congress will need to approve in order to implement the constitutional changes. At this point, the secondary legislation bill that would implement the Energy Reform has not been submitted to Congress.

2. What is the definition and coverage of renewable energy under the relevant legislation?

For purposes of the Renewable Energy Law, renewable energy is that which the source lies in natural events, processes or materials that may be transformed into energy that can be used by man, that are naturally renewed and that are permanently or periodically available.

Under the Renewable Energy Law, sources of renewable energy include the following[2]:

- Wind;
- Solar radiation;
- Water movement in natural or artificial vessels;

[1] Published in the Federal Official Gazette on 28 November 2008, as amended.

[2] Article 3 Paragraph II of the Renewable Energy Law.

- Ocean in all its aspects: motor, thermal, tidal, currents and salt concentration;
- Geothermal deposits;
- Bio-energy, (as defined by the Law for the Promotion and Development of Bioenergetics); and
- Others, as further determined by the Ministry of Energy, so long as they comply with the first paragraph of this section.

The following sources of electricity are excluded from coverage by Renewable Energy Law:

- Radioactive minerals used to produce nuclear energy;
- Hydraulic energy projects with the power of generating more than 30 megawatts, except:
  - In the case of a dam with a capacity of less than 50,000 cubic meters of water or a dam with a surface of less than 1 hectare and that does not exceed such capacity of storage. These dams should be located in the property on which the generator has a real right;
  - In the case of existing dams, even with more capacity than the aforementioned, that could be eligible to generate electricity.
- The incineration or thermal treatment of industrial waste, and
- Use of landfills that do not comply with the environmental regulation.

REGULATIONS

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

Prior to the approval and issuance of the secondary legislation that would implement the Energy Reform, the Mexican legal system currently regulates renewable energy from two perspectives: (i) the generation of electricity from renewable resources; and (ii) the production of bio-fuels.

I. Power generation.

The framework associated with the generation of power through renewable sources is not regulated by a specific law, but rather by the Public Power Utility Law (*Ley del Servicio Público de Energía Eléctrica*, hereinafter, the "Power Law")[3] which regulates the general electricity sector, regardless of the source used to generate power.

As further discussed below, the Energy Reform does not contemplate renewable energy regulations specifically, but it modifies the power generation sector, which is expected to have important implications (directly or indirectly) on renewable energy.

As of today, the framework associated with the generation of power through renewable sources in Mexico is as follows:

- Art. 25, Paragraph 6 of Art. 27 (with respect to the electricity transmission and distribution restrictions), and the 4th Paragraph of Art. 28 (with respect to the activities which are not considered a monopoly of the State in these matters) of the Constitution;

[3] Published in the Federal Official Gazette on 22 December 1975, as amended.

- The Power Law;
- Power Law Regulations (*Reglamento de la Ley del Servicio Público de Energía Eléctrica*, hereinafter, the "Power Regulations")[4];
- Directives and Form of Contracts Issued and Approved by the Regulatory Energy Commission (*Comisión Reguladora de Energía,* the "CRE"*)* with respect to Interconnection, Wheeling, Transportation and Renewable Energies;
- Law for the Use of Renewable Energy and the Financing of Energy Transition (*Ley para el Aprovechamiento de Energías Renovables y el Financiamiento de la Transición Energética*)[5];
- Regulations of Law for the Use of Renewable Energy and the Financing of Energy Transition (*Reglamento de la Ley para el Aprovechamiento de Energías Renovables y el Financiamiento de la Transición Energética*)[6];
- Law for the Sustainable Use of Energy (*Ley para el Aprovechamiento Sustentable de la Energía*)[7];
- Regulations for the Law for the Sustainable Use of Energy (*Reglamento de la Ley para el Aprovechamiento Sustentable de la Energía*)[8];
- Regulations for the National Water Law (*Reglamento de la Ley de Aguas Nacionales,* hereinafter, the "Water Regulations"*)*[9];

Generating power through renewable sources has created challenges that the Mexican laws, regulations, authorities, and other participants need to face.

As a result of the Energy Reform, the electric market in Mexico faces a profound and complex restructure in order to enhance the private investment in the power sector.

Prior to the Energy Reform, the generation, transmission and distribution of electricity, to the extent it was undertaken for public service purposes, was reserved to the Mexican State through the governmental utility company, Federal Electricity Commission (*Comisión Federal de Electricidad – "CFE"*), which is vertically integrated.

Moreover, private investment in the electricity field is allowed only under certain legal conditions by means of exceptions in the secondary legislation of what is not considered to be "public service", which include the following:

- Independent power production ("IPP") which power shall be sold to CFE;
- Co-generation[10];
- Self-supply projects;
- Importation and/or exportation of power; and
- Small production (under 30 MW).[11]

4 Published in the Federal Official Gazette on 31May 1993, as amended.

5 Published in the Federal Official Gazette on 28 November 2008, as amended.

6 Published in the Federal Official Gazette on 2 September 2009, as amended.

7 Published in the Federal Official Gazette on 28 November 2008, as amended.

8 Published in the Federal Official Gazette on 11 September 2009, as amended.

9 Published in the Federal Official Gazette on 12 January 1994, as amended.

10 It has to be noted that pursuant to Renewable Energy Law, cogeneration projects may take advantage of the benefits and instruments granted to renewable energy projects, provided that the cogeneration systems are recognized as "Efficient Cogeneration" in terms of the CRE guidelines.

11 Arts. 3 and 36 of the Power Law. The excess of energy produced by these power generation projects, if any, shall be sold to CFE (except section d) above), as provided by subsections III and IV of the abovementioned article.

All the referred schemes require a permit that has to be issued by the Energy Regulatory Commission (*Comisión Reguladora de Energía* "CRE").

The Energy Reform eliminates the prohibition for private companies to carry out power generation activities even if they are undertaken for public service purposes. While there are many aspects still unclear as to how this will work in practice that should be clarified by the secondary legislation of the Energy Reform, private companies should be able to generate electricity and sell it freely in the market to third parties. Thus, the above-mentioned legal schemes available as of today would become obsolete, at least with respect to power generation for public service purposes.

Nonetheless, electricity transmission and distribution remain as an activity that shall be exclusively provided by the Mexican government to the extent it is undertaken for public service purposes. Under the Energy Reform, the operation of the CFE's existing transmission and distribution infrastructure would be carried out by the National Center for Energy Control (*Centro Nacional de Control de Energía*) ("CENACE") as a public instrumentality independent from CFE,[12] which shall be responsible for the operation and control of the National Electric System, operating the wholesale electricity market, as well as the open and not unduly discriminatory access to transmission and distribution infrastructure.

Notwithstanding the foregoing, below is a brief summary of the current legal schemes still legally available for power generation purposes. Although co-generation and self-supply projects have provided cheaper and reliable electricity output that allows for greater expansion of other private investment projects, such projects require transparency of public power tariffs and subsidies, open access to different fuel resources and investments and capital infusion which increases the financial projections of investors not related to the power industry, furthermore, it is necessary to implement long term power purchase agreements with off-takers with acceptable financial soundness and strength, most of which are already engaged in private generation projects to satisfy their needs.

The ability to import and export power has been limited because of the lack of efficient and operative interconnection points between the transmission grids of the U.S. and Mexico.

In addition to the general provisions of the Power Law, the intermittent nature of energy generated from renewable resources calls for the establishment of various complementary instruments, such as an interconnection and transmission agreement templates, both specific for energy generated from renewable sources.[13]

Among other things, these instruments allow for the compensation of monthly energy surpluses and shortages that are associated with renewable sources, by providing for yearly cutoff dates. The interconnection agreement gives an option to the generator of energy to store excess energy produced and sell such energy to CFE within the following 12 months.

[12] Currently, CENACE is part of CFE and only undertakes energy dispatching activities.

[13] CRE Resolution No. RES/147/2001, published in the Federal Official Gazette on 19 September 2001.

The interconnection agreement also keeps track of the median capacity supplied by the generator during peak hours, which will be taken into account when calculating the billable demand.

Another complementary instrument related to the evacuation and distribution of energy is the open-season proceeding, which main purpose is to secure the necessary infrastructure for the transmission and evacuation of the energy generated by private companies under a fixed price payable to CFE. Private parties are allowed to conduct open season proceedings and finance and construct transmission infrastructure to the extent is used exclusively to satisfy the needs of their projects. If CFE participates in the open season proceeding, private participants must guarantee CFE the payment of the corresponding infrastructure. Upon the firm commitment by the open season participants to pay CFE for the relevant transmission line and the capacity associated thereto, the latter would construct such infrastructure. However, this has proven to be inefficient in practice because of the uncertainty involved in the construction proceeding, as it has to be carried out by CFE following the public procurement rules.

The Renewable Energy Law foresees three main instruments aimed at promoting the use and investment in projects for the generation of energy from renewable resources:

i) *The National Strategy for the Transition and Sustainable Use of Energy* (*Estrategia Nacional para la Transición Energética y el Aprovechamiento Sustentable de la Energía*) aimed at promoting the use of clean technology; the use of and investment in renewable energy projects, as well as reducing the country's dependency on hydrocarbons.

ii) *The Special Program for the Use of Renewable Energy* (*Programa Especial para el Aprovechamiento de Energías Renovables*), which sets forth elements of public policy, lists goals and describes actions to be taken on the subject.

iii) *The Fund for the Transition and Sustainable Use of Energy* (*Fondo para la Transición Energética y el Aprovechamiento Sustentable de la* Energía, the "Fund").

In accordance with the Water Regulations, no concession will be required for the exploitation, operation or use of water, in the case of hydraulic energy generation, which capacity does not exceed 30 megawatts[14].

*II. Biofuel production***.**

Enacted in February of 2008, the Law for the Development and Promotion of Biofuels (*Ley de Promoción y Desarrollo de los Bioenergéticos*) is aimed at fostering the production of ethanol and other biofuels as a means to reduce Mexico's dependence on fossil fuels. It also promotes cleaner and environmentally friendly fuels and develops Mexico's rural economy, specifically through the participation of the economy's agriculture sector. The law emphasizes the importance of research and development as well as technology transfer related to biofuels, tax exemptions and subsidies to organizations.

The law also highlights the importance of preventing risks to national food requirements, and limits the issuance of biofuel production permits to those applicants whose activity may create such a risk. In addition to fines that may exceed US $300,000 to those that produce biofuels without the corresponding permits, the law foresees the possibility of total or partial closure of the production facilities.

[14] Art. 120, paragraph I of the Water Regulations.

The Mexican Government has imposed on Petroleos Mexicanos *("PEMEX")* the obligation of elaborating programs of progressive substitution of hydrocarbons by renewable energies and allocating a certain percentage of its incomes to such purpose.

4. What are the principal regulatory bodies in the renewable energy sector?

It is expected that the secondary legislation of the Energy Reform changes the authority scope of most public entities of the energy sector and to create other entities in charge of activities related to the energy sector in general and renewable energies in particular. As of today, the main regulatory bodies in the renewable energy sector are the following:

- *Federal Ministry of Energy* (*Secretaría de Energía*). In charge of crafting public policy for a better use of renewable energy and of issuing permits for the production, transportation, storage and distribution of biofuels.

- *Energy Regulatory Commission* (*Comisión Reguladora de Energía* "CRE"). Among other things, the CRE is in charge of:

  - Issuing standards, directives, methodology and other provisions of an administrative and/or technical nature that regulate the generation of energy from renewable resources;

  - Determining rates to be paid for energy generated, supplied and transmitted;

  - Issuing methodology to determine capacity of generation and contribution to the National Electricity System by each of the technologies;

  - Issuing general rules for interconnection to the National Electricity System; and

  - Issuing permits for the generation, transmission and distribution of electricity in the modalities available for private parties.

- *National Commission for the Efficient Use of Energy* (*Comisión Nacional para el Uso Eficiente de la Energía*). The authority of this entity includes:

  - Issuing administrative provisions on matters related to the efficient use of energy, based on applicable legal provisions;

  - Propose the creation or review of official Mexican standards (*Normas Oficiales Mexicanas*) to promote the efficient use of energy;

  - Issue opinions that are binding for other agencies of the Federal Administration in connection with best practices for the sustainable use of energy.

- *Federal Ministry of Agriculture* (*Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación*). In charge of issuing permits for the production of biofuels from corn.

5. What are the main permits/licenses required for renewable energy projects?

As of today, all power generation schemes require a prior permit by the CRE. While the Energy Reform does not clarify which energy related activities will still require a permit or license, in general terms an important de-regularization (or at least more flexibility) of the sector should be expected.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Although certain tax benefits are available, those are limited. Additionally, more coordination is required at the Federal and Local level to provide adequate tax benefits for the development of renewable energies more in line of what is offered in other parts of the world. Among the available benefits we find the following:

- Accelerated deduction. The Income Tax Law provides that investors are allowed to the deduction of 100% of the investment made in machinery and equipment used for generation of energy from renewable sources (including biomass) after 1 year of operation, so long as the equipment is to be used for at least 5 years.

- Exemptions. At a Federal or Local level certain exemptions apply for the payment of fees related to permits or other public procedures.

Secondary legislation of the Energy Reform should clarify whether additional tax advantages to renewable energy generation companies will be available.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The Power Law provides that CFE is obligated to purchase the surplus power generated by:

- Individuals and companies that generate power to satisfy their necessities;

- Co-generators (they produce power with steam or another secondary thermic energy or both);

- Independent production; and

- Small production (producers that generate less than 30 megawatts).

Notwithstanding, there is not a guaranteed consideration to these purchases by CFE.

The Energy Reform does not indicate the establishment of a purchase guarantee for the electricity generated by renewable energy companies. The secondary legislation of the Energy Reform may include commitments by the Federal Government in this regard.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The Renewable Energy Law states that CFE, prior opinion from the Ministry of Finance (*Secretaría de Hacienda y Crédito Público*), shall determine the maximum considerations to be paid to the generators who use the renewable energies. These considerations must include all costs associated with production capacity and energy generation. And will vary depending on the technology used, on the geographic location of the projects and the arising externalities, in connection with the generated energy by non-renewable sources. Prior to the Energy Reform, the possibility that CFE assume a minimum price guarantee in order to incentive the investment of potential energy generators was being analyzed. The decision of such analysis should, now, be reflected in the secondary legislation of the Energy Reform.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Mexico ratified the Kyoto Protocol on 7 September 2000, and is a non-Annex I country, having no mandatory emission reduction commitments. Mexico has actively participated in the global climate change negotiations, seeking a commitment from other countries (both developing and industrialized) to adopt a new international treaty that substitutes the Kyoto Protocol. Mexico has acted as host Party to numerous projects regarding the reduction of greenhouse gas ("GHG") emissions, being the authorities (including the designated national authority) well acquainted with the Clean Development Mechanism. Mexico has also participated with other mechanisms and institutions, such as the Climate Action Reserve, to implement GHG emissions reduction projects that will generate carbon credits.

Mexico issued the General Law of Climate Change ("Climate Change Law") on 6 June 2012, which has as one of its goals the creation of a voluntary carbon market.

The Climate Change Law establishes as an objective the reduction by 30% of national GHG emissions by 2020 and 50% by 2050, taking 2000 levels as the basis thereof, conditioned to the establishment of an international regime which enables financial and technological support from developed countries. Another goal is to promote the use of clean technologies so that by 2024, 35% of the production of electricity is generated by clean or renewable sources.

10. Do renewable energy based power plants have priority for connection to the grid?

As of today, CFE shall accept all energy generated by renewable sources, which is not necessarily the case of any other non-renewable sources.

Connection and dispatch rules are expected to have important changes as a result of the Energy Reform. As previously mentioned, such activities would be carried out by CENACE as a public instrumentality independent from CFE and, thus, specific rules should be issued.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

No, other than as described under question 6 above.

12. What are the other incentives available to renewable energy generation companies?

The federal government has set the foundations for the Fund, which is set to receive approximately 78 million dollars from the Federal government in 2014.[15].

The specifics and public policies related to this Fund are described and regulated by the Rules for the Operation of the Fund for the Transition and Sustainable Use of Energy (*Reglas de Operación del Fideicomiso Público de Administración y Pago denominado Fondo para la Transición Energética y el Aprovechamiento Sustentable de la Energía*) published in the Federal Official Gazette on 30 January 2014. According to the rules, the resources of Fund shall be used to promote the use, development and investment in the renewable energy sector.

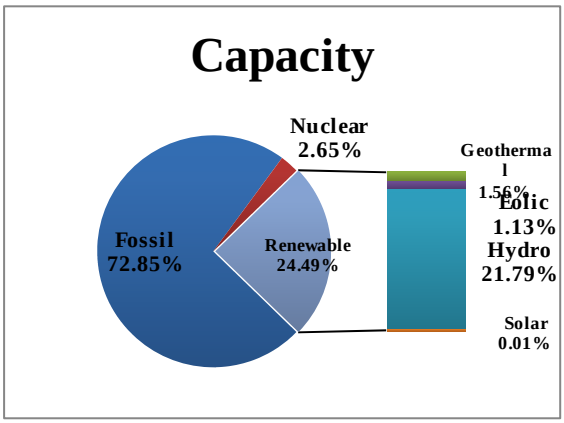
[15] Considering an exchange rate of approximately MXN $ 13.16 per dollar.

In addition to the foregoing, the National Strategy of Energy 2013-2027[16] (*Estrategia Nacional de Energía 2013-2027)* aims at providing the framework under which Mexico will meet its future energy needs in a cost-effective and sustainable manner, establishing certain objectives, recommendations and strategies to guide authorities and private companies. Some of said strategies specified in the plan are: (1) produce, deliver and use energy more efficiently; (2) support development of renewable energy supplies; (3) invest in energy and transportation infrastructure; and (4) reduce the production of carbon-based electricity. It is important to consider that the strategy plans to generate 35% of electricity from non-fossil energy in 2024.

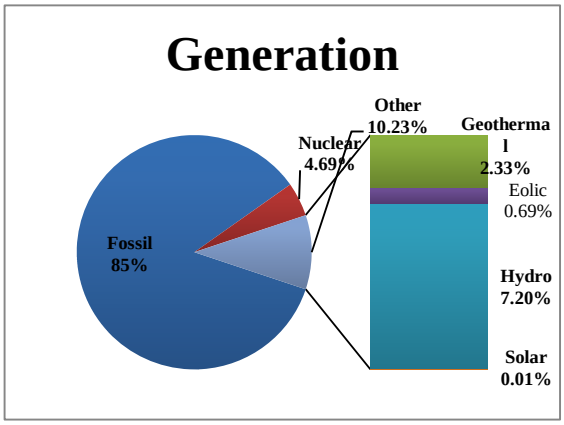
STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

According to SENER, as of June, 2013, installed capacity is as follows:[17]



According to SENER, as of June, 2013, the generation of electricity according to source is as follows: [18]



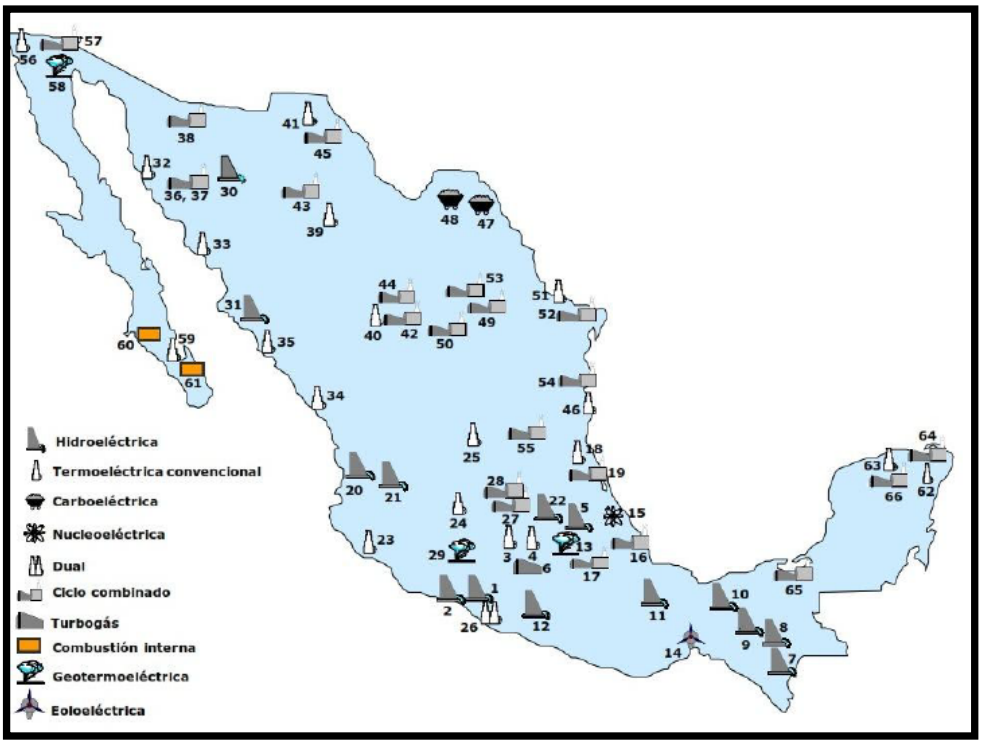
16 The National Strategy of Energy 2014 – 2028 is currently being reviewed by Mexico´s Senate, it is expected to be approved and published shortly.

17 Inform regarding the participation of renewable energies for the generation of electricity in Mexico up to 30 June 2013, SENER.

18 Inform regarding the participation of renewable energies for the generation of electricity in Mexico up to 30 June 2013, SENER.

According to CRE, the Mexican Electrical Segment is distributed as follows:

Mexican Population	112,336,538 inhabitants
Energy Installed Capacity (Public and Private Service)	64.49 GW
Transmission Lines	52, 947 km
Distribution Lines	833,081 km



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GENERAL

1. What is the nature and importance of renewable energy in your country?

In accordance with all obligations arising from the current legal and regulatory framework in Montenegro, and pursuant to all key international documents Montenegro had acceded to, as well as taking in consideration all the potentials of Montenegro, the energy sector is recognized as a pillar of overall, sustainable and long-term stable growth of Montenegro, with evident positive macroeconomic effects.

Therefore, the Energy Policy of Montenegro for the period to 2030, adopted in March 2011, recognized and determined the main three priorities to be achieved in this area for the proposed period of time, as: security of energy supply; development of the competitive energy market and sustainable energy development, with more than 20 key strategic objectives, of which more than 50% is directly related to activities in the field of renewable energy sources.

Taking in consideration that development of renewable energy sources is recognized as one of the strategic points, the Ministry of Economy, competent for the energy framework, has initiated various studies and projects in cooperation with and financed by different international institutions with the aim of detailed analysis of the potential of renewable energy sources, and in order to provide information to domestic institutions and companies operating in Montenegro about possible changes and improvement of the energy sector.

A great job has been done concerning the changes related to the legal and regulatory framework. Some of the new legislation acts has been adopted, while other important acts are in the phase of preparation, or in the process of adoption.

The plan for 2011 and 2012 was to adopt a whole new regulatory framework in the area of renewable energy sources, in order to establish the complete set of rules for this area. The competent governmental bodies are well on "track" to achieve these plans.

However, most of the work remains to be done. The implementation of the newly established laws will be a major challenge, as well as creation of the positive environment for the development and investment in this area or promotion of renewable energy sources as most attractive, all previously mentioned in order to achieve national goal for renewable energy sources for Montenegro designated as 29.5%.

Considering all aforementioned it is possible to conclude that renewable energy sources in Montenegro become one of the most growing field with huge potential and more than enough space to be developed.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Pursuant to the Energy Law ("Official Gazette of Montenegro", No. 28/10 from May 2010) renewable energy sources are defined as follows: energy sources existing in nature, fully or partially renewable, particularly the energy of water courses, wind, non-accumulated solar energy, bio fuel, biomass, biogas, geothermal energy, hydrothermal energy, aero thermal energy, wave, tidal, landfill gas, and sewage treatment plant gas energy.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The principal laws and regulations applicable to the area of renewable energy sources are:

- Energy Development Strategy of Montenegro to 2025, adopted in 2007;
- Action plan for the implementation of the Energy Development Strategy for the period 2008-2012;
- Energy Policy of Montenegro for the period to 2030, adopted in March 2011;
- Energy Law ("Official Gazette of Montenegro", No. 28/10 from May 2010);
- Law on Energy Efficiency ("Official Gazette of Montenegro", No. 29/10 from May 2010);
- Action plan for the energy efficiency for the period of 2010-2012, adopted in December 2010;
- Rulebook on criteria for issuance of an energy licence, content of request and registry of energy licences ("Official Gazette of Montenegro", No. 49/10 from August 2010);
- Rulebook on the types and classification of plants using renewable energy and cogeneration plants ("Official Gazette of Montenegro", No. 28/11 from June 2011);
- Rulebook on detailed conditions to be met by a legal entity to measure and explore the potential of renewable energy sources ("Official Gazette of Montenegro", No. 28/11 from June 2011);
- Regulation on the wind power plants ("Official Gazette of Montenegro", No. 67/09 from September 2009);
- Regulation on the tariff system for determining the incentive prices of electricity from renewable energy sources and high efficiency cogeneration; ("Official Gazette of Montenegro", No. 52/11 from November 2011);
- Decree on the manner of exercising the rights and status of privileged producer of electricity; ("Official Gazette of Montenegro", No. 37/11 from July 2011);
- Market rules that regulate a manner of organizing and managing the electricity market in Montenegro, issued by Montenegrin Electricity Market Operator in July 2012.

Other Laws and regulations applicable to the renewable energy sources among others are: Law on concessions, Law on Ratification of Agreement between European Union and Montenegro on forming the Energy Community, Law on construction of objects and special planning; Water Law, Law on Geological Exploration, Law on Mining, Procedure for Acquiring Concession for Detail Geologic Exploration and Exploitation of Mineral Resources, Competition Law, Company Law, as well as a number of other acts.

It is important to emphasize that in order to adopt whole new regulatory framework in the area of renewable energy sources, several other acts are in phase of preparation or in process of adoption, such as:

- The Program of development and use of renewable energy sources, which will define the dynamic of development of renewable energy sources in accordance with the requirements of the energy community and strategic goals of Montenegro;

- The National target for the total part of renewable energy sources in the total final energy consumption;
- Regulation on the types and manner to encourage production of renewable energy sources and cogeneration;
- Decree on the manner of issuance, transfer and withdrawal of the guarantee of origin of energy produced from renewable energy sources and high efficiency cogeneration;
- Decision on the preparation of the Strategic Environmental Impact of Energy Development Strategy of Montenegro to 2030;
- The Study of distributed source connection and operation in the electric power system of Montenegro;

Pursuant to the Energy Law development and use of renewable energy sources shall be set in the Program for development and use of renewable energy sources that shall be adopted by the Government for the period of 10 years in accordance with the Energy Development Strategy, and that shall contain specifically the national indicative target with regard to use of renewable energy sources and time schedule, i.e., timing for its implementation, together with support schemes.

Furthermore, according to the Energy Law the national indicative target for renewable energy sources means the contribution of energy produced from renewable energy sources to the gross final energy consumption that is expressed as a percentage and shall be calculated based on the methodology set by the Ministry.

The development and use of high-efficiency cogeneration in accordance with the Energy Development Strategy shall be set in the Program for development and use of high-efficiency cogeneration that shall be adopted by the Government for a period of 10 years, and which Program shall specifically set available and feasible potential for use of high-efficiency cogeneration with planned indicative target for a period covered by the program, barriers, support schemes, time schedule, i.e., timing for its implementation and tentative financial resources required for its implementation.

4. What are the principal regulatory bodies in the renewable energy sector?

In accordance with the Energy Law the main bodies in charge for the area of renewable energy are the Ministry of Economy and the Energy Regulatory Agency, each of them under the framework of their competencies, while some other public authorities might be included or authorized for performing some of the activities in connection with the various aspects in the area of renewable energy sources.

Some of the most important authorities of the Ministry of Economy concerning the area of renewable energy sources are the establishment of the legal, institutional and regulatory framework; a supervisory role, inspection authorities and responsibility for facilitating the procedures for new subjects in this sector, while Energy Regulatory Agency has authorities such as: supervision over the work of energy market subjects, issuing licenses, authorizations, establishing prices and tariffs prescribed by the Law, and promoting competition within the sector.

5. What are the main permits/licenses required for renewable energy projects?

In accordance to the Laws and Rulebooks that regulates production and distribution of energy produced from renewable energy sources, for participation in or implementation of renewable energy projects there are three main permits/licensees that must be obtained. A License for conducting energy activity, and

Energetic license and a Use permit. The License for conducting energy activity is required for any subject in order to conduct energy activity as its business activity. An Energetic license is required for building or reconstruction of facilities for the production of energy, and a Use permit is required for using of such objects for the purpose they are built for. All the permits/licensees are obtained at the competent state authorities and regulatory bodies, through the procedures defined by the Law and Rulebooks of those authorities or regulatory bodies. It is also important to point out that all the licensees/permits are interconnected and issuance of the next one is conditioned through issuance of previous one. In addition stipulated licensees are also required to have signed contracts for connection of the energetic facility to the distributional network or transmission system.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

It is very clear orientation of the Government stated even in the Energy Law to provide various incentives for the renewable energy sector. So, according to the Law provisions construction and use of renewable energy sources may be supported by increasing compulsory minimum contribution of renewable energy sources, by impacting on a decrease of investment costs and by increasing purchase price for energy and by other measures pursuant to the Law.

Moreover, in accordance with the Law, privileged producers may acquire a right to price support scheme for electricity generated that will be established in the tariff system for generation of electricity from renewable energy sources and cogeneration that is adopted by the Government, pursuant to the Law.

Some tax advantages for renewable energy companies has been provided by the Rulebook on the manner of use of the tax relief for investments in fixed assets used for producing energy from renewable energy resources and energy efficiency ("Official Gazette of Montenegro", no 09/09 from 2009), while some additional advantages might be provided after the new previously mentioned by-laws would be adopted.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Apart from the previously stated incentives, the Energy Law recognizes also the purchase guarantee due to the fact that based on the Program for development and usage of renewable energy sources, and Program for development and usage of high-efficiency cogeneration, the Government shall determine minimum share of electricity generated from renewable energy sources in the total electricity supply which shall be taken over by each supplier of electricity.

Evidence about compliance with the minimum contribution from renewable energy sources requirement shall be a guarantee of origin.

Moreover, energy undertakings shall implement measures aimed at increasing a contribution of electricity generated from renewable energy sources to the total electricity generation.

A purchase guarantee for renewable energy companies is also given by the Regulation for wind energy plants adopted by the Government, where there is an obligation on the state to purchase all energy generated from these companies.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The regulation of the tariff system for determining the incentive prices of electricity from renewable energy sources and high efficiency cogeneration shall regulate the manner of determining incentive price for electricity generated by plants using renewable energy sources and high efficiency cogeneration plants, which has previously acquired the status of the privileged producer.

According to the Law, the status of privileged producer lasts for 12 years, therefore the proposed incentive guarantees privileged price to producers for the same period. The tariff system of purchase prices for energy is different for different types or groups of facilities, as well as for different types of renewable sources.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

The Kyoto Protocol was ratified by the Parliament of Montenegro on 27 March 2007 by adopting the Law on ratification of Kyoto Protocol (Official gazette of Montenegro, No. 17/07).

Since Montenegro is still considered to be a developing country and a small emitter of carbon, it is not yet obliged to obey the Protocol and accordingly there are no domestic regulations that define the regime for carbon credits in Montenegro. However, since Montenegro is a candidate for membership in the European Union, through association to European Union obligations from Kyoto Protocol will eventually become obligatory.

10. Do renewable energy based power plants have priority for connection to the grid?

An energy undertaking of generated electricity from the renewable energy resources, and if satisfied some other requirements provided by the Law may obtained the status of privileged generator.

A privileged generator shall be entitled to: a purchase price for electricity in accordance with a tariff system and a priority in delivery of total electricity generated into the transmission or the distribution system. The Law even prescribed that in the process of operating transmission and distribution system and dispatching, operator of electricity transmission and distribution system shall give preference to the privileged generators, in accordance with technical capabilities of the system.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

No incentive in this field is given if the material for plant construction is locally produced, notwithstanding the fact that the costs of transport would be less and no other taxes could be applicable in this case, and way of payment with domestic manufacturers could be arranged in a way that enables easier paying.

12. What are the other incentives available to renewable energy generation companies?

The general obligation of the Ministry, by the Law, is to facilitate easier licensing procedures for renewable energy sources, and the intention of the State to enable renewable energy production in Montenegro, with special attention to the surveys and further identification of the renewable energy sources potential, which incentives would be provided through different

projects recently established or initiated in cooperation with different international institutions.

STATISTICS

13. What is the percentage of electricity generated, based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

It is estimated that the total hydro potential in Montenegro is approximately 9,846 GWh/per year, and that is possible to realize 400 GWh/per year just with small hydro power plants.

In addition, according to the preliminary estimation undertaken, Montenegro shows a wind potential of 100 MW considering only the windiest areas (wind speeds above 7 m/s) and an overall potential of 400 MW taking also into account the zones with medium potentiality.

Pursuant to the researches Montenegro has one of the greatest solar energy potential in the South-Eastern Europe: It ranks above its neighbors, as the annual amount of the solar energy estimated in Podgorica, of the order of 1.600 KWh/(m2*d) is greater than the corresponding reference values for the most of the cities from the region.

The study has shown that great potential existing even in the area of the biomass (approximately to the amount of 400 GWh), as well as of some of the other renewable energy sources that is possible to exploit.

There is no available data on the percentage of electricity generated based on each type of renewable energy sources in the total generation of electricity on a country-wide scale.

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GENERAL

1. What is the nature and importance of renewable energy in your country?

The importance of renewable energy in Poland has increased significantly during the past few years, in line with the recent European legislation and in particular due to the adoption of Directive No. 2009/28/EC of the European Parliament and the Council of 23 April 2009, on the promotion of use of energy from renewable resources.

The Polish Energy Policy, adopted by the Council of Ministers on 10 November 2009, follows the principles enshrined in the European legislation. One of its main objectives is to increase the use of renewable energy sources, including biofuels. The Polish Energy Policy is furthermore based on the approach that the use of renewable energy sources will be a stabilizing factor for national energy security.

The main objectives in the field of renewable energy sources include:

- Increasing the share of renewable energy in final energy consumption up to 15% by 2020 and further increasing in the following years;
- Achieving a 10% share of biofuels in the transport fuel market by 2020 and increasing of the deployment of second generation biofuels; and
- Protecting forests from excessive exploitation for the purposes of production of biomass as well as the sustainable use of agricultural areas as renewable energy sources in order to prevent competition between renewable energy and agriculture.

Actions aimed at the increased use of renewable energy sources include in particular:

- Elaboration of a path to achieve the above mentioned share of 15%, by division into specific kinds of energy (electric energy, heat, cooling, bio-components) and specific technologies;
- Maintenance of the existing support mechanism, including the system of certificates of origin;
- Introduction of additional support mechanisms, to extend the generation of heat and cooling from renewable energy sources;
- Further exemption of renewable energy from excise tax;
- Direct support of the development of new renewable energy sources and construction of power distribution grids, using available European funds and means accumulated in the environmental protection funds, including substitution fees; and
- Development of industries which manufacture appliances and installations for the renewable energy sector.

2. What is the definition and coverage of renewable energy under the relevant legislation?

According to the Polish Energy Law[1] (the "Energy Law"), renewable sources of energy are those using wind power, solar power, aerothermal, geothermal and hydrothermal

[1] Journal of Laws of 1997, No. 54, item 348, as amended.

energy, sea wave and tidal energy, river flows, biomass, energy from landfill biogas and biogas produced in the process of sewage disposal and treatment or decomposition of plant and animal remains. Thus, renewable energy is energy generated from the above listed renewable energy sources.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The renewable energy sector together with the renewable energy support system (which currently takes the form of certificates of origin with a quota obligation) is regulated by the Energy Law and by subordinate legislation issued by the competent authorities pursuant to the Energy Law. Detailed rules on the current support system are determined in the Ordinance of the Minister of Economy of 18 October 2012[2] (the "Ordinance"). The technical requirements for grid connections and the terms of operation of enterprises using renewable energy sources are regulated by the Ordinance of the Minister of Economy of May 4, 2007[3] (the "System Ordinance").

Draft Legislation on Renewable Energy

The current legislation on renewable energy will be significantly changed in the future. According to a draft new law on renewable energy sources adopted recently by the Council of Ministers (the "RES Act"), the current support system based on certificates of origin (so-called "green certificates") and quota obligation is to be gradually replaced by an auction regime based on fixed prices granted to the winners of auctions. One of the principal reasons for the introduction of the new legislation on renewable energy sources is to align the Polish renewable energy support model with the European Commission guidelines on renewable energy support systems and make it market-based and cost-effective, thus eliminating excessive support and relieving the state budget.

The changes to the support system provided in the RES Act are to enter into force 12 months after the date the European Commission issues a positive decision on the compliance of the new support system with state aid regulations. It is therefore likely that the new system will not enter into force earlier than in the second half of 2015.

Below are the main principles of the RES Act in its latest wording as of April 2014. The final wording of the RES Act may still be changed significantly in the course of parliamentary discussions.

- The auctioning regime will be applied to all new renewable energy installations (those that will produce renewable energy for the first time after the RES Act enters into force). Existing installations (those that will have produced renewable energy for the first time before the RES Act enters into force) will be able to choose between the modified green certificate system and the new auctioning system. Certain renewable energy installations so far eligible for support will be excluded from the support system (hydroelectric power plants with installed capacity above 5 MW) and the amount of support granted to certain other installations will be significantly limited (co-combustion plants, large biomass installations).

- The main modifications of the green certificate support system applicable to existing installations under the RES Act will be the following: (i) the term of support will be limited to 15 years from the date the energy was first produced in an installation (with a possibility to extend it for a limited

2 Journal of Laws of 2012, No. 1229.

3 Journal of Laws of 2007, No. 93, item 623, as amended.

time upon the modernization of an installation); (ii) the quota obligation[4] will no longer be determined with a multiannual perspective (the maximum quota obligation is established at 20%, however, the Minister of Economy will be able to freely adjust/decrease the quota on yearly basis); and (iii) the substitute fee will no longer be subject to indexation.[5]

- The maximum term of support granted through auctions will be limited to 15 years from the date the energy was first produced in an installation as well. Support beyond the above-mentioned term will be possible upon the modernization of an installation in proportion to its increased capacity.

- The Maximum volume of energy which can be granted support through auctions in a given year will be determined on annual basis by the Council of Ministers. Auctions will be organized at least once a year, separately for new installations and for existing installations which switch to the auctioning system. Moreover, auctions will be organized separately for installations with installed capacity of less than 1 MW and more than 1 MW. In in order to ensure that only projects that reach a certain stage of maturity are eligible for support, the RES Act determines prequalification criteria whose fulfillment is necessary for bidders to participate in an auction. Existing installations which switch to the auctioning system do not have to undergo any prequalification in order to participate in auctions.

- In order to avoid excessive support, a so-called "reference price", i.e., a maximum price per MWh that may be submitted in a bid, will be determined for each auction. Reference prices will be calculated separately for auctions organized for existing installations and for auctions for new installations.

- Support will be granted to the bidders who offered to produce the energy at the lowest prices up to the limit of the amount of energy eligible for support in a given auction and it will apply only to quantities of energy specified in their bids. In order to benefit from the fixed prices, the auction winners will sell the energy to so-called "obligated suppliers", who, by virtue of law, will be obligated to purchase the energy at the prices declared in the winning bids (indexed on an annual basis).

- The RES Act will introduce provisions setting a cap on total values of different support measures for renewable energy installations which participate in auctions (including support in the form of fixed energy prices granted in auctions and other kinds of support, e.g., support from green certificates and investment aid in the form of EU grants). If support granted to a given installation exceeds the cap, that installation will not be able to participate in an auction.

4. What are the principal regulatory bodies in the renewable energy sector?

The President of the Energy Regulatory Authority (the "President of the ERA"), a central body of government administration, is the regulator of the fuel and energy sector, including the renewable energy sector. In general, the President of the ERA regulates the activity of energy enterprises based on the Polish Energy Law and the state energy policy, which aims to balance the interests of energy enterprises and customers. The President of the ERA is also the concession-granting authority.

[4] Under the current regime, green certificates acquired by the producers of energy from renewable sources are purchased by certain entities which are under a "quota" obligation. This means that each year they have to ensure that the amount of energy stemming from green certificates they purchase (and present for cancellation) reaches the relevant percentage of the annual volumes of energy they trade, i.e., the "quota" (see point 7 below for details on the current quota obligation).

[5] See point 7 below for details on substitute fees.

5. What are the main permits/licenses required for renewable energy projects?

The development of a renewable energy project would generally require obtaining a number of administrative decisions, including the main administrative decisions in a typical investment process, i.e., an environmental permit (determining environmental conditions for the development of the project), a planning decision (setting land development conditions for the project) and a building permit (granting permission to commence construction works and approving a building design).

Economic activity in the field of generation of energy (including the generation of electricity from renewable energy sources) is also subject to obtaining a concession. Concessions are granted by the President of the ERA for a definite period of no less than 10 years and no more than 50 years, except where the entrepreneur has requested that the concession be granted for a shorter period. Energy enterprises that are granted a concession must pay an annual fee to the state budget, which is treated as a cost of their activity and is calculated according to the following formula: the enterprise's annual revenues (only those revenues connected with the activity covered by the concession) multiplied by 0.0006. Enterprises operating installations which produce energy from renewable sources of a capacity not exceeding 5 MW are exempted from concession fees.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Electric energy generated from renewable energy sources is exempt from excise tax on the basis of documents confirming the cancellation of a certificate of origin (i.e., a certificate confirming that energy was generated from a renewable energy source). For details pertaining to certificates of origin, please see Section 7 below. Upon the submission of a document confirming the cancellation of certificates of origin, the excise tax due is decreased for the following settlement periods.

In addition, the payers of agricultural taxes enjoy investment relief if expenses were born for the purchase and installation of devices for the use of natural energy sources (wind, biogas, solar power and water) for production purposes if such expenses were not fully or partially financed from public means. The investment relief is granted after the investment's completion and consists of a decrease of the agricultural tax due for land situated in the community where the investment was undertaken in the amount of 25% of the properly documented investment expenditure. The relief for the same investment cannot be applied for a period longer than 15 years.

As regards biofuels, apart from the exemption for biocomponents intended for use in liquid fuels and liquid biofuels from excise duty, no other tax incentives are provided in the law.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Mandatory Purchase

Pursuant to the Energy Law, the obligation to purchase electricity generated in renewable energy sources applies to the "last resort suppliers." Last resort suppliers are those companies that are obligated to supply electricity within a licensed area to customers that do not exercise their power to choose an alternative (market) supplier. Last resort suppliers are obligated to purchase all the electricity that has been generated from renewable sources of energy connected to the

grid and located in the territory of the last resort suppliers' operations, offered by power companies that have obtained concessions to produce electricity from renewable energy sources. If a last resort supplier has not been selected in a tender organized by the President of the ERA (or determined by way of a decision of the President of the ERA) in a given area, the purchase obligation applies to entities performing the tasks of the last resort suppliers, i.e., the companies that were detached from a vertically integrated energy company and are engaged in the sale of energy to end customers that do not benefit from TPA ("third party access")[6]. There are no maximum limitations concerning the quantity of electricity to be bought.

The electricity is purchased at its average market sale price in the previous calendar year, announced by the President of the ERA. In 2013, that price was PLN[7] 181.55/MWh, in 2012 – PLN 201.36/MWh, in 2011 – PLN 198.90/MWh, and in 2010 – PLN 195.32 /MWh.

Green Certificates

Since the cost of generating electricity from a renewable energy source is usually higher than electricity market prices, the Energy Law provides for an additional support mechanism for renewable energy producers in the form of certificates of origin – also called "green certificates".

The obligation to purchase green certificates applies to: (i) energy enterprises that produce or trade in electricity and sell electricity to end customers other than "industrial customers"; (ii) "industrial customers", i.e., customers who consume energy in the amount of no less than 100 GWh per year, if the energy costs exceed 3% of their annual proceeds; (iii) end customers, other than "industrial customers", who participate in the commodity exchange; and (iv) brokerage houses (together referred to as the "Obligated Energy Companies" – "OEC"). OECs are required to either:

- acquire green certificates and present them to the President of the ERA for cancellation; or
- pay a substitute fee.

Certificates of origin are issued by the President of the ERA by decision upon a motion of a renewable energy producer, submitted via the competent electricity system operator[8] within 14 days from the receipt of such motion. A certificate of origin confirms that electricity has been produced from a renewable energy source.

The property rights arising from a certificate of origin constitute an exchangeable commodity and exist from the moment the certificate of origin is first registered on the basis of the President of the ERA's notice to the Register of Certificates of Origin (the "Register"). Those rights can be traded on the Polish Power Exchange (*Towarowa Giełda Energii*) as well as through OTC (over the counter) trading.

Upon a motion of the OEC, the Polish Power Exchange is required to issue a document confirming the property rights arising out of the company's certificates of origin and the amount of electricity those rights pertain to.

6 TPA requires owners of electrical grid infrastructure to grant access to these facilities to third parties (other than their own customers) in order to allow them to provide services for their customers, on commercial terms comparable to those that would apply in a competitive market.

7 Average exchange rate of EUR to PLN on 28 April 2014, is 4.2112.

8 The electricity system operator is a distribution system operator where the renewable energy producer is connected.

Then, upon another motion of the OEC (the holder of the property rights arising from the certificate of origin) the President of the ERA will completely or partially cancel a certificate of origin. A certificate of origin cancelled by 31 March of a given calendar year is taken into consideration in the course of verification of the compliance of the entity with the obligation to obtain certificates of origin and submit them for cancellation, applicable for the preceding calendar year.

The President of the ERA informs the Polish Power Exchange, as the entity which maintains the Register, about issued and cancelled certificates of origin.

The property rights arising out of a green certificate expire upon its cancellation by the President of the ERA. The certificate owner may submit the certificate of origin to the President of the ERA for cancellation in any year it chooses (e.g., a certificate issued in 2010 may be submitted for cancellation in 2013).

Substitute fee

The substitute fee is a form of penalty for non-compliance with the obligation to submit the required amount of green certificates. Pursuant to the Ordinance, the obligation to obtain certificates of origin and submit them for cancellation to the President of the ERA or to pay the substitute fee will be considered to have been fulfilled if, in a given year, the total amount of the share of electricity resulting from the certificates of origin that the OEC submitted for cancellation, or from the substitute fee it paid, is no less than:

- 13% - in 2014;
- 14% - in 2015;
- 15% - w 2016;
- 16% - in 2017;
- 17% - in 2018;
- 18% - in 2019;
- 19% - in 2020;
- 20% - in 2021.

This share should be calculated in relation to: (i) the total amount of electricity sales to end customers – for energy enterprises that produce or trade in electricity and sell electricity to end customers; (ii) the total amount of electricity purchased on a commodity exchange for own-load by means of transactions executed in energy enterprises own behalf – for end customers that participate in the commodity exchange; and (iii) the total amount of electricity purchased on the commodity exchange based upon orders from end customers – for brokerage houses. The share of electricity resulting from the certificates of origin that industrial customers have to submit for cancellation depends on the share of electricity costs in the value of their annual proceeds.

According to the Energy Law, the substitute fee is calculated in accordance with the following formula:

$$\mathbf{O_z = O_{zj} \times (E_o - E_u),}$$

where the above symbols have the following meanings:

O_z – means the substitute fee expressed in PLN;

O_{zj} – means the unit substitute fee amounting to PLN 240 for each MWh; this amount is subject to indexation by the inflation rate; the President of the ERA announces the indexed substitute fee in the *Bulletin of the Energy Regulation Office* by 31 March each year;

E_o – means the quantity of electricity, expressed in MWh, resulting from the obligation to obtain a green certificate and submit it for cancellation in the relevant year; and

E_u – means the quantity of electricity, expressed in MWh, under the certificates of origin which the power company submitted for cancellation in the relevant year.

The unit substitute fee (Ozj) in 2014 amounts to PLN 300.03/MWh (in 2013 it amounted to PLN 297.35, in 2012 – PLN 286.74, in 2011 – PLN 274.92, and in 2010 – PLN 267.95).

The substitute fees must be paid to the National Fund for Environmental Protection and Water Management by 31 March of each year.

Fines

Non-compliance with the obligations pertaining to the acquisition of the required amount of green certificates or to payment of the substitute fee by the OEC is subject to a fine imposed by the President of the ERA.

The minimum amount of the fine is calculated as follows:

Ko = 1.3 x (Oz - Ozz)

where:

Ko – means the minimum amount of the fine, expressed in PLN,

Oz – means the substitute fee, calculated in accordance with the formula presented above,

Ozz – means the substitute fee actually paid, expressed in PLN.

The maximum amount of the fine cannot exceed 15% of OEC's annual proceeds.

Please note that since the OEC can fulfill the green certificate related obligations by either purchasing the required amount of green certificates or by payment of the substitute fee, only the non-fulfillment of either of those alternatives constitutes grounds for the President of the ERA to impose a fine.

A similar fine is imposed by the President of the ERA on last resort suppliers (or entities performing the tasks of last resort suppliers) for non-compliance with the mandatory purchase obligation referred to above.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The Polish legislation does not guarantee the minimum prices for renewable energy. Such prices are determined by the market.

As regards green certificates, in practice, the amount of the substitute fee has the decisive impact on the price of green certificates (such amount is the maximum price a sensible entrepreneur would pay for the green certificates).

Between 2012 and 2013, Poland experienced a dramatic decrease in the prices of green certificates traded on the Power Exchange (with green certificate price dropping to PLN 100/MWh in January 2013). This was probably due to a practice developed by energy enterprises in response to the excessive supply of green certificates and, in general, legal uncertainty regarding the future shape of the renewables regime in Poland. The practice consisted of issuing a substitute fee rather than presenting green certificates for cancellation with the objective of storing "cheap" green certificates and presenting them for cancellation later (when the price is higher). Currently, the situation has improved slightly with the average price of green certificates

traded on the Power Exchange in Q1 2014 being around PLN 200, but it remains unstable.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Poland ratified the Kyoto Protocol on 26 July 2002, and undertook to reduce greenhouse gas emissions by 6% in the 2008-2012 period as compared with the 1988 level of emissions. Poland has fulfilled this obligation (by 2011 the level of emissions was 29% lower than in 1988).

The Polish regime for carbon credits is part of the EU European Trading System (EU ETS), which works on the "cap and trade principle." The system covers around 45% of the EU's greenhouse gas emissions and, as far as individual sectors are concerned, includes power plants, a range of energy-intensive industry sectors and civil aviation. Recently, the system has entered its third phase (2013-2020), which differs significantly from the two previous ones by introducing auctions as the main method of allocating allowances, with free allowances becoming an exception to the auctioning rule. During the third phase of the EU ETS, free allowances will, however, still be allocated to certain energy-intensive industries deemed to be exposed to a significant risk of "carbon leakage." Poland is also one of the countries benefiting from a derogation on the basis of which free allowances can also be granted to existing power plants.

The principles of the EU ETS have been implemented in Poland in the Act on Greenhouse Gas Allowances Trading System[9] and the Act on Greenhouse Gas Emissions Management System.[10]

10. Do renewable energy based power plants have priority for connection to the grid?

Energy companies engaged in the transmission or distribution of energy are obligated to execute an agreement on connecting the interested entities to the grid if they fulfill the interconnection conditions, provided that the interconnection is technically and economically feasible.

Although renewable energy power plants are not expressly granted priority in connection to the grid, the Energy Law provides for preferential treatment of such plants if, due to the lack of technical or economic conditions, the interconnection cannot be performed in accordance with the motion submitted by the interested producer at the time of the submission of such motion. In such case, the energy company which operates the grid to which the producer intends to be interconnected, while refusing the interconnection, is obligated to indicate a date on which the interconnection will be technically possible following the necessary expansions or modernizations of the grid. If such energy company possesses certain capacities which do not satisfy the needs of the interested producer entirely, it is nevertheless obligated to offer to perform the interconnection at least partially (up to the current limits of the capacity of its grid).

If a given energy company refuses to execute an interconnection agreement, it is obligated to inform the President of the ERA of the refusal in writing, giving grounds for such refusal.

[9] Journal of Laws of 2011, No. 122, item 695, as amended.

[10] Journal of Laws of 2013, No. 1107, unified text.

Moreover, renewable energy power plants enjoy priority in transmission and distribution of electric energy. Pursuant to the Energy Law, the electricity system operator is obligated to grant priority in transmission and distribution of electric energy generated from renewable energy sources.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

The manufacture of equipment used in the construction of renewable energy based power plants is supported within the framework of the EU grants awarded under the Operational Program Infrastructure and Environment. In addition, there is a possibility to apply for EU grants from regional operational programs.

Investors planning to implement renewable energy related projects can also apply for financial means from national funds for environmental protection. In particular, the National Fund for Environmental Protection and Water Management offers financial means for development of renewable energy related projects (e.g., within the Green Investment Scheme).

12. What are the other incentives available to renewable energy generation companies?

Polish law provides for incentives in particular for smaller renewable energy based power plants. The energy enterprises engaged in the generation of electricity in renewable energy based power plants of less than 5 MW capacity are released from certain fees related to the green certificates and concession fees. Furthermore, such power plants enjoy reduced fees for connecting to the grid in the amount of 50% of the connection fee (the connection fee is calculated on the basis of the real expenditures borne for performing the grid connection).

Furthermore, a specific support scheme is established in the Act on Biofuels[11] and it regards the promotion of biofuels. It is called the National Indicative Target. An entity implementing the National Indicative Target is obligated to ensure that during each year a specified minimum share of bio components and other renewable fuels in the overall amount of liquid fuels and liquid biofuels sold, traded in another form or used by it for its own purposes has been met. The obligation to fulfill the National Indicative Target requirement applies to the entrepreneurs conducting business activity in the scope of production, import or intra-community purchase of liquid fuels or liquid biofuels that sell or dispose of it in any other way on the territory of the Republic of Poland or use such fuels for their own purposes. The National Indicative Target for 2014 is 7.10%.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

The table below presents the generation of electricity (MWh) by each type of renewable energy source in Poland in 2005 – 2012 based on data published by the Energy Regulatory Authority.

[11] Journal of Laws of 2006, No. 169, item 1199, as amended.

Type of renewable energy source	2005	2006	2007	2008	2009	2010	2011	2012
	Energy generated [MWh]							
Biogas based power plants	104 465,281	116 691,863	161 767,939	220 882,924	300 850,259	363 595,743	430 537,322	529 384,449
Solar power plants	0	0	0	0	1,328	1,672	177,805	1168,498
Biomass based power plants	467 975,678	503 846,206	545 764,936	560 967,435	601 088,244	635 634,844	1 055 151,712	1 617 714,597
Wind based power plants	135 291,628	257 037,412	472 116,429	806 318,563	1 045 166,230	1 823 297,061	3 126 526,394	4 598 875,025
Water based power plants	2 175 559,099	2 029 635,604	2 252 659,312	2 152 943,187	2 375 767,238	2 922 051,638	2 316 833,385	2 031 689,647
Co-combustion	877 009,321	1 314 336,612	1 797 217,058	2 751 954,127	4 281 614,983	5 243 251,417	5 999 582,057	6 364 306,243
Total	**3 760 301,007**	**4 221 547,697**	**5 229 525,674**	**6 493 066,236**	**8 604 488,282**	**10 987 832,375**	**12 928 808,675**	**15 143 138,459**

In 2012, the national consumption of energy amounted to 157,013 GWh (0.6% lower than it was in 2011), whereas the total volume of energy generated in Poland was 159,853 GWh (2% lower than in 2011). Electricity generated from renewable energy sources amounted to: (i) 12.43% of the aggregate amounts of energy sold to final consumers, calculated based on the numbers of green certificates issued; and (ii) 10.42% of the aggregate amounts of energy sold to final consumers, calculated based on the numbers of green certificates submitted for cancellation.[12]

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[12] Source: Energy Regulatory Authority.

Romania

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GENERAL

1. What is the nature and importance of renewable energy in your country?

In line with the European trend, on the Romanian market, renewable energy is gaining credibility among private investors.

Romania has important competitive advantages on the European renewable energy market: it has a balanced mix of available energy and a significant potential of renewable sources, as well as relatively sophisticated energy markets for both electricity and green certificates which are operational.

The Directive 2009/28/CE on the Promotion of Electricity Production from Renewable Energy establishes a specific target of a 24% share of renewable energy sources in the gross final energy consumption in Romania by 2020, whereas the overall binding target in the EU is set to 20%.

Despite the significant efforts needed, Romanian authorities declared that Romania may reach the overall target under the Renewable Energy Directive by relying exclusively on domestic production. To achieve the 24% mandatory target for 2020, Romania has to develop 50% of the total potential of its renewable energy sources which will imply significant investments in renewable energy projects. (Source: Romania's National Renewable Energy Action Plan).

Given the significant investments and development in the sector, as at the end of 2013, Romania reached the target of renewable energy of renewable energy in the gross final consumption in view of 2020, as well as the national target (Source: Report of the Industries and Services Commission within the Romanian Parliament in respect of the Law for the approval of the Government Emergency Ordinance No. 57/2013 amending and supplementing Law No. 220/2008 establishing a system for the promotion of electricity produced from renewable energy sources).

2. What is the definition and coverage of renewable energy under the relevant legislation?

Romanian legislation defines renewable energy as the energy produced from renewable non-fossil energy sources, such as: wind, solar and geo-thermal, wave, tidal, hydro-power, biomass, landfill gas, sewage, treatment plant gas and biogases.

The promotion system established in Romania applies to the electricity produced from: hydraulic power used in electrical groups of stations having an installed power of maximum 10 MW; wind energy; solar energy; geo-thermal energy; biomass; bioliquids; biogas; gas resulting from waste processing; mud fermentation gas of waste water purification installations.

In respect of solar energy, Romanian law provides for specific restrictions, namely energy produced by solar power plants located on land that, on 31 December 2013, was in the agricultural circuit will not benefit from the Romanian green certificates promotion system.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The implementation of the EU directives in the field of the renewable energy into the national legislation led to the establishment in 2003 of the initial legal framework which formed the basis for the support mechanism of green certificates combined with mandatory quotas, thereby encouraging investments in energy produced from renewable sources. As of 2006, the legislation framework allowing the operation of the green certificates market was also adopted.

(a) Principal laws and regulations

The enactment of Law No. 220 on 27 October 2008 on Establishing a System for the Promotion of electricity produced from Renewable Energy Sources ("Law No. 220/2008") was the turning point in the Romanian legislative framework. Law No. 220/2008 has been amended several times before its actual application in October 2011. Significant amendments to Law No. 220/2008 have been made through the Government Emergency Ordinance No. 88/2011 ("GEO No. 88/2011") as a result of Romania's negotiations with the European Commission in view of the authorization of the Romanian promotion system, and purport mainly to avoid overcompensation of energy producers from renewable sources. A new turning point on the matter of the legislation applicable to renewable energy production in Romania was made by the enactment of the Government Emergency Ordinance No. 57/2013 ("GEO No. 57/2013"), as recently approved by Law No. 23/2014 ("Law for the Approval of GEO No. 57/2013"). In accordance with the relevant EU and Romanian law on state aid, the latest legislative changes regarding the Romanian renewable energy promotion system are subject to the approval of the European Commission. The proceedings for the notification of the latest legislative changes to the Romanian renewable energy legislation to the European Commission are currently ongoing.

Following the adoption of GEO No. 88/2011, starting with the actual application of Law No. 220/2008, the main secondary legislation for the implementation of Law No. 220/2008 has been issued, or as the case may be, prepared by the Romanian Energy Regulatory Authority ("ANRE"), follows as:

- Regulation regarding the accreditation of renewable energy producers approved by ANRE Order No. 42/2011, as subsequently amended;
- Regulation regarding the issuance of green certificates approved by ANRE Order No. 43/2011, as subsequently amended;
- Regulation regarding the green certificates market approved by ANRE Order No. 44/2011, repealed and replaced by the Regulation regarding the green certificates market approved by ANRE Order No. 57/2013;
- Methodology for determining the annual quotas approved by ANRE Order No. 45/2011, waived by ANRE Order No. 12/2014 establishing the mandatory annual quota for 2013;
- Regulation on the issuance and follow-up of the origin guarantees for renewable energy approved by the Government Decision No. 1232/2011; and
- Methodology regarding the monitoring of the green certificates renewable energy promotion system approved by ANRE Order No. 6/2012, as subsequently amended ("Monitoring Methodology").

Therefore, at the end of 2011, the Romanian system for promotion of renewable energy became applicable.

(b) Romanian promotion system

The promotion system combines the mandatory quota system with the trading of green certificates. On the basis of an accreditation decision issued by ANRE and starting on the calendar month when the accreditation decision has been issued, renewable energy producers benefit from green certificates for the electricity produced and delivered.

For example, according to the currently applicable legislation, for each MWh produced and delivered to the electricity grid:

- wind energy producers accredited before 31 December 2013 receive 2 green certificates until 2017 and 1 green certificate as of 2018 whilst wind energy producers accredited after 1 January 2014 will receive 1.5 green certificates until 2017 and 0.75 green certificates as of 2018; and

- solar energy producers accredited before 31 December 2013 receive 6 green certificates whilst solar energy producers accredited after 1 January 2014 receive 3 green certificates.

For the testing period, irrespective of the technology used, renewable energy producers shall receive one green certificate for each 1 MW produced and delivered to the electricity grid.

According to the latest changes to Law No. 220/2008, the release of a certain number of green certificates shall be temporarily deferred starting from 1 July 2013 and until 31 March 2017 for certain technologies, including solar and wind energy, as follows:

- for wind energy producers accredited before 31 December 2013, out of the 2 green certificates that they are entitled to receive until 2017, 1 green certificate shall be deferred; and

- for solar energy producers accredited before 31 December 2013, out of the 6 green certificates that they are entitled to receive, for which 2 green certificates shall be deferred.

Practically, during the 1 July 2013 – 31 March 2017 suspension period mentioned above, from the green certificates issued, the transport and system operator, C.N. Transelectrica S.A., defers from trading on the green certificate market, including from transfer from the producer's account to the supplier's account in order to comply with the annual mandatory quota, a number of green certificates, as detailed above.

The deferred green certificates shall be released, in order to be traded, monthly, in instalments, starting with the end date of the suspension period. For example: (i) for wind power plants, the deferred green certificates shall be released starting with 1 January 2018, pro rata to the average monthly number of green certificates deferred during 1 July 2013 – 31 March 2017 considering the aggregate number of green certificates deferred during such period; and (ii) for solar power plants, the deferred green certificates shall be released starting with 1 April 2017, pro rata to the average monthly number of green certificates deferred during 1 July 2013 – 31 March 2017 considering the aggregate number of green certificates deferred during such period. The release of the deferred green certificates shall be finalized until 31 December 2020.

Generally, energy producers themselves, if registered as balancing responsible party, or through another party, registered as balancing

responsible party, must assume a responsibility towards the transport and system operator, C.N. Transelectrica S.A., as concerns balancing the deviation between the forecasted production and the real production. In this respect, the transport and system operator, C.N. Transelectrica S.A., shall be notified regarding the energy quantities to be delivered in the system through physical notifications. In addition to the green certificates deferral detailed above, according to the currently applicable legislation, in case the energy delivered exceeds the one mentioned in the hourly physical notifications transmitted to the transport and system operator, C.N. Transelectrica S.A., no green certificates shall be received by renewable energy producers in question for the exceeding energy quantities.

Also, in order to reflect the requirements of the European Commission expressed during the negotiations for the authorisation of the renewable energy promotion system, Law No. 220/2008 provides for a mechanism purporting to avoid the overall overcompensation of one or more technologies. In this respect, ANRE monitors the producers, beneficiaries of the promotion system, and prepares annual reports that are available to the public on its website. If, based on such reports, it results that the specific parameters for each technology are different from the ones taken into consideration for the calculation made upon the authorisation of the promotion system, which may lead to overcompensation, ANRE proposes measures for reducing the number of green certificates currently provided by Law No. 220/2008.

Overcompensation is defined as the situation where, taking into consideration the specific medium technical and economic indicators annually realised for each technology, from the cost-benefit analysis made for the set of production capacities using the same technology, it results an internal rate of return with 10% higher than the value taken into consideration for the technology in question upon the authorization of the promotion system. Cost-benefit analysis means the economic analysis performed in view of determining the profitability of investments made in the production of electricity from renewable sources, carried out by using the updating technique applied to the investment costs, the exploitation costs and the revenues resulting from the operating life of the projects, whilst the internal rate of return is the indicator resulting from a cost-benefit analysis expressing the profitability of an investment project, namely the updating rate for which the updated revenues are equal to the updated expenses.

The Monitoring Methodology provides additional details on the overcompensation issue and states that, if, based on the performed analysis, it results that the system leads to overcompensation for one or more categories of technology, ANRE re-evaluates the number of green certificates granted to each category of technology for producing energy from renewable sources, in order for the internal rate of return for each category of technology, at aggregate level, to be equal to the internal rate of return reference value for the relevant technology. The internal rate of return reference values are defined as the values of the internal rates of return taken into consideration for each technology, upon the authorisation of the promotion system, comprised in the Authorisation Decision issued by the European Commission C (2011) 4,938 dated 13 July 2011. For example, the internal rates of return are 10.9% for new wind power plants and 11.6% for solar.

The results of the overcompensation analysis are included in an annual report to be published on the website of ANRE each December, during the application of the promotion system. Furthermore, if the case, ANRE prepares a draft Government Decision for the approval of the reduced number of

green certificates, applicable to renewable energy capacities that begin production of electricity after 1 January of the year following the issuance of the relevant decision, and valid during the application of the promotion system according to the law. Such draft decision is transmitted for approval to the Government, as provided by the law.

In accordance with the above mentioned legal requirements, ANRE published on its web site the 2012 Report on the monitoring of the renewable energy promotion system, and based on such report, the Government issued Decision No. 994/2013 dated 11 December 2013 whereby the number of green certificates to be grated, to certain renewable energy producers has been reduced as follows: (a) 0.5 green certificates, until 2017 and 0.25 green certificates after 2018, for each 1 MW produced and delivered by wind energy producers; (b) 3 green certificates for each 1 MW produced and delivered by solar energy producers; and (c) 0.7 green certificates for each 1 MW produced and delivered, if the hydropower plants are new and their installed capacity is maximum 10 MW. The Law for the Approval of GEO No. 57/2013 clarified that there will be no overlapping between the deferral of green certificates detailed above and the reduction as a result of the overcompensation, the latter being applicable only to producers accredited after 1 January 2014, whilst the deferral shall apply to producers accredited before such date.

In furtherance, ANRE published its 2013 Report regarding the analysis on overcompensation of the green certificates promotion system for renewable energy. According to this 2013 Report, the Romanian authority established that from the updated cost-benefit analysis for 2013 at aggregate level for each renewable energy technology, taking into consideration the resulting indicators from the mediation of the costs and according to the capacities estimated to be commissioned, no overcompensation risk has been identified. Therefore, it will not be necessary to reduce the number of green certificates to be granted to E-RES producers accredited after 1 January 2015.

In line with the requirements of the European Commission and of the Romanian Ministry of Economy, power plants that received an additional state aid shall receive a reduced number of green certificates, determined by ANRE by reducing the number of green certificates provided by Law No. 220/2008, as the case may be, by diminishing the reference value of the investment per MW with the value of the state aid received for each MW and maintaining the value of the internal rate of return taken into consideration for the calculations made available to the European Commission for the purpose of the authorization of the Romanian E-RES promotion system (e.g., 11.6% for solar power plants). In case of producers affected by the rule regarding the deferral from trading of certain green certificates that received other state aid, the number of green certificates resulting after their reduction, as detailed above, and the relevant deferral should not be less than 1. If, as a result of the reduction mentioned above, the resulting number of green certificates a producer is entitled to receive is less than 1, then the deferral provisions shall not apply to the producer in question.

A producer that develops a project with an installed capacity exceeding 125 MW, which complies with the requirements established in order to benefit from the E-RES promotion system provided by Law No. 220/2008, prepares and transmits to the European Commission the necessary documentation for the evaluation of the support measure, according to the Community guidelines on state aid for environmental protection (2008/C 82/01), published in the Official Journal of the European Union No. C82 dated 1 April 2008.

Such producer shall benefit from the E-RES promotion system provided by Law No. 220/2008 only after receipt of the relevant authorisation decision from the European Commission and only for the production technologies for E-RES mentioned in the authorisation decision, respectively after the finalization of the detailed evaluation of the support. After receiving the European Commission's authorisation decision, ANRE shall issue to the producer in question the relevant accreditation decision which may provide for a reduced number of green certificates, in accordance with the European Commission's authorisation decision.

Correlatively to the entitlement of renewable energy producers to receive green certificates, electricity suppliers are compelled to purchase a certain number of green certificates depending on the electricity that they supply annually to the consumers. In case the suppliers do not reach the annual mandatory quota, they are compelled to pay a penalty.

Furthermore, GEO No. 57/2013 provides for an exception to the obligation to acquire green certificates. Accordingly, a certain percentage of energy delivered to end consumers shall be exempted from the mandatory quota of acquisition of green certificate, in compliance with the applicable European legislation. The conditions applicable to such exemption, as well as the exemption mechanism, the exempted quantities and the details regarding the relevant annual programs for increasing energy efficiency are to be established separately through a Government Decision, after their notification to the European Commission and the issuance by the latter of the relevant authorization decision. A new Government decision is likely to be adopted in the near future in relation to this point, establishing the details and mechanism for the application of such an exemption. While no draft of such Government Decision has been published yet, according to the publicly available information on this point, this is likely to benefit mainly energy intensive industries.

The promotion system shall apply for a period of 15 years, for the electricity produced in new power plants, and shall apply to renewable energy producers, including the electricity produced during the testing period, based on the accreditation decision issued by ANRE, if the operation is started by the end of 2016.

4. What are the principal regulatory bodies in the renewable energy sector?

The main regulator in the power field, including renewable energy, is the Romanian Energy Regulatory Authority ("ANRE"), organized as an independent public legal body of national interest under the Vice-Prime Minister's coordination.

ANRE's objective is to create and implement a proper regulatory system for electricity and gas markets in terms of efficiency, competition, transparency and consumer protection. ANRE is entirely financed from the state budget, through the budget of the Secretariat General of the Government, and the revenues obtained are fully paid to the state budget. ANRE revenues are obtained from licenses, authorizations and other regulatory activities levied upon the regulated companies and through funds provided by international organizations, as per the legal provisions applicable to public finances.

The Romanian Ministry of Economy, Trade and Business Environment also has responsibilities in defining Romania's energy policy.

5. What are the main permits/ licenses required for renewable energy projects?

In order to develop, construct and operate a renewable energy production facility a developer will need to follow a licensing process and to obtain certain specific licenses and approvals. The main stages of the development of a renewable energy production facility may be considered as being: (i) development up to the ready to build stage; (ii) construction stage; (iii) commissioning and operation.

The main authorizations/licenses to be obtained for an energy production facility development are: (a) a building permit: building permits will need to be obtained for the energy production facility, for the connection installation as well as for the access road; (b) a technical connection approval and the connection agreement; (c) a setting-up authorization; (d) an environmental authorization for operation stage; and (e) an electricity generation license.

(i) Authorizations to reach the ready to build stage

In order to reach the ready to build stage (allowing start of construction works), a renewable energy production facility needs to be authorized from two main perspectives: from the construction authorizations perspective and from the electrical (connection to the grid) perspective. Also, a setting-up authorization is to be obtained from ANRE in order to be able to start building the energy production facility.

(ii) Authorizations for building-up the power plant

As a main rule, under Romanian law, performance of construction works is allowed only on the plots of land located inside the built-up area of the towns or communes, while only certain construction works expressly provided by the applicable legislation being allowed to be performed outside the built-up area of the towns or communes (i.e., infrastructure, communications, and agricultural constructions), and in this respect a building permit should be obtained.

Pursuant to the Constructions Law No. 50/1991 dated 29 July 1991 regarding the authorisation of construction works, as subsequently amended (the "Constructions Law"), the procedure for the issuance of the building permit consists on the following steps:

- *Obtaining the city planning certificate*

The city planning certificate ("CU") is a document issued by the Mayor's Office or by the President of the County Council, as the case may be, and contains a summary of the territorial arrangement and city planning regulations applicable to a particular plot of land.

- *Obtaining the Zonal Urbanism Plan, if the case*

In the event that the technical parameters of the intended investment do not comply with the existing urbanism documentation and therefore requiring several derogations or in the event that the existing urbanism documentation does not contain enough information in order to integrate the investment in the urbanism regulations, through the CU it would be required to prior obtain the approval for a new Zonal Urbanism Plan integrating the intended investment.

- *Environmental impact assessment*

The Constructions Law provides as a preliminary step in the procedure for the issuance of the building permit, an initial assessment of the investment as well as the establishment of the necessity to evaluate its impact on the environment, to be performed by the competent environmental protection authorities.

An environmental approval (*acord de mediu*) is requested prior to lodging the application for the issuance of the building permit.

- *Obtaining the prior approvals and permits for building permit*

The CU provides that the applicant shall be requested to obtain several permits and approvals related to urban utilities and infrastructure (e.g., sewage and water supply, electricity supply, thermal power supply, gas supply, communication, sanitation services), grid connection technical approval, fire protection, public health and civil protection as well as other specific approvals determined based on the location and investment's specifics.

- *Preparing the construction's technical documentation*

For the purpose of the building permit application, a specific technical documentation elaborated pursuant to the requirements contained in the Constructions Law is to be elaborated and signed by specialized designers. The technical documentation should strictly comply with the provisions of the CU, with the content of the environmental approval, as well as with the provisions of the permits and approvals listed in the CU.

- *Filing the application and obtaining a building permit*

A building permit is issued by the Mayor's Office or by the President of the County Council, as the case may be, on the basis and in accordance with the CU, the approved Zonal Urbanism Plan if the case, the environmental approval and the technical documentation. A building permit has an initial validity period of no longer than 12 months from the date of its issuance (that may be extended once for a similar period), within which the beneficiary has the obligation to initiate the construction works and, consequently, its validity period is automatically extended for the entire duration of the construction works.

The building permit shall be issued only subject to the payment of a tax for authorization amounting to 1% of the estimated value of the authorized construction works. Upon completion of the works, the beneficiary has the obligation to calculate and pay the final value of the tax based on the real value of the construction works.

(iii) Grid connection approvals

According to Law No. 123/2012 dated 10 July 2012 on energy and gas, as subsequently amended (the "New Energy Law"): (i) guaranteed access and priority dispatch is granted to renewable energy and energy produced in high efficiency cogeneration; and (ii) priority access and priority dispatch is granted to renewable energy and energy produced in high efficiency cogeneration in power plants having an installed capacity of maximum 1 MW, as long as the safety of the National Electro-energetic System is not affected.

The Regulation for connection of users to the public interest energy network, approved by the ANRE Order No. 59/2013 dated 2 August 2013 (the "Connection Regulation") provides that any applicant who intends to connect to the grid must obtain a technical connection approval and conclude a connection agreement with the grid operator. Upon completion of the construction works and conclusion of the taking-over certificate, the renewable energy producer shall, among others, have the obligation to energize the utilization installation and obtain the grid connection certificate.

The technical connection approval is required before commencing any grid connection or grid reinforcement works. The technical

connection approval is valid until the issuance of the grid connection certificate. Also, the technical connection approval shall cease its validity, among others, if, within 12 months as of its issuance, the relevant connection agreement has not been concluded.

After obtaining the technical connection approval, the applicant and the grid operator that issued the technical connection approval enter into a connection agreement, based on which the grid operator will ensure the design, construction and commissioning of the connection installation.

(iv) Setting-up authorisation

The setting-up authorisation is the permit granting to a beneficiary the permission to build or to re-technologize and to commission capacities for the transmission, distribution or production of energy.

The setting-up authorisation may be requested and obtained only after the obtaining of the technical connection approval issued by the grid operator, the financial resources are secured and following entering into agreements with contractors for carrying out construction activities. The setting-up authorization may be requested prior to starting the construction works in relation to the generation capacity.

(v) Construction stage

When the project has reached the ready to build stage the construction works may be initiated based on relevant agreements to be concluded with specialized contractors.

After the issuance of the building permit, the initiation of the construction works should be notified to the issuing authority and to the territorial inspectorate in constructions prior to the effective start of the works, together with the certifying documents for the payment of the tax in amount of 0.1% of the value of the authorized works. During the execution of the construction works, a tax in the amount of 0.7% of the construction expenses is payable monthly to the Romanian State Inspectorate for Constructions and a tax in the amount of 0.5% of the construction expenses is payable one time to the Social House of Constructors.

Upon completion of the construction works and conclusion of the taking-over certificate, the beneficiary shall have the following obligations before starting operation: (a) to notify within 15 days the completion of the works to the Romanian State Inspectorate for Constructions and to calculate and pay the final tax for the building permit based on the value of the authorized construction works; (b) to declare and register the construction with the fiscal authorities for tax purposes no later than 30 days upon construction works completion; (c) to energize the utilization installation and obtain the grid connection certificate; (d) to obtain an environmental authorization in order to carry out production activities; and (e) to request and to obtain from ANRE the electricity generation licence for the electric power generation capacities.

(vi) Operation stage

Following the finalization of the construction works and successful testing (which may not be longer than 60 days), the commissioning formalities will be undertaken and the energy production facility may start operation based on a specific electricity generation license to be issued by ANRE. Also, given that the energy production activity is considered to have an impact on the environment, an environmental authorisation should be obtained before starting operation.

In order to benefit of the support scheme, an ANRE's decision for the accreditation of E-RES power plants (*decizie de acreditare*) should to be obtained.

Subsequently, in order to receive green certificates the owner of the power plant will need to register with C.N. Transelectrica S.A. (the transmission network operator) in the Register of the beneficiaries of green certificates and of the green certificates issued and to transmit monthly to C.N. Transelectrica SA the documents necessary for the issuance of the green certificates.

The owner of the power plant will also need to register with OPCOM S.A. (the market operator) in order to trade the green certificates on the Green Certificates Market as well as in order to trade energy on the specific markets organized on the OPCOM S.A. platform.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Although several tax incentives were provided in the past by Romanian legislation to companies investing in renewable energy (e.g., the guarantee of maximum 50% of the value of medium and long-term loans; tax and fee exemptions or reductions for reinvested profits for a period of three years from an investment inception), the respective incentives were repealed in July 2010.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Through Law No. 220/2008, Romania has chosen to apply the mandatory quota system, combined with the trading of green certificates which has the advantage of allowing a fast growth of renewable energy, despite higher costs.

Electricity suppliers are compelled to purchase a certain number of green certificates relative to the amount of electricity annually supplied by them to the consumers.

For years 2010 – 2013, the mandatory quotas of renewable energy that the suppliers have to comply with were set up by Law No. 220/2008 as follows: for 2010 – 8.3%; for 2011 – 10%; for 2012 – 12%; and for 2013 – 14%.

Law No. 220/2008 as amended by the Law for the Approval of GEO No. 57/2013 stipulates a different mechanism for determining the applicable quotas in respect of the 2014-2020 period, as follows: "Starting with 2014, ANRE monitors yearly the annual quotas of renewable energy that benefit from the green certificate promotion system and, depending on the degree of compliance with the national target and on the impact on the end consumer, it estimates, publishes on its website and informs the Government on 30 June of the year in question, at the latest, on the level of the mandatory annual quota of renewable energy that benefits from the green certificate promotion system for the following year. For 2015 – 2020, the mandatory annual quota of renewable energy that benefits from the green certificate promotion system is established annually and is approved through a Government Decision, at the proposal of the Energy Department, within 60 days as from its communication by ANRE."

In respect of the quota for 2014, Law No. 220/2008 currently provides that ANRE determines the quota of renewable energy that benefits from the green certificate promotion system, publishes it on its website within maximum 3 days from the coming into force of the Law, informs the Government in this respect, and the latter shall approve it through a Government Decision, at the proposal of the Energy Department, on 31 March 2014, at the latest. Also, for 2014, ANRE determines and

publishes on its website, within maximum 3 days from the coming into force of the Law, the estimated mandatory annual acquisition quota of green certificates, the number of green certificates estimated to be issued based on the information regarding the estimated renewable to be produced and the final energy consumption. Subsequently, the quota of renewable energy that benefits from the Romanian green certificates promotion system for 2014 has been established by the Romanian Government, through Government Decision No. 224/2014, at 11.1% from the gross final energy consumption, below the one applicable in 2013 (which was at 14%).

As a general rule Law No. 220/2008 provides that in case the suppliers do not reach the annual mandatory quota, they are compelled to pay to the Environmental Fund Administration a penalty of € 110 for each green certificate they were unable to buy. Starting with 2011, the amount of the penalty is annually indexed by ANRE according to the average annual inflation rate for the previous year, determined at the European Union, Eurozone level, officially communicated by EUROSTAT. Currently, according to ANRE Order No. 14/2014 updating the thresholds for trading green certificates and the equivalent value of an un-purchased green certificate, applicable for 2014, the amount of the penalty to be paid by suppliers in case of failure to comply with the annual mandatory quota for 2014 is RON 532.44, respectively € 119.293.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Renewable energy producers which obtain green certificates based on the quantity of renewable energy delivered to the grid are able to sell them in a competitive system, and obtain extra income in addition to the income generated by the sale of electricity.

According to the New Energy Law, energy producers have the obligation to offer publicly and non-discriminating on the competitive market all energy available. Energy transactions are made on the competitive market in a transparent, public, centralized and non-discriminating manner. On the competitive market, transactions are wholesale and retail, according to the ANRE regulations, and the prices are determined according to the request-offer method, as a result of a competitive mechanism.

Similarly to energy trading, according to GEO No. 57/2013 as approved by the Law for the Approval of GEO No. 57/2013, green certificates should be traded in a transparent, centralised and non-discrimination on the centralised markets managed by the market operator – OPCOM S.A. Therefore, starting with 1 July 2013, all transaction with green certificates are made on the platforms of OPCOM S.A. as it is no longer allowed to enter into bilateral green certificates sale-purchase agreements, outside such platforms (registration with OPCOM S.A. where such agreements may be concluded is currently opened only to accredited renewable energy producers).

Green certificates are traded separately on a green certificates market, the sale of green certificates not being conditioned upon or linked to the trading of the renewable energy. The trading price of green certificates has both a floor and a ceiling established by law, to protect both investors (minimum price guarantee) and consumers (maximum price guarantee). According to Law No. 220/2008, for the period 2008 – 2025, the trading value of green certificates shall be limited between: a minimum trading value of €27/certificate and a maximum trading value of €55/certificate, and starting with 2011 the values mentioned above shall be annually indexed by ANRE according to the average annual inflation rate for the previous year, determined at the

European Union, Eurozone level, officially communicated by EUROSTAT. Starting with 2025 the green certificates trading value shall be the one established on the green certificates market which cannot be less than the minimum trading value applicable in 2025, annually indexed. For 2014, the minimum trading value has been increased from € 27 up to € 29.280 and the maximum trading value has been increased from € 55 up to € 59.647.

Pursuant to data published by OPCOM, as market operator, the trading value on the centralized market of green certificates was at the maximum level of €55 per certificate in 2009, 2010, 2011 and 2102. In 2013, the average trading price of green certificate decreased to € 42.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Romania has signed the Kyoto Protocol in 1999 and has ratified it in 2001 through Law No. 3/2001 dated 2 February 2001 on ratifying the Kyoto Protocol. Romania has thereby undertaken to achieve until 2020 a target of 21% reduction of greenhouse gas ("GHG") emissions (mainly CO2), in reference to the base year 1989.

As a Member State of the European Union, Romania applies the EU Emissions Trading System ("EU-ETS").

In Romania, similarly to the other European Union Member States, the system works by putting a limit on overall emissions from high-emitting industry sectors, limit that is reduced each year. Within this limit, companies can buy and sell emission allowances as needed. It is considered that this "cap-and-trade" approach gives companies the flexibility they need to cut their emissions in the most cost-effective way.

Therefore, a cap is set on the total amount of GHGs that can be emitted by all participating installations. Emission allowances/certificates are the currency of the EU ETS, and the limit on the total number available gives them a value. Each allowance gives the holder the right to emit 1 tonne of CO2, the main GHG, or the equivalent amount of 2 more powerful greenhouse gases, nitrous oxide (N2O) and perfluorocarbons (PFCs).

The EU-ETS was divided into three phases: (i) 2005 – 2007; (ii) 2008 – 2012; and (iii) 2013 – 2020.

The third phase of the EU-ETS, currently in place, is developed for a period of eight years, from 1 January 2013 to 31 December 2020. For this third phase, the revised ETS Directive (Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community), introduces the concept of a harmonized approach at EU level for the allocation of GHG Certificates.

As from the third trading period, there will be a single EU-wide cap on the number of GHG Certificates and National allocations plans will not be needed anymore.

According to the Government Decision No. 780/2006 dated 14 June 2006 regarding the establishment of emissions trading in greenhouse gas emissions, as subsequently amended (the "GHG Trading GD"), operators that generate GHG should hold the relevant authorisation issued by the central public authority for environmental protection to be issued in accordance with the Procedure for the issuance of the authorisation for the emission of greenhouse gases for the period 2013 – 2020, approved by Order of the Ministry of Environment and Forests No. 3420/2012 dated 12 September 2012, as subsequently amended.

GHG Certificates for emissions are auctioned off or allocated for free, and can subsequently be traded. Installations should monitor and report their CO2 emissions, ensuring they hand in enough allowances to the authorities to cover their emissions. If emission exceeds what is permitted by its allowances, an installation must purchase allowances from others. In case of failure to comply with the obligation to hand in the relevant allowances even after purchasing from others, the participant in question shall be sanctioned by a fine. Conversely, if an installation has performed well at reducing its emissions, it can sell its leftover credits.

Whereas the vast majority of GHG Certificates was previously allocated for free by Governments, to stimulate the adoption of clean technologies, starting from 2013 the basic rule for allocation to the electricity generating sector will be the acquisition of GHG Certificates through public auction, except for the one produced from waste gases and transitional derogations granted to some Member States.

By way of exception Government Decision No. 1096/2013 dated 11 December 2013 for the approval the transitional free allocation of GHG Certificates mechanism to electricity producers, for the period 2013 – 2020, including the National Investment Plan ("GD No. 1096/2013"), refers to electricity producers that have installations that were in operation until 31 December 2008 or whose investment process was initiated by the same date, which shall be allocated transitional free GHG Certificates, provided that they use the allocated GHG Certificates in the exclusive scope of financing the investments set out in the National Investment Plan and that receive, for a transition period, GHG Certificates for free.

From the rule of no free allocation to electricity production a general exception is provided at the EU level (Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC), according to which in order to prevent competition distortion, free allocations are given to distinct heating, as well as to high efficiency cogeneration. Nonetheless, in each year subsequent to 2013, the total allocation to such installation in respect of the production of heat should be adjusted by a linear factor of 1.74% applicable in order to determine the EU-wide cap.

Also, according to the above mentioned EU regulations and respectively to the GHG Trading GD, since 1 January 2012, aviation is included in the EU-ETS trading scheme. However, it is specifically regulated, GHG Certificates corresponding to the aviation activities, being allocated free of charge at the rate of 85%, the remaining 15% being acquired by auction. The allocation for free of the GHG Certificates for aviation is regulated by the Order of the Ministry of Environment and Forests No. 2851/2011 dated 9 December 2011 for the approval of the allocation of the certificates for greenhouse gas emissions for free for aviation activities for 2012 and for the period 2013 – 2020.

In Romania, the framework for the auctioning procedure of GHG Certificates was implemented by the Government Emergency Ordinance No. 115/2011 dated 21 December 2011 on establishing the institutional framework and authorization of the Government, through the Ministry of Public Finance, to auction emission certificates for greenhouse gas emissions attributable to Romania in the European Union, as

subsequently amended. The trading of the GHG Certificates is regulated by GHG Trading GD.

In accordance with the Commission Regulation (EU) No. 1031/2010 of 12 November 2010 on the timing, administration and other aspects of auctioning of greenhouse gas emission allowances pursuant to Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowances trading within the Community, in order to take part in the auctions with GHG Certificates, energy producers should be duly authorised.

For the Romanian operators, ANRE issues the relevant authorisation based on the rules and procedure provided by the Regulation for the authorisation of energy and gas suppliers in view of their access to auctions with greenhouse gases on the joint platform, according to the EU Commission Regulation (EU) No. 1031/2010 of 12 November 2010 on the timing, administration and other aspects of auctioning of greenhouse gas emission allowances pursuant to Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowances trading within the Community, approved by ANRE Order No. 2/2013 dated 23 January 2013.

In Romania, the reference trading price is computed as the simple average of the price of GHG Certificates on the EEX commune platform, for the EU, for trading sessions in the considered period (according to GD No. 1096/2013. For 1 April 2014, the Energy Department within the Romanian Government announced that the reference price for 1 GHG Certificate is of € 5.89). Furthermore, according to GHG Trading GD, for the period 2013 – 2020, in case of failure to comply with the obligation to hand in the relevant allowances even after purchasing from others, the participant in question shall be sanctioned by a fine of € 100, payable in RON at the exchange rate RON / EUR of the National Bank of Romania on 1 May of the year in question, for each 1 tonne of CO2 for which the operator fails to hand in the GHG Certificates. The amount collected from such fines are revenues of the Environmental Fund.

10. Do renewable energy based power plants have priority for connection to the grid?

Renewable energy producers, for the energy that benefits from the promotion system provided by Law No. 220/2008, contracted and sold on the energy market, have guaranteed access to the electric transportation and distribution grid. The grid operators shall ensure the transmission and priority dispatch of renewable energy for all producers, irrespective of their capacity, based on transparent and non-discriminating criteria, having the possibility to modify the relevant notifications during an operation day, according to the ANRE regulations, so that the limitation or interruption of renewable energy production is made only in exceptional situations, if such action is indispensable for the maintaining of the stability and safety of the National Energetic System.

Furthermore, renewable energy has priority access to the transportation and distribution grid as long as the safety of the National Electro-energetic System is not affected.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

Romanian legislation does not provide specific incentives for domestic manufacturing of equipment or materials used in the construction of renewable energy based power plants like those available for the production of renewable energy.

However, the Romanian market benefits from various incentives that are aimed at fostering investments (which are continually adapted to EC requirements) among which are investments in the renewable energy sector.

Investment incentives may be granted to investments through State aid measures initiated on the basis of the general framework provided in GEO No. 85/2008. The Romanian Centre for Promoting Trade and Foreign Investments acts as the contact point in relations between investors and public authorities, providing technical assistance and guidance to the investors, upon request, about the available support measures.

Pursuant to GEO No. 85/2008 on stimulating investments, support to investments is granted through various incentives falling under the State aid regime, including non-refundable financial allocations to purchase tangible and intangible assets, allocations for newly created jobs, interest bonuses or premiums granted upon contracting credits and other facilities provided by applicable legislation.

Such incentives may be granted through State aid support schemes or through ad hoc individual State aid offered by State aid grantors (including various authorities and institutions at all levels of government, public institutions involved in the privatization process, and other State-controlled bodies or enterprises).

In the energy sector, such incentives may be granted for the generation and supply of electricity and heat, as well as for the production of equipment that increases energy efficiency and utilizes energy produced from renewable sources.

An investment project cannot cumulate financing from non-refundable financial allocations from the EU or other grantors with State aid measures adopted further to the implementation of the GEO No. 85/2008.

12. What are the other incentives available to renewable energy generation companies?

Following Romania's accession to the European Union in 2007, Romanian investors may benefit from EU financial support under the Structural Funds and Cohesion Funds, as well as Community Initiatives and Community Programs.

For 2007 - 2013, investors in Romania were entitled to receive financial support from several EU funds, including: (i) the European Regional Development Fund; (ii) the European Social Fund; (iii) the European Cohesion Fund; and two Complementary Actions, namely: (a) the European Fund for Agriculture and Rural Development; and (b) the European Fund for Fishing.

For 2014 – 2020, the proceedings for the notification of the relevant Partnership Agreement to the European Commission are currently ongoing. The Romanian Ministry of EU Funds announced on 1 April 2014 that Romania submitted its official Partnership Agreement Proposal to the European Commission. Thus, Romania is the 13th Member State to officially submit its Partnership Agreement Proposal.

However, it is yet to be determined whether the proposal will be accepted as such by the European Commission and how the financial support will function in Romania and how it will be implemented in respect of incentivising renewable energy projects.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

The expectations and plans related to the extensive use of renewable energy sources in Romania consistently gain an increasing share in the total electricity generated, shaping up the Romanian renewable energy market in a more concrete format. Encouraging enough at this stage are the estimations of the country's potential with respect to the renewable energy sources, specifically: 1,200 GWh solar annual potential, 23,000 GWh wind annual potential and 40,000 GWh hydro annual potential. (Source: Romania's National Renewable Energy Action Plan). An important point to stress is that these figures are considered to represent a theoretical potential, given the technological, economical and environmental limitations and restrictions.

In 2013, renewable energy producers generated 6,100 GWh of energy, almost double compared to 2012, renewable energy representing approximately 20% of the total production capacity in Romania, and the estimated additional capacity to be installed by the end of 2014 is of 1,656.5 MW, resulting in an aggregate installed capacity of renewable sources by the end of 2014 of 6,005 MW (Source: web site of ANRE).

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GENERAL

1. What is the nature and importance of renewable energy in your country?

As Russia has abundant reserves of traditional energy resources, with the exception of hydroelectric power, renewable sources of energy in Russia have historically played a relatively small role in the country's fuel mix. However, the outlook is slowly beginning to change, as a number of policy initiatives have been undertaken to develop wind energy, hydropower, biofuels, geothermal power and solar energy.

In 2009 the Russian Government approved a set of Guidelines for State Policies in Increasing the Effectiveness of Use of Renewable Energy Sources for the period until 2020.[1] The Guidelines note that renewable sources of energy (save for large-scale hydroelectric power generation) currently provide only 1% of the total volume of electricity generated in Russia and state that this proportion should be increased. Under the Guidelines, it is planned that Russia will achieve the following targets for electricity generation based on renewable sources: in 2015 – 2.5%, and in 2020 – 4.5%. Recently, the Russian Government approved a new State Program on Energy Efficiency and Energy Sector Development to guarantee government financial support (including in the form of subsidies) to encourage the development of renewable energy in Russia.[2] Notably, this State Program refers to a less ambitious target of 2.5% for electricity generation based on renewable sources by 2020. In addition, the Russian Government's Energy Strategy for the period up to 2030[3] (adopted in 2009) also addresses the development of renewable energy sources and energy-saving technologies.

In December 2010, the International Finance Corporation (IFC) officially launched its five-year Russia Renewable Energy Program, which seeks to create a platform for promoting the development of renewable energy, stimulating investment and supporting a sustainable renewable energy market in Russia through assistance in the establishment of a favorable regulatory regime, the development of national potential and expanding access to financing.[4]

Hydropower potential

Hydropower is one of Russia's greatest energy resources. 9% of the world's hydropower resources are located in Russian territory, mostly in Central and Eastern Siberia and in the Far East. The North Caucasus and western Urals are also understood to have considerable hydropower potential.[5]

Russia currently has 102 hydro-electric plants in operation with a capacity of over 100 MW. Russia is the world's fifth largest producer of hydropower, with a total installed capacity of hydroelectric units of about 46,000 MW. In 2011 hydroelectric plants accounted for 15.2% of Russia's total electric power

1 Government Decree No. 1-r, dated 8 January 2009.

2 Government Decree No. 512-r, dated 3 April 2013, which replaced the old State Program approved by Government Decree No. 2446-r , dated 27 December 2010.

3 Government Decree No. 1715-r, dated 13 November 2009.

4 IFC official press release, dated 9 December 2010.

5 minenergo.gov.ru/activity/powerindustry/power sector/ structure/manufacture_principal_views/

production.[6] Moreover, a recently approved national scheme of territorial power sector development until 2030 involves the construction (expansion) of a significant number of large-scale hydro-electric plants with a capacity of over 100 MW. [7]

Russia's plan for maximizing the use of hydropower generation in the country has been reflected also in the investment program of RusHydro, the state-controlled hydropower generator. In June 2012 Rushydro approved an investment program for the period of 2013-2016 in an amount of RUB 382 billion. Rushydro is planning to complete a number of projects within the framework of this program, including the construction of the Boguchanskaya, Ust-Srednekanskaya, Zagorskaya, Bizhne-Byreiskaya and Gotsatlinskaya hydro-electric plants.

Wind power potential

Russia has extensive wind resources, in particular along the Pacific and Arctic coasts and in the southern steppes, although its total installed wind power capacity is not significant. According to a recently released report of the Russian Association of the Wind Power Industry[8] the total capacity of wind projects at different stages of development (including feasibility) amounts to 3,000 MW, and total installed capacity for all announced projects amounts to 10,000 MW. The national scheme of territorial power sector development until 2030 envisages the construction (expansion) of up to 16 wind farms in Russia by 2030.[9] Most of the power projects are located in the south and north-western parts of Russia. Five major wind power projects are planned for the Southern Federal District, including the 100 MW Astrakhan wind farm and the 900 MW Volgograd Lower Volga project, both of which are likely to be commissioned by 2030. Two wind farms having a capacity of 150 MW and 300 MW, respectively are also planned to be launched by 2025 in Russia's Kalmykia Republic.

Biofuels potential

Russia has approximately 24% of the world's forests located on its territory. Forests cover approximately 45% of the entire landmass of Russia.[10] However, biofuels have an insignificant share in the overall energy production matrix of Russia, estimated at 1.2%, with biomass accounting for only 0.5%.[11] The Ministry of Energy also reports that there are no government-backed biofuel projects in operation at this time. The majority of biofuel ventures in Russia are supported by regional governments or financed by foreign investors. In most cases these projects are in the pilot phase and produce little power.[12]

However, the Government is making efforts to improve the regulation of bioenergy in Russia. In April 2012, the Government approved the Complex Program for the Development of Biotechnologies for the period until 2020[13] which addresses the establishment of the technological and technical basis for the development of bioenergy and support for regional projects in the sphere of production of energy and heat from biofuel. The bioenergy measures envisaged by the Program are to be implemented in the framework of the national

6 Ibid

7 Government Decree No. 2084-r, dated 11 November 2013;

8 http://rawi.ru/en/main.php?lang=EN;

9 Government Decree No. 2084-r, dated 11 November 2013;

10 http://lesa-rossii.ru/

11 Global Agriculture Information network Report: Russian Biofuels Sector Update, May 2013;

12 Global Agriculture Information Network Report: Russian Biofuels Sector Update, May 2013;

13 VP-P8-2322.Complex Pogram for the Development of Biotechnologies in the Russian Federation for the period until 2020 approved by the Russian Government on 24 April 2012

program "On Energy Efficiency and Energy Development", which was recently approved by the Government to support biofuel production in Russia.[14]

The potential of forest biomass in Russia has been estimated at 373.6 million tonnes of equivalent fuel.[15] The use of biomass and waste for heat generation is considered to be economically viable in a number of Russian regions, and a number of pilot research projects have been undertaken. In particular, the Food and Agriculture Organization of the United Nations has conducted a forestry sector study in the Russian Far East in cooperation with the EBRD. This study has identified initial opportunities for liquid biofuel investments in this particular region due to a high volume of under-utilized low-quality wood, wood residues, and forest industry waste.[16] The Russian Federal Forestry Agency has developed a list of priority projects for biofuel production in Russia. The total value of investments in the forestry sector for biofuel production for the period of 2009-2016 is reported to be RUB 25.8 billion.[17] At the moment, the only significant biomass factory is the thermal electricity station "Beliy Ruchey" operating in Vologda oblast. Its energy capacity is estimated at 6 MW.[18]

Further, Russia is currently the second largest exporter of wood pellets to the EU after Canada. At present there are about 60 wood pellet processing facilities in Russia. The majority of these facilities are located in the Northwest, Central and Volga regions of Russia.[19]

There are also a number of projects that are being implemented as investment projects within the framework of national climate change policy. For example, a RUB 600 billion project to replace coal with biomass (wood residue) is being implemented at Onega in the northern Arkhangelsk region.[20]

With respect to biogas, currently there is no government program to promote the construction of biogas facilities in Russia. The few major biogas facilities operating in Russia include one in the Kaluga region that produces biogas from agricultural waste, having a thermal power capacity of 300 KW and electrical capacity of 200 KW. A number of agreements have been signed recently for the construction of an additional 50 bioenergy stations in Russia using agricultural waste, including in the Belgorod, Voronezh and Rostov regions. The planned energy capacity of these stations varies from 350 KW to 10 MW, with a total capacity equaling 120 MW.[21]

Geothermal power potential

Geothermal energy is used in Russia both for heat supply and for electricity generation. Russia's geothermal resources are located primarily in Kamchatka, the Kuril Islands, the

14 Clause 4 of VP-P8-2322, Complex Pogram for the Development of Biotechnologies in the Russian Federation for the period until 2020, approved by the Russian Government on 24 April 2012; Government Decree No. 512-r approving a national program "On Energy Efficiency and Energy Development", dated 3 April 2013.

15 Article: *The use of renewable energy sources in RF may begin in April* published by Itar-Tass, 26 February 2010

16 http://www.ebrd.com/pages/workingwithus/procurement/notices/csu/42057.shtml

17 Article: *20 priority projects in the forestry sector for biofuel production in Russia* published by IA Inforbio, May 2011

18 Global Agriculture Information Network Report: Russian Biofuels Sector Update, May 2013

19 Global Agriculture Information Network Report: Russian Biofuels Sector Update, May 2013

20 Decree of the Ministry of Economic Development No. 709 approving the list of projects implemented in accordance with article 6 of the Kyoto Protocol, dated 30 December 2010

21 Global Agriculture Information Network Report: Russian Biofuels Sector Update, May 2013

Northern Caucasus and in the Kaliningrad region and have an estimated combined potential of up to 2000 MW.[22] Currently there is understood to be somewhere in the range of 92-129 MW of geothermal power generation capacity in operation.[23] The approved geothermal roadmap for the period up to 2020 provides for the construction of geothermal power and heat plants with 336 MW (power) and 552 MW (heat) of installed capacity, respectively.[24] In 2011, a Russian-Icelandic inter-governmental agreement on cooperation in geothermal energy development was signed, under which the parties agreed to design and build geothermal energy-generating facilities in Russia. In June 2011, Rushydro signed a cooperation agreement with Reykjavík Geothermal to build geothermal power plants in Russia (primarily in Kamchatka), with total installed capacity of up to 200 MW.[25]

Solar energy potential

Russia's solar energy potential is greatest in the South-West of the country (the North Caucasus, and the Black and Caspian Sea regions) and the southern parts of Siberia and the Far East. The country is reported to have a total theoretical potential of 2,213 TWh/year, and to be planning to establish an overall solar capacity of 150 MW by 2020.[26] In the last few years Russia has been showing a significant interest in competing on the international market for producing solar equipment in order to boost its high-tech industry.

Currently, Russia has one full-scale solar power plant in operation, which opened in 2010 in the Belgorod region, having a capacity of 133.4 kWh/year.[27] In 2010 it was reported that LLC Hevel, a joint venture between the Russian high-tech companies Renova and Rosnano, had announced a plan to build a 12.3 MW solar power station in Kislovodsk.[28] In June 2011, the Government of the Republic of Dagestan and LLC Hevel Solar signed an agreement for, among other things, the construction of a 10 MW solar power plant in the Republic.[29] In addition, in November 2012, the Ministry of Economic Development, Industrial Policy and Trade of the Orenburg region and Avelar Solar Technology, a subsidiary of the Swiss Avelar Energy Group signed an investment agreement to build solar power plants with a capacity of no less than 25 MW.[30] In January 2013 it was reported that Fortum plans to build a solar power plant in Chelyabinsk with a capacity of 100 MW.[31] Grid-connected solar power plants rated for 5 to 25 MW are also being designed in Orenburg, Saratov, Rostov, and Omsk Regions, in the Republics of Bashkortostan and Altai.

2. What is the definition and coverage of renewable energy under the relevant legislation?

The definition of renewable energy sources for regulatory purposes is to be found in the principal law governing the Russian power sector, Federal Law of the Russian Federation "On Electric Power Industry", dated

22 http://www.geo-energy.org/pdf/reports/GEA_International_Market_Report_Final_May_2010.pdf
23 EBRD Renewable development initiative: Russia (country profile, 2009)
24 Report on Geothermal Energy Projects in Russia published in the Bulletin of Russian Academy of Physical Science, No. 1 2009
25 Rushydro official press release, dated 15 June 2011
26 Article: *Sunless Russia seeks more solar energy* published in International Business Times, 8 October 2010
27 http://rusecounion.ru/ang_renew_91110
28 Article: *Russia to build its first solar power station* published by RIA Novosti, dated 3 November 2010
29 Hevel official press-release, dated 16 June 2011
30 http://novostienergetiki.ru/solar-power-plants-with-capacity-over-25-mw-to-appear-in-orenburg-region/
31 http://www.bloomberg.com/news/2012-08-15/fortum-plans-300-million-solar-plant-in-russia-kommersant-says.html

26 March 2003 No. 35-FZ (the "Electricity Law")[32]. Renewable energy sources so defined include:

- solar energy;
- wind energy;
- water energy (including energy from waste water), excluding use of such energy at pumped hydroelectric power plants;
- tidal energy;
- wave energy;
- geothermal energy using natural underground heat carriers;
- low heat energy of earth, air and water with the use of special coolants;
- biomass, including plants specially grown for energy generation and trees, as well as industrial and consumer wastes (excluding wastes from the use of hydrocarbon material and fuel), biogas, gas separated from industrial and consumer waste dumps; and
- gas from coal workings.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The renewable energy sector is governed in particular by the Electricity Law, which sets out the main provisions for the trade in power and capacity derived from renewable energy sources. Further provisions are contained in resolutions of the Russian Government, decrees of the Russian President and orders of the Ministry of Energy. More detailed procedural rules are set out in instruments adopted by the governing body of the wholesale and retail electricity markets, the Market Council.[33]

Apart from the Electricity Law, the following are the principal laws and regulations concerning renewable energy sources:

- Federal Law No. 261-FZ "On Energy Saving and Increasing Energy Efficiency and on Amendments to Certain Legislative Acts", dated 23 November 2009. This law establishes a legal framework for activities supporting and promoting energy saving and increasing energy efficiency by, among other things, using renewable sources.
- Government Decree No. 1-r, approving the guidelines for state policy for increasing the effectiveness of the use of renewable energy sources for the period until 2020, dated 8 January 2009 (the "Policy Guidelines"). The Policy Guidelines outline proposed steps by state authorities to promote a greater use of renewable energy sources, and establish targets for electricity generation using renewable energy sources.
- Government Decree No. 1715-r, approving the Energy Strategy of the Russian Federation for the period until 2030, dated 13 November 2009 (the "Energy Strategy"). The Energy Strategy establishes the main principles, goals and priorities of the state's long-term energy policy, including in relation renewable energy sources.

[32] Article 3 of the Electricity Law

[33] Non-Commercial Partnership "Council of the Market for maintaining an effective system for the wholesale and retail trade in power and capacity" (the "Market Council").

- Government Resolution No. 426, approving the rules for qualifying generating facilities as operating using renewable energy sources, dated 3 June 2008 (the "Qualification Rules"). The Qualification Rules establish the criteria and procedure for the official recognition of generating facilities as operating using renewable energy sources, which can be granted pursuant to an application submitted by the facilities' owner to the Market Council.

- Government Resolution No. 850, approving the criteria for granting subsidies from the federal budget to compensate for the costs of technological connection of generating facilities with a capacity not exceeding 25 MW qualified as facilities using renewable energy sources, dated 20 October 2010 (the "Compensation Rules"). In addition to this, on 22 July 2013 the Ministry of Energy issued Order No. 380 approving the rules for granting subsidies from the federal budget so that renewable projects investors may benefit from the compensation scheme.

- Ministry of Energy Order No. 187 approving the Rules for maintaining the register of issuance and cancelation of certificates confirming volumes of power generated by generating facilities based on renewable energy sources, dated 17 November 2008 (the "Registration Rules"). The Registration Rules set out the procedure for maintaining a register of certificates confirming the quantity of power produced by generating facilities using renewable energy sources.

- Part XV of the rules of the wholesale power and capacity market (Government Resolution No. 1172), concerning the system of tenders for renewable generation projects to qualify for agreements for the delivery of renewable capacity.

- Government Resolution No. 117 with respect to certain issues related to certificates confirming the volumes of power produced by generating facilities using renewable energy sources, dated 17 February 2014. The Resolution, in particular, establishes a procedure for the issuance, amendment and cancellation of such certificates as well as maintenance of a register of them. (Previously the procedure for maintenance of the register was defined by the Ministry of Energy).

4. What are the principal regulatory bodies in the renewable energy sector?

The principal regulatory body having immediate responsibility for the administration of incentives for power generators using renewable sources is the Market Council, which has responsibility for the wholesale power market generally. In particular, the Market Council is responsible for recognizing generating facilities using renewable energy sources as qualifying generating facilities and for maintaining the register of certificates which confirm the volumes of power generated by them.

The Ministry of Energy and the Russian Government have joint responsibility for developing and adopting applicable subordinate legislation under the Electricity Law, with the adoption of detailed market rules being further delegated to the Market Council.

5. What are the main permits/licenses required for renewable energy projects?

In order to implement a renewable energy project, a generating company must obtain a number of permits and approvals as required by Russian law.

In principle, it is possible for generating companies to operate on either the wholesale or the retail electricity market. The wholesale market is open to generators whose level of installed capacity is equal to or exceeds 5 MW. Subject to limited exceptions, any generating object connected to the grid having a capacity of 25 MW or more can *only* sell its power and capacity on the wholesale market. Also participation in the tender system to enter into agreements for the delivery of renewable capacity described in response to question 7, below is only open to registered wholesale market participants. In order to be able to operate on the wholesale power market, a generator must be registered as a market participant, enter into the accession agreement governing participation in the trading system and a number of other standard form agreements covering grid connection, dispatch and various aspects of the trade in power and capacity, and fulfil certain technical requirements. The requirements for participating as a generator in the retail market are less extensive.

For the purposes of benefitting from the various forms of support available, a generating company using renewable energy sources has to obtain a *qualifying certificate* confirming volumes of power generated using renewable energy sources. The Market Council is responsible for issuing such certificates and maintaining the relevant register. For this purpose, the Market Council treats a facility as a qualifying facility operating on a basis of renewable energy sources if such facility:

- uses only renewable energy sources or a combination of renewable and other energy sources for generating purposes;
- is in operation (commissioned and not closed for repairs nor decommissioned);
- is connected to the grid and equipped with metering equipment as required by Russian law; and
- is included in the general scheme and program of long-term development of the electric power sector in a particular region of the Russian Federation where such facility is located.

In addition, power generating facilities are treated as hazardous industrial facilities the operation of which may require additional permits, including environmental approvals.[34]

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Taxpayers who invest in the creation of facilities that pertain to sources of renewable energy are permitted to apply for investment tax credit. The credit is given in the form of a deferral of profit tax and regional and local taxes (e.g., property tax, motor vehicle tax) for a term from 1 to 5 years. The credit is offered in respect of 100% of the value of the qualifying investment. The interest rate applicable to the deferred tax is to be within the range of half to three quarters of the Russian Central Bank's refinancing rate (being, since 14 September 2012, 8.25%).

[34] Federal law No. 174-FZ "On Ecological Expert Review" dated 23 November 1995; Federal law No. 7-FZ "On Environmental Protection" dated 10 January 2002; Federal Law No. 96-FZ "On Air Protection" dated 4 May 1999; Federal Law No. 116-FZ "On Industrial Safety of Hazardous Industrial Facilities" dated 21 July 1997.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

In general, the Electricity Law provides for the following possible support mechanisms for generating facilities using renewable energy sources:

- Either (a) the addition of a premium to the wholesale market price for power (such premium to be determined in accordance with a procedure to be approved by the Russian Government) or (b) preferential treatment of renewable generators in the capacity market.[35] In practice, the Government has chosen to implement the latter, as described below.

- A requirement for network companies to buy power for the purposes of compensating for line losses primarily from renewable energy sources.[36]

- Compensation by the state for the connection costs of renewable energy installations with an installed capacity of not more than 25 MW.[37]

Recent developments regarding these mechanisms include the following:

- In October 2012, the Russian Government issued a decree requiring the preparation of a set of measures to encourage renewable generation, including pricing parameters and a tariff calculation methodology for the supply of power generated from renewable sources for the compensation of line losses.[38] Although this package of measures was originally intended to be delivered in the second quarter of 2013, at the time of writing it is still in the process of being approved.[39]

- In April 2013, the Government issued a decree approving a new state program for energy efficiency and the development of the electric power sector to allocate resources from the Federal Budget, including for the purposes of subsidizing the network connection costs of renewable generation projects.[40] In May 2013, the Ministry of Energy issued a decree for the provision of such subsidies.[41]

- In May 2013, the Government issued a resolution to establish a mechanism to support renewable generation through the capacity market.[42] The resolution provides for a system of tenders for the selection of renewable generation projects which projects will, upon completion, be assured certain capacity payments over a period of time.

The support mechanisms envisaged are for the benefit of generating facilities that are acknowledged as qualifying facilities using renewable energy sources, as noted above. However, the support mechanisms are limited to solar, wind and small-scale (less than 25 MW) hydroelectric projects.

For the purposes of the capacity market support system, a certain volume of renewable generation projects is to be selected through an annual tender process, operated by the Commercial Operator of the power market (the Administrator of the Trading System). Successful bidders qualify to

35 Article 21(1) of the Electricity Law.
36 Article 32(3) of the Electricity Law.
37 Article 21(1) of the Electricity Law.
38 Government Decree No. 1839-r, dated 4 October 2012.
39 http://regulation.gov.ru/project/5441.html?point=view_project&stage=2&stage_id=2668
40 Decree No. 2446-r dated 27 December 2010, as amended by Decree No. 200-r, dated 16 February 2013.
41 Decree No. 380 dated 22 July 2013.
42 Resolution No. 449, dated 28 May 2013.

enter into long-term agreements for the delivery of renewable capacity ("ADRCs")[43], analogous to similar agreements that have existed for some time to support investment in conventional thermal generation. The contract entitles the operator of the project to capacity payments over a fifteen-year supply period calculated on a basis set out in the resolution that is intended to allow for recovery of capital invested and a certain rate of return (up to 14% for projects selected before 1 January 2015 and 12% for projects selected thereafter). The introduction of the ADRC system has also been accompanied by amendments to the Policy Guidelines to promote localization of renewable projects (i.e., a policy objective that relevant equipment be built in Russia). In order to qualify for the tender selection process, a project must meet certain minimum projected levels of localization, and a significant discount is applied to the capacity payments received by projects that do not in fact meet the target level.[44] The first tender for participation in the scheme was held in September 2013.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Russian law does not provide for any minimum price guarantee but, as noted above, makes general provision for an incentive mechanism through either the addition of a premium to the wholesale market price or preferential treatment in the capacity market, and the Russian Government has chosen the latter option (which provides assurance of a certain level of capacity payment for projects that are successful in the tender process). Further, the tariff regulation is to apply to the purchase of power from renewable generators for the compensation of line losses.[45]

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Having signed the Kyoto Protocol in 1999, Russia was the last country to ratify the agreement, which came into effect on 16 February 2005, and it has been relatively slow in implementing the measures necessary to establish a national trading program. Russia adopted a number of regulations between 2006 and 2008 in order to comply with its commitments under the first compliance period of the Kyoto Protocol (2008 – 2012) and to be eligible to transfer and acquire emission reduction units ("ERUs") generated by joint implementation projects ("JI Projects"). In particular, in May 2007 the Government issued key Resolution No. 332 (which is no longer in force), which outlined a procedure for reviewing and approving JI Projects. More than 40 JI Projects were submitted for approval under Resolution No. 332, but none were approved under that system.

In June 2009, the Russian Government issued a decree that required the preparation of further legislation aimed at establishing an operational emissions trading mechanism in Russia (in line with Article 17 of the Kyoto Protocol) and facilitating the procedure for approving JI Projects.[46] In October 2009, the Government reaffirmed Russia's interest in implementing the Kyoto protocol by introducing significant changes to the approval procedure for JI Projects, under Government Resolution No. 843. Public administration of JI Projects was primarily

[43] The full name is *"agreements for the delivery of capacity of qualifying generating objects functioning on the basis of renewable energy sources"*.

[44] Government Decree No. 861-r amending the Policy Guidelines, dated 28 May 2013.

[45] Article 3(2) of Regulation No. 1178, dated 29 December 2011, On Price Formation in the Sphere of Regulated Prices (Tariffs) in Electrical Power.

[46] Government Decree No. 884-r, dated 27 June 2009.

assigned to Sberbank, a major Russian bank, which was appointed as the operator of carbon units, with the Ministry of Economic Development ("MED") to act as a coordination point. JI Projects that were submitted under Resolution No. 332 could be resubmitted for approval through the new tender procedure, at the request of the investor (only Russian companies). This change resulted in the approval of the first Russian JI Projects through a number of tenders held by Sberbank.

In June 2011, the Russian President announced the need to make full use of the possibilities offered by the JI mechanism before the end of the first Kyoto Protocol compliance period and also stressed the need to amend applicable law in order to simplify the procedure for approving JI Projects. This resulted in the issue of a new regulation designed to simplify the approval process for JI Projects, which repealed Resolution No. 843.[47]

In December 2012 during the meeting held in Doha, Qatar, the parties to the Kyoto Protocol adopted new amendments to the Kyoto Protocol which include, among others, new quantitative emission limitation or reduction commitments for the second commitment period (2013-2020). Russia, which remains a party to the Protocol, decided not to undertake any quantitative commitments on reduction of greenhouse gas ("GHG") emissions under the Protocol, but instead chose to set a national target for limiting the level of GHG emissions.

In particular, on 30 September 2013 the President issued Decree No. 752 "On the Reduction of Emission of Greenhouse Gases" which establishes a national goal to achieve by 2020 a level of GHG emissions in the country not exceeding 75% of the 1990 level of such emissions. Following this Decree, on 2 April 2014 the Government approved a national action plan (specific measures) to achieve this national goal.[48]

10. Do renewable energy based power plants have priority for connection to the grid?

Power plants using renewable energy do not enjoy priority in connection. However, as noted above, there is provision for smaller renewable energy units to be granted subsidies from the federal budget towards connection costs.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

As noted above, recent amendments to the Policy Guidelines and the regulations for the support of renewable generation through the capacity market contain provisions to promote renewable generation facilities with a high degree of localization. For this purpose, the Government has introduced a numerical measure of localization (expressed as a percentage), and published target levels for the degree of localization of renewable generating facility of each type. These are:(i) for wind projects, 35% for 2014, rising to 65% from 2016; (ii) for solar projects, 50% for 2014, rising to 70% from 2016; and (iii) for hydroelectric projects, 20% for 2014 (with capacity less than 25 MW), rising to 65% from 2018.

[47] Government Resolution No. 780 dated 15 September 2011.

[48] Government Decree No. 504-r, dated 2 April 2014.

12. What are the other incentives available to renewable energy generation companies?

In addition to the measures already mentioned, the Policy Guidelines and Energy Strategy[49] envisage in general terms that further initiatives may be adopted by the Russian state aimed at promoting the renewable power sector and encouraging investment in it, but few details are given.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

If large scale (25 MW or more) hydroelectric stations are excluded, in 2009 the total installed capacity of generating facilities using renewable energy sources did not exceed 2200 MW, which was approximately 1% of Russia's total power generation capacity.[50] Likewise, the percentage of power generated from renewable sources did not exceed 1% (8.5 billion KWH) of the total volume of generation.[51] We are not aware of any officially published statistics breaking down this aggregate figure by specific types of renewable energy source on a country scale.

As already noted, however, large-scale hydroelectric stations make a significant contribution to Russia's power production (at approximately 15.2%).

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[49] Part III of the Policy Guidelines, Article 10 of the Energy Strategy.

[50] Part II of the Policy Guidelines.

[51] Ibid.

Serbia

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GENERAL

1. What is the nature and importance of renewable energy in your country?

In Serbia over 97% of gross final electricity consumption is covered by local generation. In 2012, the total supply of electricity reached up to 37,910 GWh, out of which 36,926 GWh was produced locally, mainly – in coal fired thermal power plants (approx. 70%) and hydropower plants, including small and pumped storage hydropower plants (approx. 28%). Serbia also imported 6,441 GWh and exported 5,457 GWh of electrical energy.

At the end of the first quarter of 2013, the operational capacity of hydropower plants in Serbia was 2,835 MW, including 44 MW in small hydropower plants and 614 MW in pumped storage. Also 2 MW in biogas power plants were operated, as well as 0.5 MW in wind and 2.4 MW in solar (photovoltaic) power plants.

Serbia has a promising potential for renewable energy, including a largely untapped hydropower potential, mainly for medium-sized and small power plants, of about 4.6 GW, as well as 2.3 TWh per year for wind, 50 MW for geothermal and 33 MW for solar energy. Biomass from wood and agricultural waste is arguably considered as the highest potential among all renewable energy sources at an estimated 19 TWh per year.

Following its commitments under the Treaty establishing the Energy Community, Serbia transposed the Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and, consequently, committed to a binding 27% target of energy from renewable energy sources in gross final energy consumption in 2020, compared to the share of 21.2% in 2009.

In June 2013, the Government adopted the National Renewable Energy Action Plan (NREAP), together with a revised forecast document on the measures of cooperation between the EU Member States and Contracting Parties of the Energy Community. The NREAP foresees achieving a 27.3% target of energy from renewable energy sources in 2020. It envisages increases of renewable energy shares in electricity to 36.6% from 28.7%, for heating and cooling to 30% from 28.7%, and for the transport sector to 10% from 0% in 2009.

To this end, as regards the production of electricity from renewable energy sources, Serbia is aiming for EUR 2 billion of investments, mostly from the private sector, to install 1.1 GWh of new renewable energy capacities starting from 2014, much of it by exploiting its hydropower potential. However, an ambitious project for the development of a 1 GW solar power park has been completely stopped in mid-2013 due to disagreements between investors and Serbian authorities.

It is also important to mention, that Serbia is the only Contracting Party of the Energy Community that plans to enter into a cooperation mechanism and to transfer excessive renewable energy to the EU Member States. Italy and Serbia concluded an agreement allowing for the electricity produced in the newly built 10 small hydropower plants in Serbia, as estimated at 976.9 MWh in the years 2016-2020, to be physically transferred and consumed in Italy.

The legislative framework regulating the renewable energy sector in Serbia guarantees favourable feed-in tariffs for electricity produced from renewable energy sources for a period of 12 years, after which power purchase guarantees are locked in at the market price. Moreover, competent institutions are further trying to improve the business environment for energy investors, including simplified authorisation procedures.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Renewable energy is defined by the Energy Law 2011 (as further amended) as energy produced from non-fossil renewable energy sources, such as: watercourses, biomass, wind, sun, biogas, landfill gas, sewage treatment plant gas and sources of geothermal energy.

The definition and coverage of renewable energy under the legislation in force is considered as corresponding with the respective concept established in the Directive 2009/28/EC. Furthermore, the coverage of the renewable energy sources, as defined by the Energy Law 2011, is not finite and may be therefore extended under the applicable legal acts in case new renewable energy technologies will require for regulation.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

Regulation of the renewable energy sector in Serbia is based on the domestic transposition and implementation of the measures stipulated in the Directive 2009/28/EC, as required under the terms and conditions elaborated by the Energy Community law. The legal framework for renewable energy is split among several laws and secondary legal acts.

The main law regulating the renewable energy sector in Serbia is the *Energy Law 2011* (as further amended), which defines the legislative framework for renewable energy, including the transport sector. It has transposed to a great extent the main principles arising from the Directive 2009/28/EC related to support measures for renewable energy producers of electricity, heat and for biofuel producers, as well as the definition of privileged producers eligible for support schemes, and the introduction of guarantees of origin for the electricity and heat produced from renewable energy sources.

The Energy Law 2011 foresees that implementing acts are to be adopted by the Government or Ministry responsible for energy. Currently, four Governmental decrees deal with feed-in tariffs for renewable energy technologies, acquiring the status of privileged producers, and the incentive fee for the promotion of electricity from renewable energy sources applied to final customers.

The following Governmental decrees, as adopted in January 2013, regulate the application of renewable energy support schemes in Serbia: *Decree on the Conditions and Procedure for Obtaining the Status of Privileged Electricity Producers*, *Decree on Incentive Measures for Privileged Electricity Producers*, *Decree on the Method for Calculation of the Incentive Fee and its Distribution*, and the annual *Decree on the Amount of the Incentive Fee*.

Other secondary legislation relevant for activities in the renewable energy sector are: *Decree on the Conditions of Electricity Delivery*, as adopted by the Government in July 2013, *Licensing Rulebook*, as adopted by the Ministry of Energy, Development and Environmental Protection in March 2013, as well as tariff systems and methodologies applied to the electricity sector, as adopted by the national regulatory authority – the Energy Agency of

electricity sector, as adopted by the national regulatory authority – the Energy Agency of the Republic of Serbia (AERS), and electricity grid codes, as adopted by competent operators and approved by AERS.

Strategic guidelines for developments in the renewable energy sector are set by the *Energy Sector Development Strategy* (2005) and the *NREAP* (2013).

4. What are the principal regulatory bodies in the renewable energy sector?

The following State institutions in Serbia are assigned by the applicable legislation with authorities and regulatory powers in the renewable energy sector:

- *The Government* forms the national energy policy, submits the Energy Sector Development Strategy to the National Assembly, adopts the Implementation Programme of the Energy Sector Development Strategy, monitors and ensures practical implementation of the Strategy, also prescribes energy emergency measures, passes national action plans, including the NREAP, adopts the Energy Balance, and other secondary legislation acts regulating performance in the energy sector, including the use of renewable energy sources and incentive schemes applied thereto.
- *The Ministry of Energy, Development and Environmental Protection*, which is currently in charge of the energy sector, implements national energy policies established by the National Assembly and formed by the Government, submits proposals for legal acts to be adopted by the Government, adopts secondary legislation within its competence, issues energy permits for electricity generation facilities, grants the status of privileged producer of electricity, and also carries other assigned administrative functions.
- *The Energy Agency of the Republic of Serbia (AERS)* is a designated independent regulatory authority vested with powers in the energy sector under the Energy Law 2011. AERS is in charge of the issuance of licenses for activities in the energy sector, regulation of the electricity market, adoption of methodologies for calculation of regulated tariffs and setting those tariffs, monitoring the implementation of requirements for transparency and independence of energy activities, approval of grid codes submitted by system operators in charge, and also performs other regulatory functions.

Other competent State institutions, bodies and authorities, as well as local and self-government administrations are assigned with specific functions in the energy sector, mainly related to the planning of energy infrastructure developments, authorisations for construction of facilities, enhanced local use of renewable energy sources and energy efficiency.

5. What are the main permits/ licenses required for renewable energy projects?

Development, construction and operation of power plants using renewable energy sources are subject to the following main administrative procedures and authorisations:

- *Environmental Impact Assessment (EIA)* performed under the terms and conditions stipulated in the Environmental Protection Law 2004 and the Environmental Impact Assessment Law 2004 (as further amended), other related laws and their implementing regulations. The EIA is mandatory for construction of power plants over 50 MW of installed capacity, whereas for power plants of installed capacity from 1 MW (from 2 MW for hydropower plants and from 10 MW for wind power plants) to 50 MW the EIA may be requested by the competent authority.

- *Energy permit* issued by the Ministry of Energy, Development and Environmental Protection, which authorises the construction of power plants for commercial activities in the electricity sector, i.e., for production of electricity. Each developer of the renewable energy project is obliged to hold a final and binding energy permit before the construction permit stage. However, the energy permit is not required if the renewable energy project is being developed on the basis of a granted concession pursuant to the Public Private Partnerships and Concessions Law 2011.

- *Construction permit* issued by the local municipality (for power plants below 10 MW of installed capacity), the Ministry of Construction and Urbanism (for power plants from 10 MW of installed capacity), or by the Autonomous Province of Vojvodina (for power plants from 10 MW of installed capacity located entirely in the territory of the Autonomous Province). The construction permit is issued under the terms and conditions of the Planning and Construction Law 2009 (as further amended). Obtaining an energy permit is a precondition for receiving a construction permit. For construction of wind power plants, the approval from the Agency for Flight Control, confirming that the wind power plant does not endanger flight safety, is also required.

- *Building use permit* issued under the terms and conditions of the Planning and Construction Law 2009. Following required inspections, this permit certifies that the power plant is in full conformity with the construction permit and related requirements, and is allowed for its exploitation.

- *Electricity license*, which authorises the production of electricity and is issued by the AERS for a period of 30 years. The electricity license is issued under the terms and conditions stipulated in the Energy Law 2011 and Licensing Rulebook 2013. The electricity license is not required for power plants with the installed capacity of up to 1 MW and for the production of electricity for personal needs (i.e., in cases where the generated electricity is consumed by the producer itself and is not delivered to the grid).

In case the electricity producer using renewable energy sources intends to apply for the applicable support schemes (incentives), namely – the electricity purchase guarantee and feed-in tariff, it is obliged to obtain the status of a privileged producer under the terms and conditions stipulated in the Energy Law 2011 and the applicable Governmental Decree as referred to hereinabove.

Authorisation to produce the electricity and thus obtaining an electricity license is also subject to the connection of the power plant to the electricity grid regulated by an agreement with the system operator in charge under the terms and conditions of the transmission or distribution grid code respectively. Each producer is required to trade in electricity based on valid power purchase agreements. All electricity produced by privileged producers during the determined support period of 12 years is being purchased by the public supplier.

Construction of hydropower plants is subject to additional authorisation requirements, i.e., the construction permit for such power plants will be issued only after obtaining the Water Conditions and Water Approval, while the building use permit – after the Water Approval under the terms and conditions stipulated in the Water Law 2010.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Amendments to the Excise Law, as adopted in May 2013, introduced excise duty on biomass products – biofuels (used for transportation) and bioliquids (used for the production of electricity and heat). The definition of biofuels and bioliquids is provided in the Energy Law 2011.

The excise duty applied to biofuels and bioliquids from 1 January 2014 is equal to RSD 46 per litre (approx. EUR 0.39 per litre). From 1 January 2015 the excise to duty will be equal to RSD 50 per litre (approx. EUR 0.43 per litre).

Depending on the intended use, the buyer of biofuels and bioliquids is entitled to a refund of paid excise duty. The amount of the paid excise duty may be reduced up to RSD 39.50 per litre (approx. EUR 0.34 per litre) – for biofuels used as engine fuel in transportation, up to RSD 2.50 per litre (approx. EUR 0.02 per litre) – for bioliquids used for heating, and for the total amount of the excise duty – for bioliquids used as fuels for the production of electricity and heat.

The amounts up to which paid excise duty is reduced shall apply until the start of application of regulations that specify the mandatory biofuels and bioliquids content in gas oil.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The public supplier is obliged by the Energy Law 2011 to purchase the entire amount of electricity generated by privileged producers and delivered to the grid. The status of privileged producer is acquired by the decision of the Ministry of Energy, Development and Environmental Protection in accordance with the Governmental Decree on the Conditions and Procedure for Obtaining the Status of Privileged Electricity Producers, as adopted in 2013. Currently, all functions of the public supplier are performed by the Public Enterprise "Elektroprivreda Srbije".

The public supplier and the privileged producer enters into a written power purchase agreement, which stipulates the terms and conditions for practical implementation of the guaranteed purchase of electricity from renewable energy sources, respective rights and obligations of the public supplier and the privileged producer, and also determines the electricity price in line with applicable incentives (i.e., minimum price guarantee).

The content of such power purchase agreement is provided in the Governmental Decree on Incentive Measures for Privileged Electricity Producers, as adopted in 2013. The parties, however, are allowed to deviate from these requirements subject to a prior consent by the Ministry of Energy, Development and Environmental Protection.

Payments made by the public supplier for the electricity purchased from privileged producers are being compensated from incentive fees paid by each final customer. Currently, as set by the Government, the incentive fee is equal to RSD 0.044 per kWh (approx. EUR 0.00038 per kWh). The incentive fee is being paid by final customers together with payments for the electricity consumed and grid services received.

The transmission system operator and distribution system operator, depending on the grid to which the power plant is connected, are obliged to accept to the grid all deliveries of electricity from a power plant operated by any

privileged producer, except for in exceptional cases where the security of the power system is threatened. Quantities of electricity delivered to the grid have to be equal to the amounts purchased by the public supplier from each privileged producer.

The guaranteed purchase of electricity is applied for a fixed support period of 12 years.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

In Serbia, renewable energy is mainly supported through a minimum price guarantee established in a form of a feed-in tariff. Each privileged producer has the right to receive a feed-in tariff for the entire amount of electricity produced and delivered to the grid depending on the type of renewable energy sources used and installed capacity of its facilities.

In general, all renewable energy technologies are applicable for the feed-in tariff, however, certain limitations depending on the installed capacity of the facility do apply, as well as differentiation of tariffs based on the said capacity is introduced.

Feed-in tariffs, as they are applied from 1 January 2014, are provided in *Table 1* herein below. Please note that the Governmental Decree on Incentive Measures for Privileged Electricity Producers provides the values of feed-in tariffs in EUR ct/kWh.

In cases where the correction coefficient is indicated, as provided in *Table 1* herein below, an individual feed-in tariff is being calculated for each privileged producer by deducting from a general feed-in tariff the amount of the respective coefficient multiplied by the installed capacity (P) of the power plant.

Table 1. Minimum price guarantees (feed-in tariffs applied from 1 January 2014)

RES technology	Installed capacity (P)	Feed-in tariff (EUR ct/kWh)
Hydropower (new power plants)	Up to 0.2 MW	12.40
	From 0.2 MW to 0.5 MW	13,727 – 6.633*P
	From 0.5 to 1 MW	10.41
	From 1 MW to 10 MW	10,747 – 0.337*P
	From 10 MW to 30 MW	7.38
Hydropower (power plants installed on the existing infrastructure)	Up to 30 MW	5.9
Biomass	Up to 1 MW	13.26
	From 1 to 10 MW	13.82 – 0.56*P
	Over 10 MW	8.22
Biogas	Up to 0.2 MW	15.66
	From 0.2 MW to 1 MW	16,498 – 4,188*P
	Over 1 MW	12.31
Biogas (from animal origin waste)	n/a	12.31
Gas from municipal waste and sewage gas	n/a	6.91
Wind power	n/a	9.20
Solar power (PVs installed on objects)	Up to 0.03 MW	20.66
	From 0.03 MW to 0.5 MW	20,941 – 9,383*P
Solar power (PVs installed on ground)	n/a	16.25
Geothermal	Up to 1 MW	9.67
	From 1 MW to 5 MW	10,358 – 0.688*P
	Over 5 MW	6.92

The feed-in tariffs are subject to regular annual correction due to inflation rates in the Euro zone, revised in February each year. However, in case the feed-in tariff is granted to a privileged producer and fixed in the power purchase agreement concluded with the public supplier, such a feed-in tariff is guaranteed (i.e., may not be changed) for the entire support period of 12 years.

The total maximum installed capacity of solar power plants supported in Serbia is limited to 10 MW for the entire territory of the country in the following quotas: (i) 2 MW for PVs installed on objects with individual capacity up to 30 kW; (ii) 2 MW for PVs installed on objects with individual capacity from 30 kW to 500 kW; and (iii) 6 MW for PVs installed on ground.

The maximum total installed capacity of wind power plants, for which the status of privileged producer may be acquired, is limited to 300 MW until the end of 2015 and to 500 MW until the end of the year 2020.

Privileged producers that use renewable energy sources together with fossil fuels have the right to receive the guaranteed price for the electricity produced from renewable energy sources if the biomass constitutes not less than 80% of the overall fuel mix for production of electricity, or if biogas, gas from municipal waste and/or sewage gas, or geothermal energy constitutes not less than 90% of the overall fuel mix.

Each electricity producer, which does not qualify for the feed-in tariff, i.e., which does not fall within the above specified groups for incentivised generation of electricity, and therefore is not eligible for a purchase guarantee, may sell the electricity produced in its power plant on the electricity market under the terms and conditions stipulated in the Energy Law 2011 and its implementing legal acts regulating the organisation of the electricity market in Serbia.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Serbia became a Party to the United Nations Framework Convention on Climate Change (UNFCCC) on 10 June 2001. As a non-Annex I Party, Serbia has obligations to develop, update and submit National Communications and periodically report to the UNFCCC Secretariat, to cooperate on international level regarding climate research and systematic observations, transfer of knowledge and clean technologies, formulation and implementation of national adaptation measures, education, public awareness and training in regard to climate change.

In order to fulfil these obligations, the Ministry of Energy, Development and Environmental Protection developed the *Initial National Communication of the Republic of Serbia to the United Nations Framework Convention on Climate Change* which was submitted to the UNFCCC Secretariat in November 2010.

Serbia is also a Party to the Kyoto Protocol since 17 January 2008. By ratifying the Kyoto Protocol as a non-Annex I Party, Serbia does not have quantified emission reduction targets, with regard to the UNFCCC. At the same time, by ratifying the Kyoto Protocol, Serbia gained the opportunity to, as a host country, take advantage of the Clean Development Mechanism (CDM).

To qualify as a host country, Serbia had to set up an institutional framework necessary for approval of CDM projects on the national level, meaning, the Designated National Authority (DNA). The DNA was established in November 2008. The DNA receives proposals from interested parties and issued letters of support and letters of approval as regards the compatibility of a project with the CDM. Participation in the DNA is voluntary.

Furthermore, harmonization of national legislation of Serbia with the EU acquis in the field of climate change implies transposition of the EU Climate and Energy Package, including the Directive on Emissions Trading (Directive 2003/87/EC, as amended by the Directive 2009/29/EC). Analysis of the legislative framework at stake and preparation of necessary legal and regulatory reforms in this regard are currently processed in a form of the EU financed project to be finalised in 2015.

10. Do renewable energy based power plants have priority for connection to the grid?

Access to the grid is granted by the grid operator in charge under the terms and conditions of the applicable legislations, including the respective grid code approved by the AERS. Access to the grid must be granted on a non-discriminatory basis subject to technical possibilities in the grid.

Under the legislation currently in force, power plants using renewable energy sources are not given any priorities for connection to the grid. Costs for connection of the power plant to the electricity grid are borne by power plant operators.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

There is no preferential treatment with regard to any equipment or materials used for developments of the renewable energy infrastructure in Serbia, whether based on origin (locally manufactured or imported) or any other characteristics. The absolute majority of technologies used for the production of electricity from renewable energy sources are imported to Serbia from the EU or worldwide markets.

12. What are the other incentives available to renewable energy generation companies?

Apart from the incentives referred to hereinabove, the Energy Law 2011 and the Governmental Decree on Incentive Measures for Privileged Electricity Producers, as adopted in 2013, do provide the following support measures:

- Taking balancing responsibility and balancing costs from privileged producers during the incentive period by the public supplier.
- Free of charge monthly notification of a privileged producer and public supplier on the electricity generation in the facility of the privileged producer metered by the system operator in charge during the incentive period.
- The right of a privileged producer to conclude an agreement with the public supplier after the incentive period on the purchase of the total amount of produced electric power at conditions on the organised electric power market in Serbia

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

The total net installed capacity of the power plants in Serbia at the beginning of 2013 amounted to 7,209 MW. Thermal power plants (TPP) and combined heat and power plants (CHP) held up to 59.5%, hydro power plants (HPP), including small HPPs, held up to 40.4%, whereas other power plants using renewable energy sources – up to 0.1% of the capacities.

Within the total net installed capacity, coal fired TPPs summed up to 3,936 MW and gas or fuel oil (mazoute) fired CHPs – 353 MW. Remaining capacities were covered by power plants using renewable energy sources, mainly – large HPPs, also including 44 MW of small HPPs, 2.4 MW of solar power plants, 2 MW biogas power plants and 0.5 MW of wind power plants connected to the distribution grid. It has to be also noted that the electricity generation, distribution and supply company Public Enterprise "Elektroprivreda Srbije" operates a pump-storage HPP (PSHPP) with the capacity of 2x307 MW, which is used for system management and balancing.

In 2012, power plants in Serbia generated 34,546 GWh of electricity. Out of that number, TPPs fired by coal produced 70.3%, HPPs (including PSHPP) – 28.4%, CHPs – 1.1% and other plants, including small quantities produced by biogas, solar and wind power plants, 0.2% of electricity

Fig. 1. Electricity generation capacities in Serbia (beginning of 2013)

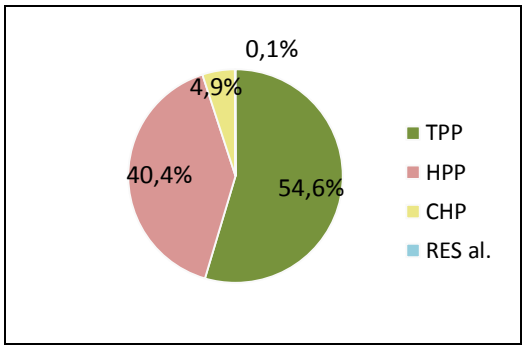
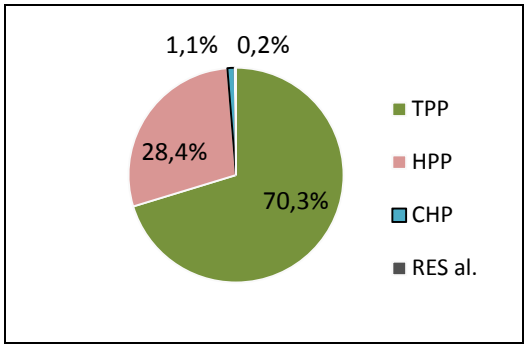


Fig. 2. Electricity generation structure in Serbia (2012)



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GENERAL

1. What is the nature and importance of renewable energy in your country?

The energy mix of Slovakia has traditionally been dominated by conventional sources (in particular nuclear and thermal energy), the only renewable source of any importance being hydro power. Nevertheless, over the last few years renewable sources have been gradually gaining in importance. The development in this area comes to a large extent as a result of Slovakia's membership in the European Union (the "EU"), with the energy policies formulated by the EU institutions being transposed to the national level. The major impetus in this area was the legislation on the support of renewable sources of energy adopted in 2009. This legislation was to create stable and predictable business environment in the renewables market; however, since its adoption, it has been changed several times in order to rein in the vast increase of investments in the solar electricity sector. On the other hand, it seems that these adjustments were a necessary consequence of an overly generous initial level of feed-in tariffs for electricity generated in solar power plants.

The basic point of reference for the Slovak renewable energy policy is set by the Renewable Energy Directive.[1] Anchored in the wider context of objectives of the EU energy policy, the Renewable Energy Directive provides, among other things, for mandatory national targets of energy from renewable sources to be met by each EU Member State by 2020. The mandatory target has been set at 14% for Slovakia, having regard to its starting point of 6.7% in 2005, available renewable energy potential and existing energy mix. Given that these targets are expressed as a share of renewables in gross final energy consumption (which includes the energy supplied for electricity generation, transport and heating and cooling), and as they take into account the effects of energy efficiency measures (if the overall energy consumption decreases, the share of renewables, even if constant in absolute terms, will rise), the Member States have considerable leeway in choosing the policy options to comply with them. In light of the current policy debate at the EU level on the framework for climate and energy in the period from 2020 to 2030, it may be expected that new EU policy initiatives will continue to significantly influence the energy policy in Slovakia.

In Slovakia, the policy approach to the transposition of the EU renewable energy objectives into the national context is to a large extent shaped by (i) concerns about the higher cost of renewable energy sources in comparison to the conventional ones; (ii) the existing energy mix which is not considered suitable for supporting the electricity generation from unpredictable renewable energy sources (solar and wind); as well as (iii) the relatively high energy intensity of the Slovak economy. This is coupled with a strong political support for the generation of electricity from nuclear energy focused on the completion of two 440 MW nuclear units and a separate project of construction of a new nuclear power plant. The National Action Plan for Renewable Energy adopted by the Ministry of Economy of the Slovak Republic (the

[1] Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (the "Renewable Energy Directive").

"Ministry of Economy") in October 2010[2] implies that a major part of the increase in renewable energy will be due to the growing use of biomass, geothermal energy and solar energy in the production of heat (the share of renewable energy in the production of heat and cooling should almost double from 7.6% in 2010 to 14.6% in 2020). Electricity generation is predicted to see a smaller growth in the use of energy from renewable sources (the share should rise from 19.1% in 2010 to 24% in 2020).

As regards the particular sources of renewable energy,[3] hydropower currently represents the only one contributing to electricity generation in a sizeable manner (approximately 15 to 20%, depending on annual precipitation). This contribution is mainly due to large hydropower plants where the potential for new projects is almost exhausted. As to the small hydropower plants (with installed capacity below 10 MW), their technical potential is widely unused and their electricity generation capacity could, according to the forecasts of the National Action Plan for Renewable Energy, increase from 80 MW in 2010 to 182 MW in 2020.

Biomass represents a renewable source of energy with the highest technical potential, up to 18% of the Slovak energy consumption, with the main progress expected in the production of heat and to a lesser extent electricity generation. The current use of biomass in the production of heat is, nonetheless, rather low given, among other things, the high market penetration of natural gas distribution networks. Electricity generation through joint combustion of biomass and fossil fuels will likely play an important role in future. A major project in this area has been launched by the dominant electricity producer in one of its two large thermal power plants. An additional opportunity for electricity generation from biomass is represented by biogas plants. A few smaller plants have already been to put into operation and the National Action Plan for Renewable Energy expects an increase in the total installed capacity of biogas-combusting installations from 18 MW in 2010 to 110 MW in 2020.

Until recently, the use of solar energy has been insignificant, whether in the production of heat or electricity. However, the generous level of feed-in tariffs applicable to projects put into operation in 2010 and the first half of 2011 lead to a substantial increase in the total installed capacity of solar power plants. Based on the estimates of the Slovak energy regulator, the installed capacity of solar power plants amounts to approximately 543 MW and it considerably exceeds the 300 MW target expected by the National Action Plan for Renewable Energy to be reached in 2020. The increase occurred despite a rather reserved approach to the electricity generation from solar energy due to concerns about the instability of this renewable energy source, the strain it could impose on the electricity network, as well as the upward pressure on end-user electricity prices. Once it became clear that the initial level of feed-in tariffs for solar electricity would lead to overinvestment, this reserved approach lead to a sequence of legislative and regulatory measures aimed at limiting the investment. These measures culminated in the abolishment of feed-in tariffs for solar projects (other than projects with the installed capacity below 30 kW located on the surface of buildings).

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2 National Action Plan for Energy from Renewable Sources (Slovak Republic), issued by the Ministry of Economy of the Slovak Republic on 6 October 2010 (the "National Action Plan for Renewable Energy").

3 Unless stated otherwise, the data cited below are from the Strategy on Energy Security of the Slovak Republic, approved by the Slovak Government on 15 October 2008, containing the most recent official assessment of the renewable energy potential in Slovakia.

The potential for wind energy in Slovakia is rather limited, with only a few projects being implemented to date. Moreover, due to concerns about the impact of the wind electricity on the security and stability of the network, the state-owned Slovak transmission system operator (Slovenská elektrizačná a prenosová sústava, a.s. ("SEPS")) has suspended the issuance of consents to the connection of wind farms to the network. Following the considerable increase in the installed capacity of solar power plants (with wind and solar energy being regarded as carrying with them very similar risks), it is unlikely that wind energy projects could become of any importance in the foreseeable future.

Another renewable energy source with certain, if not large, potential is geothermal energy. It is currently used at a local level in several locations within Slovakia mainly for the production of heat. More intensive use of geothermal energy is constrained in particular by technical barriers.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Under the Renewable Energy Act[4], a renewable energy source is defined as a non-fossil energy source, the energy potential of which is constantly replenished by natural processes or activities of people and covers the following sources:

- hydro energy (except for the electricity produced in pumped-storage hydro plants);
- solar energy;
- wind energy;
- geothermal energy (defined as energy available in the form of heat under the earth's surface);
- biomass, including all products of its processing[5];
- biogas (defined as gas for energy use which is created in the process of biomass fermentation), landfill gas, sewage treatment plant gas;
- biomethane (defined as treated biogas, the technical parameters of which are comparable to those of natural gas);
- aerothermal energy (defined as energy available in the form of heat in the air); and
- hydrothermal energy (defined as energy available in the form of heat in the surface water).

[4] Act No. 309/2009 Coll. on the promotion of renewable energy sources and high-efficiency cogeneration, as amended by Act No. 492/2010 Coll., Act No. 558/2010 Coll., Act No. 117/2011 Coll., Act No. 136/2011 Coll., Act No. 189/2012 Coll., Act No. 373/2012 Coll., Act No. 30/2013 Coll., Act No. 218/2013 Coll., Act No. 382/2013 Coll. (the "Renewable Energy Act").

[5] Biomass is further defined as biodegradable fraction of a product, residue from vegetal and animal substances from agriculture, forestry and related sectors, including fishery and aquaculture, the biodegradable fraction of municipal and industrial waste, including black liquor from wood processing.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The renewable energy sector is regulated mainly by the Renewable Energy Act, the Network Industries Act[6], the Energy Act[7], and the price regulation decrees[8] issued by the Regulatory Office for Network Industries ("RONI") which regulate prices of electricity generated from renewable sources. While the Renewable Energy Act contains specific measures ensuring the promotion of electricity generated from renewable energy sources, the Network Industries Act contains the framework for the price regulation in the energy sector and the Energy Act regulates in particular the licensing procedure and approvals of investments in the energy sector.

4. What are the principal regulatory bodies in the renewable energy sector?

The principal regulatory bodies in the renewable energy sector are the Ministry of Economy and RONI. Supervisory powers are exercised by the Slovak Commercial Inspection.

The Ministry of Economy bears the main responsibility for the formulation of renewable energy policy. It effectively regulates the construction of new renewable energy facilities through issuing certificates on the compliance of the investment plan of an energy generating facility with the long-term concept of the Slovak energy policy (the "Energy Policy").[9] Such compliance certificates are currently required for all power plants with the total installed capacity equal to or greater than 1 MW except for solar power plants where a compliance certificate is required already for power plants with the total installed capacity equal to or greater than 100 kW. The Ministry of Economy may also impose obligations in the general economic interest on electricity producers in order to ensure the use of renewable energy sources in the generation of electricity or on the distribution system operators and transmission system operator in order to ensure preferential access, connection, transmission, distribution and supply for electricity generated from renewable energy sources. However, such obligations have not been imposed to date. The licenses for generation of electricity in facilities with the total installed output of more than 1 MW are issued by RONI, including the licenses for generation of electricity from renewable energy sources if the output of these facilities exceeds the 1 MW threshold (however, generation of electricity from biomass and biogas does not require a license, there is only an obligation to notify RONI in advance). Apart from that, RONI is also responsible for the price regulation of electricity generated from renewable sources and issues certificates of origin (evidencing that the electricity was generated in an installation eligible for support measures) and guarantees of origin (evidencing the amount of electricity generated from renewable sources of energy).

6 Act No. 250/2012 Coll. on regulation in network industries, as amended by Act No. 435/2013 Coll. (the "Network Industries Act").

7 Act No. 251/2012 Coll. on energy, as amended by Act No. 391/2012 Coll., Act No. 352/2013 Coll., Act No. 382/2013 Coll. and Act No. 102/2014 Coll. (the "Energy Act").

8 Decree of RONI No. 221/2013 Coll. establishing the price regulation in the electricity sector (applicable for the first time to the price regulation proceedings for 2014) and Decree of RONI No. 225/2011 Coll. establishing the price regulation in the electricity sector, as amended by Decree of RONI No. 438/2011 Coll. and Decree of RONI No. 184/2012 Coll. (applicable for the first time to the price regulation proceedings for 2012 and replacing decree of RONI No. 2/2008 as amended by decrees Nos. 7/2008, 2/2009, 7/2009, 2/2010 and 7/2011).

9 The Energy Policy is approved by the Government of the Slovak Republic based on a proposal prepared by the Ministry of Economy.

Although SEPS, the state-owned transmission system operator, does not, strictly speaking, exercise any regulatory powers, it exerts substantial influence over the renewable energy market. This is due to the fact that the consent of SEPS is required before the Ministry of Economy issues compliance certificates for new renewable energy projects, with SEPS assessing the impact of renewable energy projects on the security and reliability of the network.

The Slovak Innovation and Energy Agency ("SIEA") is an implementing agency of the Ministry of Economy for use of EU structural funds.

5. What are the main permits/licenses required for renewable energy projects?

As mentioned above, the Ministry of Economy issues the compliance certificates for all power plants with the total installed capacity equal to or greater than 1 MW except for solar power plants where a compliance certificate is required already for power plants with the total installed capacity equal to or greater than 100 kW. In addition, the consent of SEPS is required before the Ministry of Economy issues the compliance certificate, with SEPS assessing the impact of renewable energy projects on the security and reliability of the network. A compliance certificate is valid for three years and is required in the building proceedings in respect of the energy facility.

The construction of renewable energy project facilities requires permits issued in the building proceedings. These include zoning, building and occupational permits. Depending on the nature of the renewable energy project, other specific permits (including the environmental impact assessment) may be required.

In addition, generation of electricity from renewable energy sources (if output of these facilities exceeds the 1 MW threshold) requires the license to be issued by RONI (however, generation of electricity from biomass and biogas does not require license, there is only an obligation to notify RONI in advance).

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

No tax incentives are currently available. However, electricity generated from renewable energy sources supplied directly to end customers or used by the relevant electricity producer for its own consumption is exempted from excise duties.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Under the Renewable Energy Act, the electricity generated from renewable sources must be off-taken by the regional distributor to which the relevant electricity producer is connected. As such electricity will be used for the purposes of covering the losses in the distribution system, it will be purchased at the price for losses in the system which is regulated by RONI. This support measure applies to (i) facilities with the total installed capacity of up to 125 MW; and (ii) facilities producing electricity by high-efficiency cogeneration with the total installed capacity of up to 200 MW, provided the share of renewable energy sources in the fuel is higher than 30% or the share of gases emerging as side products of metallurgic production process in the fuel is higher than 40% (except in each case for facilities generating electricity from hydro energy with the installed capacity exceeding 5 MW). All facilities which qualify for this support will enjoy the right to the guaranteed off-take for 15 years from the time of their commissioning or the year of their

reconstruction or upgrade. However, the Renewable Energy Act prescribes that the improvement in capacity, energy consumption, losses and costs must be proved by an expert opinion in order for the reconstruction or upgrade to obtain support for the 15-year period. Where the total installed capacity of energy facilities of an electricity producer is lower than 500 kW, the right to the guaranteed off-take will apply during the whole lifetime of the energy facility.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

As long as the producer of electricity from renewable sources enjoys the right to the guaranteed off-take by the regional distributor, the purchase price for such electricity supplied to the regional distributor will be determined as the regulated price for losses. This regulated price for losses is equal to the arithmetic average of the prices of electricity for purposes of covering the losses of all three regional distributors in Slovakia, determined by RONI on an annual basis for each of these regional distributors.[10]

In addition, the producer of electricity from renewable sources which is entitled to the guaranteed electricity off-take also qualifies, under conditions mentioned below, for an additional payment paid by the regional distributor. This additional payment is determined as the difference between the regulated tariffs for renewable electricity (applicable for the year when the renewable energy based power plant was commissioned) and the regulated price for losses. The right to such additional payment will apply with respect to the actual amount of electricity (subject to the limits mentioned below) produced from renewable energy sources even if the electricity producer does not make use of its right to the guaranteed off-take (for example, if it uses the electricity for its own consumption). The amount of such additional payment is gradually decreased if the investment costs of a reconstruction or upgrade of a facility do not exceed 50% of investment costs for new comparable technology (except for facilities generating electricity from hydro energy with an installed capacity up to 5 MW).

Under the Decree of RONI No. 225/2011 Coll. and the Decree of RONI No. 221/2013 Coll., the regulated tariffs for electricity from renewable sources are determined as follows:

[10] This arithmetic average amounted to EUR 59.18/MWh in 2007, EUR 74.22/MWh in 2008, EUR 84.31/MWh in 2009, EUR 55.40/MWh in 2010 EUR 55.75/MWh in 2011, EUR 60.11/MWh in 2012, EUR 49,0547 in 2013 and EUR 46,8125 in 2014.

A. Installations put into operation in 2010:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 1 MW	109.08
	from 1 MW up to and including 5 MW	97.98
	above 5 MW	61.72
Solar	up to and including 100 kW	430.72
	above 100 kW	425.12
Wind		80.91
Geothermal		195.84
Combustion of purpose grown biomass		113.10
Combustion of waste biomass		125.98
Co-combustion of biomass or waste together with fossil fuels		126.14
Combustion of landfill gas or gas from sewage treatment plants		96.36
Combustion of biogas produced by anaerobic fermentation technology	up to and including 1 MW	148.72
	above 1 MW	131.45
Combustion by thermochemical gasification in a gasifier		159.85

These tariffs will be further adjusted for facilities, which were commissioned, modernized or upgraded prior to 2010 by applying the relevant coefficient set out in the Decree of RONI No. 225/2011 Coll. .

B. Installations put into operation from 1 January 2011 to 30 June 2011:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 1 MW	109.08
	from 1 MW up to and including 5 MW	97.98
	above 5 MW	61.72
Solar	up to and including 100 kW located on a building	387.65
	up to and including 100 kW not located on a building	387.65
	from 100 kW up to and including 1 MW	382.61
	from 1 MW up to and excluding 4 MW	382.61
	from 4 MW	382.61
Wind		80.91
Geothermal		195.84
Combustion of purpose grown biomass within the combined generation of electricity and heat		113.10
Combustion of waste biomass within the combined generation of electricity and heat		127.98
Co-combustion of biomass or waste together with fossil fuels within the combined generation of electricity and heat		126.14
Combustion of fermented biomass		144.88
Combustion of landfill gas or gas from sewage treatment plants		96.36
Combustion of biogas produced by anaerobic fermentation technology	up to and including 1 MW	148.72
	above 1 MW	132.45
Combustion by thermochemical gasification in a gasifier		159.85

C. Installations put into operation from 1 July 2011 to 31 December 2011:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 1 MW	109.08
	from 1 MW up to and including 5 MW	97.98
	above 5 MW	61.72
Solar	up to 100 kW located on the roof or walls of a building connected to the earth by firm basement	259.17
Wind		79.29
Geothermal		195.84
Combustion of purpose grown biomass within the combined generation of electricity and heat		112.24
Combustion of waste biomass within the combined generation of electricity and heat		122.64
Combustion of fermented biomass within the combined generation of electricity and heat		144.88
Combustion of bioliquids within the combined generation of electricity and heat		115.00
Co-combustion of biomass or waste together with fossil fuels within the combined generation of electricity and heat		123.27
Combustion of landfill gas or gas from sewage treatment plants		93.08
Combustion of biogas produced by anaerobic fermentation technology	up to and including 1 MW	145.00
	above 1 MW	129.44
Combustion by thermochemical gasification in a gasifier		159.85

D. Installations put into operation from 1 January 2012:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 1 MW	109.80
	from 1 MW up to and including 5 MW	97.98
	above 5 MW	61.72
Solar	up to 100 kW located on the roof or walls of a building connected to the earth by firm basement	194.54
Wind		79.29
Geothermal		190.51
Combustion or co-combustion of purpose grown biomass within the combined generation of electricity and heat		112.24
Combustion or co-combustion of waste biomass within the combined generation of electricity and heat		122.64
Combustion or co-combustion of fermented biomass within the combined generation of electricity and heat		144.88
Combustion or co-combustion of bioliquids within the combined generation of electricity and heat		115.01
Co-combustion of biomass or waste together with fossil fuels within the combined generation of electricity and heat (the combined generation is not required, if the share of biologically degradable waste in the communal waste is below 55%)		123.27
Combustion of landfill gas or gas from sewage treatment plants		93.08
Combustion of biogas produced by anaerobic fermentation technology	up to and including 1 MW	136.33
	above 1 MW	118.13
Combustion by thermochemical gasification in a gasifier		139.87

E. Installations put into operation from 1 July 2012 to 31 December 2012:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 1 MW	109.80
	from 1 MW up to and including 5 MW	97.98
	above 5 MW	61.72
Solar	up to 100 kW located on the roof or walls of a building connected to the earth by firm basement	119.11
Wind		79.29
Geothermal		190.51
Combustion or co-combustion of purpose grown biomass within the combined generation of electricity and heat		112.24
Combustion or co-combustion of waste biomass within the combined generation of electricity and heat		122.64
Combustion or co-combustion of corn straw		171.00
Combustion or co-combustion of bioliquids within the combined generation of electricity and heat		115.01
Co-combustion of biomass or waste together with fossil fuels within the combined generation of electricity and heat (the combined generation is not required, if the share of biologically degradable waste in the communal waste is below 55%)		123.27
Combustion of landfill gas or gas from sewage treatment plants		93.08
Combustion of biogas produced by anaerobic fermentation technology	up to and including 1 MW	136.33
	above 1 MW	118.13
Combustion by thermochemical gasification in a gasifier		149.87
Combustion by fermented mixture made of aerobic fermentation of biological decomposable waste		144.88

F. Installations put into operation from 1 January 2013:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 1 MW	109.80
	from 1 MW up to and including 5 MW	97.98
	above 5 MW (if the facility was put into operation until 28 February 2013)	61.72
Solar	up to 100 kW located on the roof or walls of a building connected to the earth by firm basement (in respect of facilities with a total installed capacity above 30 kW only if the facility was put into operation until 30 June 2013)	119.11
Wind		79.29
Geothermal		190.51
Combustion or co-combustion of purpose grown biomass within the combined generation of electricity and heat		112.24
Combustion or co-combustion of waste biomass within the combined generation of electricity and heat		122.64
Combustion or co-combustion of corn straw		154.27
Combustion or co-combustion of bioliquids within the combined generation of electricity and heat		115.01
Co-combustion of biomass or waste together with fossil fuels within the combined generation of electricity and heat (the combined generation is not required, if the share of biologically degradable waste in the communal waste is below 55%)		123.27
Combustion of landfill gas or gas from sewage treatment plants		84.89
Combustion of biogas produced by anaerobic fermentation technology	up to and including 1 MW	134.08
	above 1 MW	118.13
Combustion by thermochemical gasification in a gasifier		149.87
Combustion by fermented mixture made of aerobic fermentation of biological decomposable waste		144.88

G. Installations put into operation from 1 January 2014:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 100 kW	111.27
	above 100 kW up to and including 200 kW	109.17
	above 200 kW up to and including 500 kW	106.84
	above 500 kW up to and including 1 MW	105.15
	above 1 MW up to and including 5 MW	97.98
Solar	up to 30 kW located on the roof or walls of a building connected to the earth by firm basement	98.94
Wind		70.30
Geothermal		155.13
Combustion or co-combustion of purpose grown biomass (except for corn straw) within the combined generation of electricity and heat		92.09
Combustion or co-combustion of other waste biomass (except for corn straw) within the combined generation of electricity and heat		100.63
Combustion or co-combustion of corn straw within the combined generation of electricity and heat		126.10
Combustion or co-combustion of bioliquids within the combined generation of electricity and heat		94.36
Co-combustion of biologically degradable waste in the communal waste together with fossil fuels within the combined generation of electricity and heat (the combined generation is not required, if the share of biologically degradable waste in the communal waste is below 55%)		100.49
Combustion of landfill gas or gas from sewage treatment plants		70.34
Combustion of biomethane produced by anaerobic fermentation technology	up to and including 1 MW	107.53
Combustion of biogas produced by anaerobic fermentation technology	up to and including 250 kW	125.29
	above 250 kW up to and including 500 kW	119.41
	above 500 kW up to and including 750 kW	110.62
	above 750 kW	107.26
Combustion by thermochemical gasification in a gasifier		122.62
Combustion by fermented mixture made of aerobic fermentation of biological decomposable waste		118.88

If the construction of a new facility or the reconstruction or upgrade of an existing facility was supported from schemes financed from the state budget, the right to the guaranteed off-take (or the claim for additional payment) is not given, unless such support (i) is used to carry out measures aimed at achieving compliance with the applicable emission limits; or (ii) is provided in the form of investment aid under a special regulation.[11]

[11] Act No. 561/2007 Coll. on investment aid, as amended.

In order to ensure a stable and predictable environment for investments into renewable energy, the Renewable Energy Act provides that RONI may not set the regulated tariffs applicable in the subsequent period, which may not exceed three years, at a level lower than 70% of the regulated tariffs applicable in a given year. However, such limitation does not apply to solar and wind power plants.

The Renewable Energy Act provides for limits on the amount of electricity with respect to which the electricity producer may claim the additional payment from the regional distributor. Under these limits, the right to an additional payment applies only to:

- all electricity from renewable energy sources produced in a facility of an electricity producer with a total installed capacity of up to and including 5 MW;
- electricity corresponding to the proportionate amount of electricity produced in a facility of an electricity producer with a total installed capacity of more than 5 MW, with the proportion being calculated as the ratio of 5 MW to a total installed capacity;
- the total amount of electricity produced in a facility of an electricity producer, which uses wind energy as a source, with a total installed capacity of up to and including 15 MW;
- electricity corresponding to the proportionate amount of electricity produced in a facility of an electricity producer, which uses wind energy as a source, with a total installed capacity of more than 15 MW, with the proportion being calculated as the ratio of 15 MW to a total installed capacity;
- all electricity from renewable energy sources produced by cogeneration with a total installed capacity of more than 5 MW, if the share of renewable energy sources in fuel is higher than 20% and the share of heat supplied for technological purposes does not exceed 40% of useful heat;
- all electricity from renewable energy sources produced in an installation for cogeneration with a total installed capacity of more than 10 MW, if the share of renewable energy sources in fuel is higher than 30% and the share of heat supplied for technological purposes does not exceed 40% of useful heat (this category of producers may apply for the right to the additional payment until 31 December 2014);
- all electricity from renewable energy sources produced in an installation for cogeneration with a total installed capacity of more than 5 MW, if the share of renewable energy sources in fuel is higher than 30% and the share of heat supplied for technological purposes does not exceed 40% of useful heat (this category of producers may apply for the right to the additional payment from 1 January 2015 until 31 December 2018);

A further restriction applies with regard to the electricity produced from biomass. In such case, the electricity producer with a new facility will be able to claim the additional payment only up to and including the amount of electricity from biomass of 40 GWh. Certain further restrictions apply also to the generation of electricity from bioliquid and biogas.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Yes. Slovakia ratified the Kyoto Protocol[12] in 2002, and entered into force in Slovakia on 16 February 2005.

[12] The Kyoto Protocol was published under the Announcement of the Ministry of Foreign Affairs of the Slovak Republic No. 139/2005 Coll.

In accordance with Act No. 414/2012 Coll. on Trading with Emission Allowances (which repealed and replaced the previous Emission Allowances Act No. 572/2004 Coll., with effect as of 1 January 2013) and Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, the Ministry of Environment of the Slovak Republic issued a national allocation table for a transitional period from 2013 to 2020 during which the free allocation of greenhouse gas emission allowances (whether in full or in part) is only be available to eligible installations and such allocations are to be decreased each year with a view to reaching 30% of the 2012 allocation by 2020 and the elimination of the free allocation of greenhouse gas emission allowances by 2027. Required allowances not allocated free of charge must be purchased (auctioned).

10. Do renewable energy based power plants have priority for connection to the grid?

Yes, renewable energy based power plants enjoy priority connection to the regional distribution system, priority electricity transmission, priority electricity distribution and priority electricity supply regardless of their installed capacity. In order for eligible renewable energy power plants to be eligible, they must fully comply with the technical and commercial requirements of the distribution system operator and may not endanger the security and reliability of the system operation.

Renewable energy based power plants will be connected to the distribution system if (i) the distribution system is technically capable of such connection; (ii) it is the closest one to the power plant; and (iii) from a technical and economic point of view there is no other distribution system with better conditions for connection. The distribution system is considered technically capable of a connection also where the electricity off-take by the regional distributor requires extension of the distribution system, provided that such extension is economically justifiable.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

No, there are no such specific incentives.

12. What are the other incentives available to renewable energy generation companies?

Renewable energy based power plants with a total installed capacity of less than 1 MW are also supported by way of assumption of the responsibility for imbalances caused by the electricity producer (as of 1 July 2013 solar power plants have the benefit of this support measure only if their installed capacity is less than 30 kW, before 1 July 2013, this threshold was 100 kW).[13] Under the Renewable Energy Act, the responsibility for imbalances will be taken over by the relevant regional distributor. This supportive measure applies for a period of 15 years from commissioning, reconstruction or upgrade of the energy facility or for the whole lifetime of the energy facility, should the total installed capacity of the energy facility be lower than 500 kW. This support measure is of particular importance for producers of electricity from unpredictable (solar and wind) renewable energy sources.

In addition, renewable energy generating companies may benefit from EU structural funds which are expected to represent a major factor contributing to the development of renewable energy in future. The EU structural funds are channeled through several schemes defined at the national level, the most important one for the period between 2007 and 2013 being the Operational Program Competitiveness

[13] If the permit for operation of the power plant was issued before 1 July 2011, this support measure applies if the total installed capacity is less than 4 MW.

and Economic Growth managed by the Ministry of Economy.[14] Under this program, the support can be provided to projects involving the construction, upgrade and reconstruction of small water power plants with a maximum installed capacity up to 10 MW, power plants using biomass or biogas with a minimum installed capacity of 50 kW and a maximum installed capacity of 30 MW, and power plants using solar energy or geothermal energy. The support is provided through SIEA and, subject to location, can represent 40% or 50% of the eligible costs.

Depending on the applicable state aid scheme, the support can be in the range from EUR 100,000 to EUR 6 million or from EUR 20,000 to EUR 200,000, respectively. As this program was open for the new applicants only until the end of the year 2013, the funds under this program are still being distributed among those who applied for them before the end of 2013. This distribution of the funds shall last until 2015. However, as of 2014 new applicants are not eligible to draw funds under this program.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

	Gross Electricity Production in 2012 (in GWh)	% of Gross Electricity Production in 2012
Total	28,664	100
Renewable Energy Sources	5,795	20,22
Hydro All Plants	4,439	15,49
of which: hydro 1 MW (net of pumping)	36	0,13
hydro 1-10 MW (net of pumping)	73	0,26
hydro 10+ MW (net of pumping)	3,994	13,93
pumped storage[15]	336	1,17
Geothermal	x	x
Solar (Photovoltaic)	424	1,48
Wind	6	0,02
Municipal Solid Wastes (Renew)	27	0,094
Wood/Wood Wastes/Other Solid Wastes	724	2,53
Sewage Sludge Gas	30	0,105
Other Biogas	145	0,506

Source: The data on gross electricity production in GWh are cited according to the publication Energy 2012, published by the Statistical Office of the Slovak Republic in December 2013.

[14] The total funds available under the Operational Program Competitiveness and Economic Growth for projects increasing the energy efficiency and renewable energy projects in the period between 2007 and 2013 amount to approximately EUR 144 million.

[15] Under the Renewable Energy Act, electricity produced in pumped storage hydropower plants is not counted towards electricity produced from renewable energy sources.

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GENERAL

1. What is the nature and importance of renewable energy in your country?

South Africa has a gross installed electricity generation capacity of about 44 GW. Coal-fired electricity generation facilities currently supply 90% of the total load. Due to its dependence on energy generated from coal, South Africa has one of the highest per capita greenhouse gas emission rates in the world.

South Africa has ratified the United Nations Framework Convention on Climate Change, 1992 (the "UNFCCC") and is classified as a Non-Annex-I developing country in terms of the Kyoto Protocol. Accordingly, South Africa is not bound by any mandatory targets for reducing greenhouse gas emissions. Nevertheless, South Africa has committed to reducing its greenhouse gas emissions by 34% by 2020 and by 42% by 2025.

The first official domestic policy formulation on renewable energy, the White Paper on Renewable Energy (the "Renewable Energy White Paper") was published in 2003 by the then Department of Minerals and Energy. The Renewable Energy White Paper sets a target of 10,000 GWh (approximately 4% of the total electrical energy demand) for renewable energy generation by 2013. By 2010, however, it became self-evident that this target would not be achieved and it has since then come under review by the Department of Energy (the successor to the Department of Minerals and Energy; DoE) in its integrated resource planning for the entire electricity generation industry.

In May 2011, the Minister of Energy released the first iteration of South Africa's Integrated Resource Plan in respect of South Africa's forecast electricity demand for the period 2010 to 2030 (the "IRP 2010-2030"). IRP 2010-2030 proposed a 25% reduction in coal-fired generation (from 90% to 65%) and a broadly diversified generation mix including an allocation of 9% for renewable energy, by 2030. This commitment would entail an allocation of up to 17.8 GW to renewable energy.

In August 2011, the DoE issued a request for qualification and proposals for new generation capacity under a procurement programme for 3,725 MW renewable energy generating capacity from independent power producers ("IPPs") using onshore wind, solar photovoltaic, CSP, biomass, biogas, landfill gas and small hydro technologies (collectively, the "RE-IPP Procurement Programme"). The RE-IPP Procurement Programme was expanded by way of a further Ministerial Determination on 12 December 2012, when a further 3,200 MW was allocated to RE - IPP sources. At the present time, the total renewable energy allocation is for 6,925 MW, provisionally allocated as follows: 3,320 MW for onshore wind, 600 MW for CSP, 2,525 MW for solar photovoltaic ("solar PV"), 60 MW for biomass, 60 MW for biogas, 25 MW for landfill gas, 135 MW for small hydro, and a further 200 MW for other small-scale renewable energy plants (between 1 MW and 5 MW).

The RE-IPP Procurement Programme is staggered into to a maximum of six planned bidding rounds. The first three bidding rounds have been completed:

- 28 bids with a total target installed capacity of 1,415.2 MW were awarded for the first bidding round comprising 633.99 MW for onshore wind, 631.53 MW for solar PV and 150 MW for CSP. The power purchase agreements and other agreements awarded by the DoE for these bids were concluded on 5 November 2012 and almost all of these bids are currently or are on the verge of producing electricity for the national grid;

- 19 bids with a total target installed capacity of 1,043.9 MW were awarded for the second bidding round comprising 562.5 MW for onshore wind, 417.1 MW for solar PV, 50 MW for CSP and 14.3 MW for small hydro. The target date for the conclusion of the power purchase agreements and other agreements to be awarded by the DoE for these bids was 22-26 April 2013 and most of these bids have now entered their prescribed construction phase; and

- 17 bids with a total target installed capacity of 1,456 MW were awarded for the third bidding round comprising 787 MW for onshore wind, 435 MW for solar PV, 200 MW for CSP, 18 MW for landfill gas and 16 MW for biomass. The target date for financial close of these projects is 30 July 2014. On 14 April 2014, the Minister of Energy announced that the DoE would be selecting further preferred bidders for the third round as a consequence of the competitive pricing associated with the third round bid responses but at the time of writing no definitive list of these additional bid awards was available.

In December 2013, the Minister of Energy released a draft update to the IRP 2010-2030 which indicated a significant drop in projected peak demand for energy by 2030, from 67,800 MW to 61,200 MW (on the upper end of the demand range) but which nevertheless proposes a continued commitment to additional annual allocations of 2,200 MW of renewable energy in the form of 1,000 MW solar PV capacity, 1,000 MW onshore wind capacity and 200 MW CSP capacity.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Renewable energy is defined in the Renewable Energy White Paper as electricity, gaseous and liquid fuels, heat or a combination of these deriving from naturally-occurring, cyclical and non-depleting sources of energy such as solar, wind, biomass, hydro, tidal, wave, ocean current and geothermal energy.

Under the National Energy Act, 2008, which is mainly concerned with the establishment of mechanisms for the collection, collation and analysis of energy data and integrated energy planning, "renewable energy" is defined as energy generated from natural, non-depleting resources including solar energy, wind energy, biomass energy, biological waste energy, hydro energy, geothermal energy and ocean and tidal energy.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

South Africa's regulatory framework governing the electricity sector is evolving to reflect the government's policy on the managed liberalisation of the electricity supply sector to provide for the staged introduction of IPPs within a single buyer market.

The key role players in this regulatory restructuring are:

- the Minister of Energy, who is responsible for coordinating national energy policy and planning;
- the National Energy Regulator of South Africa ("NERSA"), which performs the role of the economic and technical regulator in the electricity supply industry and is responsible for giving effect to national energy policy and planning and approving electricity tariffs; and
- the national electricity supply utility, Eskom Holdings SOC Limited ("Eskom"), which is currently the de facto single buyer of electricity supplied by IPPs, as well as the monopoly transmission service provider and the dominant distribution service provider to loads and generators.

The principle laws and regulations governing South Africa's renewable energy sector are:

- the Electricity Regulation Act, 2006 (the "ERA"), which empowers the Minister of Energy, acting in consultation with NERSA, to determine whether any new generation capacity is needed from time to time, the types of technology and primary energy sources to be utilised for such new generation capacity, whether such capacity should be developed by Eskom or any other any state-owned utilities or by IPPs, and whether such new generation capacity and electricity deriving therefrom will be subject to any "must buy" power purchase arrangement on the part of any state-owned utility;
- the National Energy Regulator Act, 2004, which is NERSA's enabling legislation;
- the IRP 2010-2030;
- the Electricity Regulations on New Generation Capacity, which regulate the procedures to be implemented in relation to the procurement of new generation capacity (the "New Generation Regulations");
- the Eskom Conversion Act, 2001, which provides for Eskom's status as a public company generally subject to company laws, under 100% state ownership (currently through the Ministry of Public Enterprises) and liable for the payment of dividends and taxes; and
- the National Energy Act, 2008.

Other laws and regulations applicable to the renewable energy sector include laws and regulations relating to the environment, water use, wastewater management and disposal, solid waste management and disposal, biodiversity, protection of endangered plant and animal species, atmospheric emissions, protection of heritage resources, occupational health and safety, mine health and safety, hazardous materials, fire prevention, building and construction, land zoning and use, labour and employment, aviation aspects, taxation, foreign exchange control, protected fundamental human rights, consumer protection, companies, and procurement by government agencies or instrumentalities.

As mentioned above, legislative amendments are currently before the National Assembly for consideration which will significantly overhaul the legislation listed above, if enacted and brought into effect. These include:

- the Electricity Regulation Second Amendment Bill, 2011 (the "ERA Amendment Bill");
- the National Energy Regulator Amendment Bill, 2011 (the "NERSA Amendment Bill"); and

- the Independent System and Market Operator Bill, 2012 (the "ISMO Bill").

The ERA Amendment Bill and the NERSA Amendment Bill propose to restructure how the electricity supply industry will be regulated including the shifting over of certain technical and economic regulatory functions from NERSA to the Minister of Energy and the substitution of the NERSA nine-member board with a single Commissioner (or "energy tsar") and the establishment of a separate Appeals Board for the hearing of appeals on certain NERSA decisions.

The ISMO Bill proposes the establishment of an independent system and market operator (the "ISMO") and that the transmission business within Eskom and related assets be transferred to ISMO, leaving Eskom with its existing generation and distribution portfolio. It also proposes that ISMO will be exclusively empowered as the single wholesale buyer and re-seller of electricity. If this draft bill is enacted and brought into effect, ISMO will replace Eskom as the single buyer of electricity and become a key role player in the renewable energy market. The ISMO Bill was scheduled for consideration by parliament in 2013 but has been postponed until after the national elections held in South Africa on 7 May 2014.

4. What are the principal regulatory bodies in the renewable energy sector?

The key role players in the renewable energy sector are:

- The Minister of Energy, who is responsible for coordinating national energy policy, and integrated resource planning and determining whether new generation capacity may be procured, the type of generations technologies and primary fuel sources to be used in generation, and whether such generation capacity will be developed and owned by the state or by IPPs;

- The DoE, which is the procuring authority for new generation capacity from IPPs including the RE-IPP Procurement Programme;

- NERSA, which is responsible for giving effect to national energy policy and planning, the IRP and approving electricity tariffs;

- The Minister of Finance, whose concurrence is required in respect of any guarantees or financial commitments as may be provided by the Minister of Energy in respect of any new generation capacity programmes procured by it;

- Eskom in its capacity as the single buyer of electricity, the transmission system and service provider, and the main distribution system owner and service provider;

- local authorities which own and operate distribution facilities, and provide distribution services within their respective local boundaries; and

- subject to the enactment and coming into effect of the ISMO Bill, the ISMO, which will replace Eskom as the single buyer of electricity, the transmission system and service provider, and take over certain IPP procurement functions from the DoE.

5. What are the main permits/licenses required for renewable energy projects?

Although the specific licences, permits and approvals required for a particular project can only be fully assessed on a case-by-case, the following are typically required to conduct a renewable energy project:

- An electricity generation licence from NERSA in terms of the Electricity Regulation Act, 2006;

- An Environmental Authorisation issued by the Department of Environmental Affairs following either a Basic Assessment or a full Environmental Impact Assessment Report to be conducted in respect of the proposed Project Site in terms of Section 24 of the National Environmental Management Act, 1998;

- Consent must be obtained from the local municipality for rezoning of the project site to permit project-related activities to be conducted on a designated portion of land (which will also entail obtaining building plan approval once conditional approval to rezoning has been granted). The regulatory umbrella in this regard can be quite complicated but the most commonly relevant pieces of legislation are the Town-Planning and Townships Ordinance - Ordinance 15 of 1986 and the Spatial Planning and Land Use Management Act, 2013;

- Consent from the Minister of Agriculture in terms of the Subdivision of Agricultural Land Act, 1970 for the subdivision of farm land and/or the dual use of farm land, where required;

- Consent from the Minister of Mineral Resources is required by any person who intends to use the surface of any land in a way which is contrary to any object of the Minerals and Petroleum Resources Development Act, 2008 ("MPRDA") or which is likely to impede such object in terms of Section 53 of the MPRDA (typically whenever the intended land use will restrict or impede the utilization or extraction of mineral resources);

- Consent from the Civil Aviation Authority to erect a potential obstacle to aviation or confirmation from the CAA that no such consent is required in terms of the Civil Aviation Act, 2009;

- An integrated Water Use Licence in terms of the National Water Act, 1998;

- A waste management licence in terms of the Waste Act, 2008;

- Although not strictly a legal requirement, the RFP requires any prospective project company to obtain either a written confirmation of water allocation from a Water Services Provider (which will be either the relevant local municipality or a Water Board created in terms of the Water Services Act, 1997) or a non-binding confirmation of water availability from the Department of Water Affairs;

- The Occupational Health and Safety Act, 1993 prescribes the standards applicable to safety during construction and in the workplace generally in South Africa.

In addition to these requirements, it should be noted that the RE - IPP Programme is subject to a fairly complicated local content regime requiring bidders to commit to minimum economic development obligations which include black economic empowerment requirements prescribed by the Broad-Based Black Economic Empowerment Act, 2003. This Act was subject to significant amendments in 2013.

Investors are required to make commitments on seven broad measures: job creation; local content; ownership by black people and local communities; black top management; preferential procurement; local enterprise development; and socio-economic development.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

South Africa's taxation legislation provides the following mechanisms to encourage the uptake of electricity generated from renewable energy sources:

- a carbon tax referred to as an "environmental levy" of 3.5 South African cents per kWh (expressed in Rand or "ZAR"), which is imposed on non-renewable energy generators. This levy is anticipated to be phased out following the introduction of the carbon emissions tax referred to below;

- the cost of machinery and equipment used to produce bio-diesel or bio-ethanol or to generate electricity from wind, sunlight or gravitational water forces is deductible from the tax-payer's taxable income over a three-year period with 50% of the cost being deductible in the year in which the equipment is brought into use, 30% in year two and 20% in year three; provided that the machinery and equipment are affixed or mounted to a foundation or other supporting structure brought into use from 1 January 2013; and

- the proceeds received on the disposal of the carbon credits derived from projects that qualify as Clean Development Mechanism projects in terms of the Kyoto Protocol (commonly referred to as "CERs") are exempt from normal tax and capital gains tax until 31 December 2020.

In addition, as a part of its response to climate change, the government intends to introduce a carbon emissions tax of R120/t (one hundred and twenty South African rand per ton) of carbon dioxide equivalent on a phased basis from 1 January 2016 with annual increases of 10% for the initial implementation period.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Under the ERA read with the New Generation Regulations, the Minister of Energy may issue a determination for the procurement of new generation capacity from IPPs and designate the buyer of the electricity generated from such new generation capacity. Such determination is expressed in the ERA to be binding on the seller and buyer of the electricity of the procured new generation capacity.

The provision of a purchase guarantee is within the discretion of the procuring authority. In the case of the RE-IPP Procurement Programme, successful bidders will be awarded power purchase agreements pursuant to which the single buyer designated by the Minister of Energy will be obliged to purchase electrical energy supplied by the IPPs established by the successful bidders. The tariffs for such electrical energy will be fixed by reference to the bid prices as tendered by the successful bidders, subject to any permitted adjustments, e.g., for movements in the rate of foreign currency (to the South African Rand) used by and the base interest rates applied by the successful bidders up to financial close and permitted local inflation index adjustments over the term of the power purchase agreements.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

In early 2011, the DoE shifted its policy preference from feed-in tariffs to competitive tariffs, i.e., tariffs to be set pursuant to competitive tender proceedings, based on value for money considerations. Accordingly, pre-set tariffs are not available under the RE-IPP Procurement Programme and the programme further sets price caps on the tariffs that bidders are permitted to propose. These price caps may potentially be lowered for each bidding round under the RE-IPP Procurement Programme depending on, amongst other things, the rate of subscription and competitiveness of the pricing proposals received in each bidding round.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

South Africa acceded to the Kyoto Protocol on 31 July 2002 and the Kyoto Protocol came into force in South Africa on 16 February 2005 through a regulation published by the Minister of what was then the Department of Environmental Affairs and Tourism under Section 25 of the National Environmental Management Act, 1998.

The Section 25 regulation establishes the Department of Minerals and Energy (now the Department of Energy) as the Designated National Authority contemplated in the Kyoto Protocol to oversee the Clean Development Mechanism ("CDM") in South Africa. This means that it is tasked with, inter alia, reviewing applications for projects of developers who wish to participate in the CDM and approving projects for further evaluation and verification by the Designated Operational Entities established under the UNFCCC.

Qualifying projects are registered with the CDM Executive Board, which will also issue CERs to them. Such CERs can then be traded. South Africa has no domestic market for trading carbon emissions as South Africa itself faces no compulsory cap on its emission levels under the Kyoto Protocol. All participation in the CDM in South Africa is therefore on an entirely voluntary basis.

10. Do renewable energy based power plants have priority for connection to the grid?

There is no legislated provision for renewable energy generators to have priority on grid connection over non-renewable energy options. Currently, under the ERA, any transmission and distribution licensee must, to the extent provided for in its licence, provide non-discriminatory access to the transmission and distribution networks to third parties. This ensures that network owners cannot prioritise related generators over independent generators but does not ensure a preference for any class of generators such as renewable energy generators. What may discourage investment in the renewable energy sector are commercially prohibitive connection and use of system costs if and to the extent that these costs cannot be passed through to the buyer under power purchase arrangements.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

There are no direct incentives at this time. Instead, the procurement programmes for IPP development may include domestic manufacturing targets as a bid evaluation criterion.

12. What are the other incentives available to renewable energy generation companies?

See the taxation incentives mentioned in paragraph 6 above.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

South Africa has a gross installed electricity generation capacity of about 44,084 MW, of which approximately 90% is provided by coal-fired electricity generation facilities. Electricity production from hydro, natural gas and oil sources located in South Africa is nominal, comprising a little over 1%. Nuclear electricity production from the Koeberg power station, South Africa's only nuclear power station, is estimated at 4%. South Africa imports the balance of its electricity consumption requirements mainly from the Cahora Bassa hydro power plant in Mozambique and otherwise through the regional power exchange amongst members of the Southern African Power Pool.

Although there are no current statistics showing which renewable energy projects are currently generating electricity, based on anticipated position after the conclusion of Eskom's current new build programme and the first three bid submission phase of the RE - IPP Programme, it is anticipated that renewable energy will contribute to the national grid as follows:

Renewable Energy Source	Total MW	Estimated Percentage of Total Generation Capacity
Onshore wind	2086.49 MW	3.5%
Solar PV	1483.63 MW	2.5%
CSP	400 MW	0.67%
Hydro and other	848.3 MW	1.4%

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ÇAKMAK AVUKATLIK BÜROSU

GENERAL

1. What is the nature and importance of renewable energy in your country?

Turkey has a large potential for renewable energy. As of May 2014, the Energy Market Regulatory Authority ("EMRA") has issued generation licenses for 263 wind, 882 hydropower, 27 geothermal and 47 biomass power projects in Turkey. There are also 8 wind power, 10 hydropower, 7 geothermal and 10 biomass license applications currently pending before EMRA.

The promotion of renewable energy resources in electricity generation is particularly important for Turkey because of, among other reasons, the large potential for renewable energy, reducing the dependence on energy imports, strengthening the security of the energy supply, protecting the environment, and creating job opportunities.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Renewable energy resources covered by Renewable Energy Law No. 5346[1] (the "Renewable Energy Law") are wind, solar, geothermal, biomass, biogas (including landfill gas), wave, stream, tidal, river and arc type hydroelectric generation facilities, and hydroelectric generation facilities with a reservoir area of less than 15 square kilometers.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

The main piece of legislation governing the renewable energy sources is the Renewable Energy Law. The Renewable Energy Law of 2005 was amended by Law No. 6094, which entered into force on 8 January 2011 (the "2011 Amendment"). The Regulation on Documentation and Encouragement of Renewable Energy Resources[2] provides details regarding the implementation of the Renewable Energy Law.

Although geothermal energy is covered by and thus subject to the Renewable Energy Law, there is also a separate law specific to geothermal energy, namely the Geothermal Energy and Natural Minerals Law No. 5686.[3]

The Electricity Market Law No. 6446[4] (the "EML"), which repealed most of the provisions of the previous Electricity Market Law No. 4628, also includes several provisions which are generally or specifically applicable to renewable energy sources. The provisions of the EML on renewable energy are not substantially different from the Repealed Law.

1 Published in the Official Gazette No. 25819 dated 18 May 2005.

2 Published in the Official Gazette No. 28782 dated 10 October 2013.

3 Published in the Official Gazette No. 26551 dated 13 June 2007.

4 Published in the Official Gazette No. 28603 dated 30 March 2013.

The Electricity Market Licensing Regulation[5] also sets forth a number of provisions aimed at promoting the utilization of renewable energy resources in the generation of electrical energy as explained below.

4. What are the principal regulatory bodies in the renewable energy sector?

EMRA is the competent administrative authority responsible for the regulation and supervision of the electricity market. EMRA is authorized to take the necessary measures to promote the utilization of renewable energy resources.

The Ministry of Energy and Natural Resources also has certain authorities in the renewable energy sector, in particular, concerning the long-term strategy and planning of the sector.

5. What are the main permits/licenses required for renewable energy projects?

The required permits and licenses for a renewable energy project differ in accordance with the stage of the relevant project. At the Pre-Construction and Construction Stages the following main permits are required for a renewable energy project:

Generation License: In accordance with the EML and the Electricity Licensing Regulation, a license must be obtained from EMRA to operate in the electricity market except for renewable energy power plants with an installed capacity up to 1 MW and the renewable energy power plants generating electricity for their own needs.

EIA Affirmative Approval or EIA is not Required Decision: Pursuant to the Environmental Impact Assessment Regulation[6], certain facilities are subject to EIA Affirmative Approval. Certain other facilities are subject to selection-election criteria, meaning that, upon the examination of the EIA Report, an "EIA Is Not Required Decision" or "EIA Required Decision" is issued. If an "EIA Required Decision" is issued, then "EIA Affirmative Approval" needs to be obtained. Pursuant to the Licensing Regulation, EIA Affirmative Approval or EIA Is Not Required Decision must be received during the preliminary license period, which is a maximum of 24 months. In addition, EIA Affirmative Approval or EIA Is Not Required Decision is required as a pre-condition to receive a construction license.

Construction license (or exemption letter): In accordance with the Construction Law[7], a construction license must be obtained by the owner of a building. Any modification and alterations made in the existing buildings are subject to a new construction license to be issued for such modifications or alterations.

Preparation and approval of geotechnical and geological reports: In accordance with the Planned Areas Zoning Regulation[8], the Ministry of Environment and Urban Planning and/or authorized engineering firms are authorized to prepare the geotechnical and geological reports prepared for projects requiring construction. Geotechnical and geological reports are important tools for the determination of statics of the constructions. All geotechnical and geological reports are approved by the General Directorate of Disaster Affairs or the relevant governorship depending on their technical qualification.

Approvals of the master plan, local master plan, parcellation plan: Pursuant to the Construction Law, if the population is over 10,000 there

5 Published in the Official Gazette No. 28809 dated 2 November 2013.

6 Published in the Official Gazette No. 28784 dated 3 October 2013.

7 Published in the Official Gazette No. 18749 dated 9 May 1985.

8 Published in the Official Gazette No. 18916 dated 2 November 1985.

must be a master plan whereas in places where the population is less than 10,000 a master plan is required only if the municipal council renders a decision in this regard.

Agreement with the construction supervision company: Pursuant to the Construction Supervision Law, construction owners must execute an agreement with construction supervision companies that will ensure that the construction itself and the materials used therein will be in accordance with the technical standards, specifications and the relevant legislation. The Construction Supervision Law applies to all constructions within and outside of municipality and neighboring zones, except for facilities specified in the Construction Law (public buildings and buildings that are exempt from construction license requirement) as well as isolated buildings not exceeding 200 m^2 with two floors except the basement in a single parcel of land.

In the Operation Stage, the following main permits are required:

Environmental permit or temporary activity certificate until the environmental permit is issued (concerning aerodynamic noise for wind projects): Pursuant to the Environmental Permits and Licenses Regulation[9], facilities causing environmental pollution must receive an environmental permit or temporary activity certificate until the environmental permit is issued. This certificate is issued to cover the air emissions, wastewater discharge, noise control and disposal of dangerous waste related issues.

Work place opening and operating permit: Pursuant to the Regulation Regarding Workplace Opening and Operation Permits[10], work places cannot begin their activities without obtaining work place opening and operating permit from the administrations.

Building use permit: In accordance with the Construction Law, a building use permit must be obtained by a project company from the relevant municipality after completion of the facilities.

Security report to prevent major accidents: Pursuant to the Health and Safety Law, workplaces carrying out industrial activities that may cause major accidents must prepare a security report including the precautions to be taken to prevent any major accident.

Environmental management unit establishment or execution of environmental consultancy agreement: Pursuant to the Environmental Auditing Regulation[11], facilities that may cause environmental pollution must establish an environmental management unit or execute an environmental consultancy agreement.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

In accordance with Article 25 of the EML, the documents and transactions which are related to agreements on water usage and operation principles and do not require joint facility investment amount repayment and that are executed after 26 June 2003 by State Hydraulic Works, shall be exempt from stamp tax and duties.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The Renewable Energy Law provides a purchase guarantee for electricity generated by renewable energy companies. It provides that electricity suppliers (supplying electricity to end users) are

[9] Published in the Official Gazette No. 27214 dated 29 April 2009.

[10] Published in the Official Gazette No. 25902 dated 10 August 2005.

[11] Published in the Official Gazette No. 27061 dated 21 November 2008.

required to purchase a certain percentage of the amount of electricity that they sold in the previous year from renewable energy companies participating in the Renewable Energies Support Mechanism (YEKDEM). Such purchase guarantee is applicable for the first 10 years of operation of renewable energy companies.

Before the 2011 Amendment, bilateral energy purchase agreements were required to be signed in order to perform the purchase obligation. The 2011 Amendment, however, set forth a new method for the performance of the purchase obligation of the suppliers. Accordingly, the purchase obligation will be performed through a program, in which all suppliers subject to purchase obligation and all renewable energy companies that prefer to participate in YEKDEM will participate, rather than executing separate bilateral agreements for each sale transaction between each supplier and each renewable energy company.

The Market Financial Settlement Centre ("MFSC") determines (i) the total generation by each power plant included in this program for each invoice period, and (ii) the price to be paid for each power plant. The sum of the prices determined for each power plant is determined and announced for each respective invoice period.

The purchase obligation ratio of each supplier is determined by MFSC by determining the ratio of the amount of energy supplied to the final consumers by each of the suppliers for the same invoicing period to the total amount of energy supplied to all of the final consumers in Turkey. Then the amount corresponding to the share of each supplier is calculated by multiplying the purchase obligation ratio of each supplier with the total price to be paid to the renewable energy companies and notified to the parties and invoiced to the related supplier by MFSC. Renewable energy companies are eligible to participate in this program on an annual basis at the beginning of each calendar year; and they cannot leave the program during that year. Those companies that do not wish to participate in the program can sell electricity on the open market and can sign bilateral energy sale/purchase agreements. In such cases, however, they would not be entitled to benefit from the purchase and price guarantee incentives of the Renewable Energy Law.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The Renewable Energy Law provides a minimum price guarantee for the electricity generated by renewable energy companies as follows:

	First 10 years of operation (US dollar cents/KWh)
Hydropower	7.3
Wind	7.3
Geothermal	10.5
Solar	13.3
Biomass (including landfill gas)	13.3

The Council of Ministers is authorized to determine the fixed guaranteed prices and the terms applicable for the renewable energy types that are not included in the table above.

The above figures are envisaged to apply only to power plants that will be commissioned on or before 31 December 2020. The fixed guaranteed prices and the terms applicable for the power plants to be commissioned after 31 December 2020 shall be regulated by Council of Ministers' Decrees, but such prices shall not exceed the above-stated prices.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Turkey entered into the Framework Convention in 2004 and became a party to the Kyoto Protocol on 5 February 2009 with certain caveats. The Protocol was ratified on 16 February 2009 and entered into force on 17 February 2009.

Turkey is among the Annex-I countries under the Protocol; however it is not included in Annex B, which sets forth the liabilities of the Annex-I countries. As a result, Turkey did not have any liability regarding the reduction of emission levels for the first liability period which ended at the end of 2012 and does not have any liability regarding the reduction of emission levels for the second liability period which will last until 2020. However, it is subject to the common liabilities set forth in Article 10 of the Protocol applicable for all contracting parties, such as the preparation of annual inventories, and publication of national communications every four years and reports every two years.

The Ministry of Environment and Urban Planning prepared a Communique on Voluntary Carbon Market Project Registration[12] to fulfil such liabilities. Accordingly, the owners of projects developed to receive a carbon certificate register with the Ministry and these projects must be approved by independent auditing institutions accredited by the Kyoto Protocol.

After the conference held in Doha in November 2012, the objectives for the second liability period, which will last until 2020, were determined. An agreement to determine the obligations and rights under the Kyoto Protocol with respect to the countries is planned for execution by 2020.

[12] Published in the Official Gazette No. 28790 dated 9 October 2013.

10. Do renewable energy based power plants have priority for connection to the grid?

Article 14 of the Electricity Market Licensing Regulation provides that the Turkish Electricity Transmission Company ("TEİAŞ") and/or the legal entities holding a distribution license shall give priority to the facilities generating electricity from renewable energy resources in terms of their connection to the transmission and/or distribution systems.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

The Renewable Energy Law provides a domestic production incentive for projects commissioned by 31 December 2015 (extended until 31 December 2020 by Council of Ministers) that use mechanical and/or electromechanical components produced in Turkey. The level of additional incentives will depend on the share of domestically produced components used in the plant. The additional incentives will be available for 5 years from the date of commencement of commercial operation of the plant. Annexed to the Renewable Energy Law, there is a chart stating, in detail, the incentive level for each type of component.

The Council of Ministers is authorized to determine the domestic production incentives available for renewable energy producers to be commissioned after 31 December 2020. On 19 June 2011, the Ministry of Energy and Natural Resources issued a regulation regarding the procedures and principles to define the scope of domestic production, its standards, certification and related inspection procedures. Pursuant to an amendment to the Regulation in July 2012, at least 55% of the equipment must be domestically produced to benefit from this incentive. In 2013, 16 renewable energy projects have benefited from this incentive.

12. What are the other incentives available to renewable energy generation companies?

Article 20(6) of the Electricity Market Licensing Regulation provides that legal entities which apply to EMRA to obtain a license for generation of electricity from renewable energy resources are required to pay only 10% of the license acquisition fee and are exempted from the payment obligation of the remaining 90% of such fee. In addition, they are also exempted from the annual license fee payment obligation for a period of 8 years after the completion date of the construction of the facilities stated in their licenses.

Pursuant to the Renewable Energy Law, no service fee shall be collected from individuals or legal entities willing to construct generation facilities to meet their own energy needs from renewable energy resources, for the preparation of a final project, planning, master plans, initial examination and initial studies to be performed by the State Hydraulic Affairs General Directorate or the Electricity Affairs General Directorate. In addition, investments for energy generation facilities, procurement of electro-mechanic systems within the country, research, development and production investments concerning solar energy units, and research and development investments for biomass energy may benefit from these incentives if authorized by a Council of Ministers' Decree.

Pursuant to the Electricity Market Law, in the event that the forests and the lands under private ownership of the Treasury, or under the control or disposal of the State, are utilized for the generation of electricity from renewable energy resources, such lands shall be leased to, or the right-of-way or usufruct rights thereof, shall be granted to the relevant entities. An 85% discount shall be applied for the fees of such rights during the investment period and the first 10 years of the operation period, provided that the power plant is commissioned by the end of 2020.

The Renewable Energy Law also provides the following incentives for renewable energy producers:

- Renewable energy producers are entitled to construct additional capacity on the condition that such additional capacity is constructed within the area specified in their licenses and that the power delivered to the transmission system does not exceed the installed capacity stated in their licenses;

- Priority shall be given to renewable energy projects when evaluating the connection requests of generation license applicants to the transmission system;

- Renewable energy projects can be developed in national parks, natural parks, natural protection zones, protected forests, natural sites, etc. on the condition of receiving affirmative opinion of the relevant Ministry or the relevant general directorate of protection, as the case may be;

- Pursuant to Supplementary Article 2 of Law No. 4706 Concerning the Immovable Properties of the Treasury, for the establishment of usufruct rights over the Treasury and State owned lands, the right holder must pay 1% of its revenues to the Treasury in addition to the usufruct fee. The 2011 Amendment removes this 1% payment obligation for renewable energy producers;

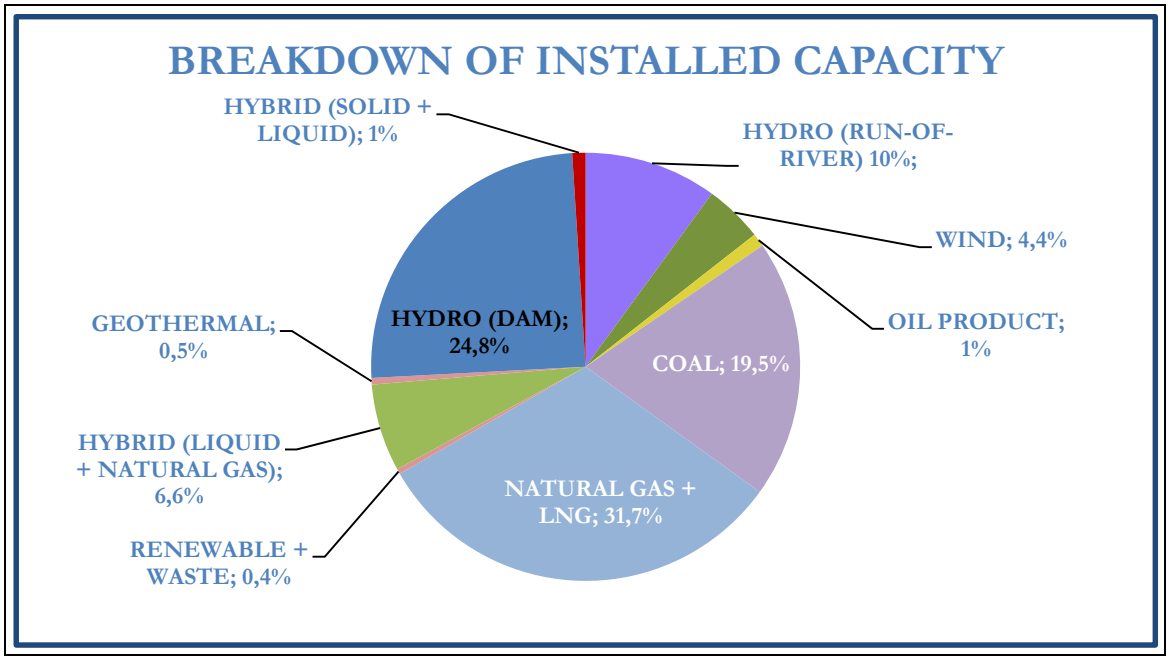
- On 2 October 2013, EMRA has issued a regulation regarding the procedures for application, permitting, inspection, technical and financial matters for renewable energy based generation facilities with a minimum established power of 1 MW and micro

cogeneration facilities exempt from the obligation to obtain a license or establish a special purpose company. Individuals and legal entities generating electricity within the scope of this provision benefit from the above stated guaranteed prices for 10 years if they generate more than their needs and transmit such excess to the system.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

The installed capacity of Turkey as of March 2013 is 65,736 MW. The breakdown of such installed capacity is as follows (Source: TEİAŞ)



Electricity generation in Turkey was approximately 239.2 billion kWh in 2013 while electricity consumption was 246.7 billion kWh in the same year (Source: TEİAŞ).

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GENERAL

1. What is the nature and importance of renewable energy in your country?

There is a relatively new focus on renewable energy in the UAE that is increasingly important politically and economically. Recently, the UAE participated in some of the most significant renewable energy projects in the region and the world.

Within the UAE, Abu Dhabi is the leading Emirate in participating in renewable energy projects and investment. The Abu Dhabi government formed the Abu Dhabi Future Energy Company ("ADFEC", also branded as "Masdar") by legislation in 2007 as a vehicle for implementing renewable energy policy.

ADFEC is mandated to develop and invest in projects in various sectors in accordance with its sustainability objectives, including renewable energy, carbon reduction and energy efficiency projects.

One of ADFEC's flagship projects is Masdar City, a USD 22 billion development aimed at being one of the most sustainable and carbon neutral cities in the world. Masdar City will host the research and development activities of a number of international energy and materials companies (such as BASF, Siemens, GE and Schneider) as well as the headquarters of the International Renewable Energy Agency.

Increasingly, Dubai is also investing in renewables projects. The Dubai government is promoting investment pursuant to the "Dubai Integrated Energy Strategy 2030" aimed at increasing the role of renewable energy in the Emirate's energy mix. Dubai successfully completed a 13 MW photvoltaic solar power project in October 2013 and is currently procuring a 100 MW expansion to this project, representing the first step in implementing this strategy. This strategy will likely be supported by continuing support from the private sector.

2. What is the definition and coverage of renewable energy under the relevant legislation?

Despite significant political and economic support for renewable energy in the UAE and its Emirates, the relevant statutory regimes regulating the electricity industry gives very little attention to renewable energy and, as such, renewable energy is largely an undefined concept under UAE law.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

There is no separate regulatory treatment for renewable energy in the body of UAE and Emiri laws regulating the electricity sector. As a consequence, there are no legislative regimes encouraging the development of renewable energy projects, such as feed-in-tariffs.

Instead, governments in the UAE implement renewable energy policy via government-owned utilities or, in the case of Abu Dhabi, via ADFEC.

It is anticipated that some Emirates will adopt laws giving specific treatment to renewable energy in the coming years.

4. What are the principal regulatory bodies in the renewable energy sector?

There are no regulatory bodies that have been separately established in the UAE to independently regulate the renewable energy sector.

This means electricity generated using renewable sources falls within the regulatory scope of the relevant power and water authorities of each Emirate.

Abu Dhabi and Dubai have established regulatory bodies that function independently from the relevant authorities in connection with the electricity and water privatization schemes of those Emirates. Fujairah and Sharjah have established electricity authorities that perform a regulatory role. Regulation in the remaining Emirates in the UAE is supported by a federal regulator established by the UAE government.

5. What are the main permits or licenses required for renewable energy projects?

There are currently no specific licenses or permits required for renewable energy projects in addition to those required for conventional power projects.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

The UAE is largely tax free and so there are no specific tax advantages for companies engaged in renewable energy generation.

However, project companies involved in key renewable energy projects in the UAE have been contractually entitled to exemption from paying duties and taxes on the importation of plant, equipment and materials for those renewable energy projects.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

There is no legislative right to a purchase guarantee for electricity generated by renewable energy companies.

However, some of the renewable energy projects undertaken in the UAE have involved contractual rights for project companies that are comparable to a legislative purchase guarantee.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

There is no legislative right to a minimum price guarantee for electricity generated by renewable energy companies.

However, a unique feature of key renewable energy projects planned and operating in Abu Dhabi is the Green Payment Agreement ("GPA"). Broadly, the GPA obliges the Abu Dhabi government to pay the project company additional amounts of the electricity tariff. This mechanic essentially operates as a private right to a long term feed-in-tariff.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

The UAE ratified the Kyoto Protocol on 26 January 2005.

10. Do renewable energy based power plants have priority for connection to the grid?

There is no legislative right to priority connection of renewable energy power projects to the electricity grid.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

There is no legislative right to incentives for domestic manufacture of equipment or materials used to construct renewable energy power projects.

12. What are the other incentives available to renewable energy generation companies?

Power projects in the UAE typically involve a government-related entity as a sponsor and therefore tend to benefit from advantages that are not available on other infrastructure projects (such as government guarantees, priority access to land and streamlined permitting), although these advantages are equally applicable to fossil fuel power projects.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

There are no official statistics published for renewable generation capacity installed in the UAE. However, the two emirates of Abu Dhabi and Dubai have set the following non-binding targets:

- *Abu Dhabi*: target of 7% renewable energy generation capacity by 2020 (1,500 MW); and
- *Dubai*: target of 5% renewable energy generation capacity by 2030 (1,000 MW).

Renewable energy projects in the UAE use direct and indirect solar (photovoltaic and concentrated) and wind for electricity generation (although ADFEC has explored alternatives, such geothermal energy). These projects represent a small percentage of the total installed capacity in the UAE.

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GENERAL

1. What is the nature and importance of renewable energy in your country?

The use and generation of renewable energy is essential to the UK's commitments to reduce carbon emissions, avert climate change and generally "green" the UK economy.

The UK aims to make the transition to a low carbon economy, while maintaining energy security and minimizing costs. By moving towards a more efficient, low carbon and sustainable economy, the UK is becoming less reliant on imported fossil fuels and will be less exposed to higher and more volatile energy prices in the future.[1] The challenge of shifting to a low-carbon, 'green economy' continues to require the adoption and implementation of comprehensive environmental objectives and effective policy measures supporting them. In the UK this includes:

- The Climate Change Act, which established a legally binding target to reduce the UK's greenhouse gas emissions by 80% by 2050, with an interim target of emissions reductions by 34% by 2020, compared with 1990. A 50% reduction from 1990 levels must be achieved by 2025 (for the period 2023–2027).[2] The Act introduced a system of carbon budgets which provide legally binding limits on the amount of emissions that can be produced in successive five year periods. The UK continues to support the EU Emissions Trading System (EU ETS). Phase III of the EU ETS runs from 2013 to 2020 and brings significant changes. It introduces an EU-wide cap on emissions, with the goal of reducing emissions in 2020 by at least 21% below their level in 2005.[3] Auctioning, not free allocation, is now the default method for allocating allowances and in 2013 more than 40% of allowances were auctioned.[4] The EU cap reduces the number of available allowances by 1.74% each year to deliver an overall reduction of 21% below 2005 emission levels by 2020. Phase III also broadens the scheme to include more industrial sectors (e.g., aluminum and part of the chemical industry) and more greenhouse gasses (nitrous oxide and perfluriocarbons). In addition, the monitoring and reporting requirements have been updated;[5]

- Implementing the Renewable Energy Target under which the UK has committed to deriving 15% of all energy from renewable sources by 2020 (in line with the EU Renewable Energy Directive);

- A carbon price floor, which was implemented on 1 April 2013.[6] It changes the previous Climate Change Levy (CCL) regime by applying carbon price support rates of CCL to gas, fuels and liquefied

1 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47614/3751-carbon-plan-executive-summary-dec-2011.pdf*

2 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47614/3751-carbon-plan-executive-summary-dec-2011.pdf, page 3*

3 *http://www.carbontrust.com/media/84896/ctc734-cutting-carbon-in-europe-2020-plans.pdf*

4 *http://ec.europa.eu/clima/policies/ets/index_en.htm*

5 *http://ec.europa.eu/clima/policies/ets/monitoring/docs/gd1_guidance_installations_en.pdf*

6 See *http://www.hm-treasury.gov.uk/d/carbon_price_floor.pdf*

petroleum gas used in electricity generation;[7] The carbon price floor will be capped at £18 per tonne of carbon dioxide from 2016-17 to 2019-20.[8]

- the UK Green Deal (for domestic energy efficiency); and

- Government support for carbon capture and storage technology development. The UK Carbon Capture and Storage (CCS) Commercialisation Competition makes available £1 billion capital funding, together with additional operational funding through the UK Electricity Market Reforms, to support the construction and operation of the UK's first commercial scale CCS projects. In March 2013 DECC announced that it would take two preferred bidders out of four to the planning and design stage. The Peterhead project in Aberdeenshire involves CSS at the existing gas-fired power station, to be transported and stored in a gas reservoir beneath the North Sea. The White Rose project in Yorkshire uses CSS at a new oxyfuel coal-fired power station with potential to co-fire biomass, to be stored in a saline aquifer beneath the North Sea. The project involves Alstom, Power, BOC and the National Grid.[9]

In addition, the UK has a 4 year (2011- 2015) £125 million government CCS research, development and innovation program. On 28 November 2012, the UK became the first country in the world to create a bank dedicated to the green economy with the launch of the Green Investment Bank (GIB)[10]. With funding of £3.8 billion capital, the GIB aims to support green infrastructure and the financing of projects designed to meet the UK's legally binding targets laid out in the Kyoto Protocol, the Climate Change Act 2008 and the Energy Act 2013. Such targets include a reduction in greenhouse gas emissions of 34% by 2020[11]. The GIB is designed to be a catalyst to encourage private sector lenders and investors, by partnering with those already committed to the green economy and providing additional capital.[12] In March 2014 the GIB announced two equity investments in the UK offshore wind sector. The GIB committed £241 million, alongside Japan's Marubeni Corporation, to jointly purchase a 50% stake in Yorkshire offshore wind farm. In the other, the bank acquired a 10% stake in a Welsh offshore windfarm. Currently in the late stages of construction, it will become the largest offshore wind farm in Europe.

One of the most important pieces of reform is the recent Electricity Market Reform. This was implemented through the Energy Act 2013, which was granted Royal Assent in December 2013. The Electricity Market Reform is the transition from the current Renewables Obligation ("RO") regime, to Contracts for Difference ("CfDs"). These are long-term contracts which will be available to all low carbon generators and will replace the current main support mechanism for large-scale renewable electricity generation. CfD applicants will be able to submit applications to the Delivery Body from October 2014. The current RO regime will be closed to all new generation from 2017, with developers offered a choice between CfD and RO between 2014 and 2017.[13] Electricity generation that is

7 *http://www.hmrc.gov.uk/climate-change-levy/carbon-pf.htm*

8 *https://www.gov.uk/government/publications/carbon-price-floor-reform*

9 *www.parliament.uk/briefing-papers*

10 See *http://www.greeninvestmentbank.com/*

11 This target was set by the Committee on Climate Change in 2008

12 See *http://www.greeninvestmentbank.com/userfiles/ files /Our-Investment-Approach.pdf*

13 *https://www.gov.uk/government/uploads/system/uploads /attachment_data/file/289076/Transition_and_Grace_Periods_Government_Response_-_12_Mar_2014.pdf*

accredited under the RO will continue to receive support until the scheme closes in 2037.[14] The market reform is in more detail below.

Promoting a diverse mix of renewable and low-carbon energy sources

Harnessing natural resources to reduce the UK's dependence on fossil fuels is considered essential to ensure greater security of energy supply and development of technology for a cleaner environment, as well as reducing greenhouse gas emissions. Potential resources include wind, biomass, biofuels and hydroelectric power.

The UK ranks first in the world for offshore wind power generation in terms of installed capacity. It currently has the largest offshore wind development pipeline, including a project to construct a windfarm in Aberystwyth with up to 27 turbines, with a 81-89 MW generating capacity.[15] The government is attempting to increase the amount of onshore wind power produced so that it will account for 15% of renewable energy by 2020.[16] Wind energy is currently the cheapest large-scale renewable energy source which can be deployed on a large scale.[17]

In 2012 Bioenergy accounted for 73.7% of renewable energy fuel use.[18] Of the bioenergy produced in the UK in 2012, half was generated from landfill gas and the remainder from wood, sewage gas, bioliquids, animal and plant residues and other wastes[19]. In 2012 the largest absolute increase in generation from renewables came from plant biomass, due to the conversion of a previously coal fired power station at Tilbury to a biomass-fired electricity generator,[20] which consumes around 2.7 million tons of sustainably-sourced wood pellets each year.

In the government response to the follow-up RO consultation on biomass affordability, the government announced the introduction of a new dedicated biomass capacity cap set at 400MW on new-build dedicated biomass power generation. While biomass is expected to make a significant contribution to delivering the UK's 15% renewable energy target in 2020, the Government aims to ensure this cap will bring new biomass projects into existence that are both cost and carbon effective.[21]

Approximately 1.5% of the UK's electricity is derived from hydroelectric power. Whilst the potential for large-scale development (hydro plants producing more than 5MW) is limited because of environmental concerns and the reality that most economically attractive sites for hydroelectric schemes have previously been utilised, the UK's remaining small-scale hydro resources (producing less than 5MW) are being exploited in a sustainable manner. It is estimated that a viable hydro potential of 850 to 1,550MW remains available, constituting approximately 1-2% of current UK generating capacity[22].

14 *https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/the-renewables-obligation-ro*

15 *https://www.gov.uk/offshore-wind-part-of-the-uks-energy-mix*. See also: *http://infrastructure.planningportal.gov.uk/projects/wales/mynydd-y-gwynt-wind-farm*

16 *https://www.gov.uk/onshore-wind-part-of-the-uks-energy-mix*

17 See*https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42852/5936-renewables-obligation-consultation-the-government.pdf,* page 46.

18 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/279547/DUKES_2013_Chapter_6.pdf*

19 See *https://www.gov.uk/government/uploads/system/ uploads/attachment_data/file/65850/5956-dukes-2012-chapter-6-renewable.pdf*

20 *https://www.gov.uk/government/uploads/system/uploads/;attachment_data/file/279547/DUKES_2013_Chapter_6.pdf*

21 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/197993/consultation_notification_process_new_build_dedicated_biomass_projects.pdf*

22 See *https://www.gov.uk/harnessing-hydroelectric-power*

Renewable Energy Policy

Recently, the following major pieces of policy have determined the UK Government's approach to renewable energy: the Stern Review on the Economics of Climate Change (2006), the Energy White Paper: meeting the energy challenge (2007), the Renewable Energy Strategy (2009), the UK Low Carbon Transition Plan White Paper (2009), 'Smarter Grids: The Opportunity' (2009), the Electricity Market Reform: Contracts for Differences policy paper (2014), the Energy Security Strategy (2012) and the updated UK Renewables Energy Roadmap (2013). In addition, Government Climate Change Plans, such as Defra's Climate Change Plan 2010[23] and DCMS' Climate Change Plan 2010-2012[24] set out the actions specific government departments are taking to reduce greenhouse gas emissions across their policy areas. Carbon budgets that place a restriction on the total amount of greenhouse gases the UK can emit over a 5-year period are a further measure the UK is taking to drive the UK's transition to a low-carbon economy.

With the backdrop of the 2006 Stern Review on the Economics of Climate Change, in 2007 the UK Government released its Energy White Paper on the UK's international strategy to tackle climate change and energy security together, so as to ensure secure and affordable energy supplies.

Following on from this, the Renewable Energy Strategy (2009)[25], which addresses the UK's obligations toward the EU's 20% renewables target by 2020, sets a target of 15% of the UK's energy supply coming from renewable sources by 2020. The government has targeted approximately 30% renewable sources for electricity generation, 11% for heat and 10% for transportation.[26]

The Low Carbon Transition Plan commits to GHG cuts of 18% on 2008 levels by 2020 by, amongst other things, substantially increasing the requirement for electricity suppliers to sell renewable electricity.[27] The Transition Plan aims to ensure 40% of the UK's electricity and 10% of the UK's transport fuels comes from low carbon sources by 2020. The UK is said to be on track to meet this target: in 2013 renewables accounted for 15.5% of electricity generation, up from 9.7% in the second quarter of 2012.[28]

In November 2013, the Government updated the UK Renewable Energy Roadmap[29], which analyses the progress which has been made in made in meeting the targets established under the EU Renewable Energy Directive[30] including the 2020 target to deliver 15% of the UK's energy demands from renewable sources. In 2012, 4.1% of UK energy consumption came from renewable sources, including onshore and offshore wind, solar, marine energy, biomass electricity and biomass heat. This is an increase of 0.3% from 2011,[31] which exceeds the interim target for that year.

23 See *http://www.defra.gov.uk/publications/2011/03/26/climate-change-plan-2010-pb13358/*

24 See *https://www.gov.uk/government/uploads/system/ uploads/attachment_data/file/78335/DCMS_Climate_Change_Plan2010_12.pdf*

25 *See Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.*

26 See also *www.decc.gov.uk/en/content/cms/what_ we_do/uk_supply/energy_mix/renewable/policy.*

27 *http://centralcontent.fco.gov.uk/central-content/campaigns/act-on-copenhagen/resources/en/pdf/DECC-Low-Carbon-Transition-Plan*

28 *http://www.carbonbrief.org/media/243491/screen-shot-2013-10-31-at-104749.png*

29 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48128/2167-uk-renewable-energy-roadmap.pdf*

30 2009/28/EC

31 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48128/2167-uk-renewable-energy-roadmap.pdf*

In addition, the Roadmap provides an update on the deployment of renewables in the UK. Between July 2012 and July 2013, the UK saw a 24% increase in overall renewable energy generated (with more than 15.5% of all energy generated in the UK coming from renewable sources). In addition, there was a 38% increase in UK renewable capacity, with growth seen across the majority of sectors and driven especially by an increase from 10.6GW to 15.1GW in the offshore wind capacity and a 70% increase in solar PV capacity.[32]

Alongside the Renewable Energy Roadmap, the Electricity Market Reform incorporates reforms to decarbonize electricity in the UK. The key elements of this market reform will be delivered through two new mechanisms: CfDs and the Capacity Market. The Capacity Market is designed to financially incentivise service providers to offer reliable clean energy supplies. It offers all capacity providers a steady, predictable revenue stream (capacity payments) on which they can base their future investments, in return for which they must deliver the capacity demands, or face penalties.[33]

Important Legislation

Numerous pieces of legislation have come into effect over the past few years to support these policies.

The UK Climate Change Act 2008 mandates the Secretary of State to ensure that the net UK carbon emissions by 2050 are at least 80% lower than the 1990 baseline (for the period 2023–2027).[34] This act established the independent Commission on Climate Change and introduced legally binding 'carbon budgets' which restrict the total amount of greenhouse gasses the UK can emit over a 5-year period. The UK is the first country to set these legally binding budgets.[35]

The UK Energy Act 2008, which came into force in November 2008, implements the legislative aspects of the Energy White Paper and updates energy regulation to protect the environment, meet security of supply needs, and reflect on the availability of new technologies (such as emerging renewable technologies).[36]

The Energy Act 2011, which received Royal Assent on 18 October 2011, establishes the framework to implement the Coalition Government's "Green Deal"[37] plan, and is a flagship initiative designed to improve the energy efficiency of properties in the UK. The Act also implements provisions for the Energy Companies Obligation (ECO), the Government's new domestic energy efficiency program, which replaces pre-existing Carbon Emission Reduction Target (CERT)[38] and Community Energy Saving (CESP)[39] programs, both of which closed at the end of 2012.

The ECO, which will run until 31 March 2015, provides a legal obligation on energy suppliers to improve the energy efficiency of households via three distinct targets: (i) the Carbon Emissions Reduction Obligation; (ii) the Carbon Saving Community Obligation; and (iii)

32 *https://www.gov.uk/government/uploads/system/ uploads/attachment_data/file/80246/11-02-13_UK_Renewable_Energy_Roadmap_Uppdate_FINAL_DRAFT.pdf*

33 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/267735/EMR_-_Update_on_Terms_for_the_Contract_for_Difference_v8.pdf*

34 Section 1(1), Climate Change Act 2008, Ch. 27Part 1.

35 *https://www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050/supporting-pages/carbon-budgets*

36 See *www.decc.gov.uk/en/content/cms/legislation/ energy_act_08.*

37 This is a framework currently being established by the UK Government where companies can offer their customers improvements to their homes, communal areas and businesses at no initial cost, and then charge customers in installments on their energy bills subsequently.

38 See *http://www.ofgem.gov.uk/Sustainability/ Environment/EnergyEff/Pages/EnergyEff.aspx*

39 See *http://www.ofgem.gov.uk/Sustainability/ Environment/EnergyEff/cesp/Pages/cesp.aspx*

the Home Heating Cost Reduction Obligation. The Office of the Gas and Electricity Markets (Ofgem) (discussed further below) will administer the ECO for its duration.

The Energy Act 2013introduces an Emissions Performance Standard which provides a regulatory limit of 450 CO_2/kWh on the amount of carbon dioxide new fossil fuel power stations with a net capacity over 50MW are allowed to emit.[40] This is intended to prevent the construction of high emission coal power plants, but still allow gas plants, albeit that these may need to operate at a reduced capacity.

The UK RO regime, previously the main support for renewable power generation in the UK,[41] is being replaced by the Electricity Market Reform, as implemented by the Energy Act 2013.

Under the Electricity Market Reform, CfD's are intended to encourage investment in low-carbon technologies by providing greater certainty of revenue, which will reduce risks to investors and make it easier and cheaper to secure finance.[42] Certainty is provided because key terms cannot be altered, even in the event that a future government seeks to change policy objectives. The program for Electricity Market Reform has been established to attract the £110 billion of capital investment[43] which the UK electricity sector will need to replace and upgrade the UK's electricity infrastructure. The electricity sector is a critical part of the UK economy, is an important driver of growth and is key to meeting the UK's commitment to reduce its carbon dioxide emissions.

The Government's objectives for the Electricity Market Reforms are to ensure a secure electricity supply, ensure sufficient investment in sustainable low-carbon technologies and to minimize costs for consumers. As of February 2014, the Government has published the Electricity Market Reform Delivery Plan,[44] the CfD contract terms[45] and a Consultation paper on the allocation of CfD. It is expected that the final Allocation Framework will be published in June 2014[46] and the first contracts awarded early 2015. The draft Allocation Framework sets out the application and CfD offer processes, including the eligibility and qualification assessment, auction rules and the valuation formula. The principle provisions relate to (i) contract terms (length of the standard contract will cover 15 years of payments, which contrasts with the 20 years under the RO regime, and there is currently no provision for the CfD Counterparty to take a share of higher returns generated by project refinancing; (ii) termination events; and (iii) the reference price (discussed further below). In respect of termination, three events give the CfD Counterparty a right to terminate a CfD:

a) failure by the generator to achieve the initial conditions precedent within a limited period after contract signature;

b) either before or during CfD payments, if certain changes in law prevent completion of construction or any further operation; and

40 Section 57 Energy Act 2013

41 *The England & Wales and Scotland Renewables Obligation Orders were introduced in April 2002. In Northern Ireland, it was introduced in April 2005. Northern Ireland Renewables Obligation (NIRO) is administered by Ofgem on behalf of the Northern Ireland Authority for Energy Regulation (NIAER). For details in each jurisdiction, see www.ofgem.gov.uk/Sustainability/ Environment/RenewablObl/Pages/RenewablObl.aspx.*

42 *https://www.gov.uk/government/publications/electricity-market-reform-contracts-for-difference*

43 *https://www.gov.uk/government/policies/maintaining-uk-energy-security--2/supporting-pages/electricity-market-reform*

44 *https://www.gov.uk/government/publications/electricity-market-reform-delivery-plan*

45 *https://www.gov.uk/government/publications/electricity-market-reform-contracts-for-difference*

46 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/307060/cfd_policy_drafting_update.pdf*

c) while the CfD payments are being made, if the generator breaches specific key obligations (principally insolvency, non-payment, failure to comply with collateral obligations, fraud or failure to comply with metering obligations).

If (a) or (b) are breached neither party is entitled to a termination payment, although under (b) the generator may receive compensation under change in law provisions. Under (c) the generator is liable for a termination payment to the CfD counterparty. This is intended to reassure new projects that entry into a CfD will not add to their liabilities in the event of completion delay.

Reference Price

In December 2012 the DECC produced the first Electricity Market Reform Delivery Plan which sets out strike prices for CfDs for the period 2014/15 – 2018/19. [47] With these strike prices the Government aims to ensure 30% of electricity is generated from renewable sources by 2020, while keeping costs as low as possible[48]. The prices are designed to be broadly comparable to the support levels under the current RO regime and are designed to fall over the course of the decade, as the renewable energy technology costs decrease. Offshore wind projects, for example, will qualify for £155/MWh of support in 2014/15, which falls steadily over the next five years to £140/MWh in 2018/19. Fourteen categories replace the thirty five under the RO regime. Tidal range and nuclear projects do not have a published strike price. Instead DECC will consider how best to price CFD's and the appropriate length of contracts for these projects on a case by case basis. The prices for renewables are intended to be comparable to the support levels currently available under the RO, taking into account differences such as contract length and inflation indexation arrangements. Strike prices are also set by reference to the constraints of the Levy Control Framework[49] and the expectations of future technology costs. The intention is that the new regime will save consumers around £5 billion by 2030.[50]

Other important provisions include (i) change in law; (ii) the negotiability of CfDs; and (iii) offtaking (discussed further below). The change in law provisions are designed to provide the CfD Holder with an element of protection so that the long-term price stability afforded to CfD holders is not undermined by legislative and regulatory changes. The definition of a 'Qualifying Change of Law' is wide enough to cover general changes in law which have a discriminatory effect and lack objective justification.[51] Most significantly, compensation covers lost revenue, not just added costs. In respect of negotiability of the CfDs, the Government intends to offer a standard contract to generators, leaving the CfD Counterparty little discretion to negotiable terms. The government has specifically stated that no changes will be permitted which affect the commercial substance of the agreement or the allocation of risk.[52]

47 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263937/Final_Document_-Investing_in renewable_technologies_-_CfD_contract_terms_and_strike_prices_UPDATED_6_DEC.pdf*

48 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/268221/181213_2013_EMR_Delivery_Plan_FINAL.pdf*

49 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209361/Levy_Control_Framework_and_Draft_CfD_Strike_Prices.pdf*

50 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263937/Final_Document_-_Investing_in_renewable_technologies_-_CfD_contract_terms_and_strike_prices_UPDATED_6_DEC.pdf*

51 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/267649/Generic_CfD_-_Terms_and_Conditions__518596495_171_.pdf*

52 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263169/FID_Update_3_Contract_Award_Process.pdf*

Offtaker of Last Resort

Investment from independent generators will play a key role in meeting the government's decarbonisation and security of supply goals. Independent generation developers typically rely on long-term off take contracts (Power Purchase Agreements (PPAs)) in order to secure the finance they need to participate in the market. The government considers that independent renewable generators may initially have difficulty developing projects under CfD's because of the uncertainty associated with the transition to the CfD and because of concerns that there may not be sufficient levels of competition in the long-term PPA market under CfDs.[53] The government took powers in the Energy Act 2013 to establish an Offtaker of Last Resort (OLR) mechanism to further support independent renewable generators. The DECC published its consultation paper for the OLR mechanism in February 2014.[54] Under proposed OLR mechanism all renewable CfD generators would be allowed to access the OLR irrespective of their size or technology type. The government intends to require some suppliers to bid for backstop PPA's in order to ensure the mechanism is deemed bankable and promotes sufficient competition. Backstop PPA's will be allocated to offtakers on a competitive basis, with Ofgem using a sealed-bid process to allocate generators to offtakers. The DECC's preferred approach is to have one set of terms and conditions that would apply to all Backstop PPA contracts, with the contract designed to be bankable, simple and balanced in terms of risk sharing. The DECC invited responses to the consultation document by 24 March 2014, and is currently in the process of considering these responses.[55]

2. What is the definition and coverage of renewable energy under the relevant legislation?

Generally, a renewable (or low-carbon) source of energy is defined in the Energy Act 2004 as: biomass; biofuels; fuel cells; photovoltaics; water (including waves and tides); wind; solar power; geothermal sources; combined heat and power systems; another sources of energy and technologies for the generation of electricity or the production of heat, the use of which would, in the opinion of the Secretary of State, cut emissions of greenhouse gases in Great Britain[56].

Under the Utilities Act 2000, "renewable sources" means sources of energy (other than fossil fuel or nuclear fuel), but includes waste of which not more than a specified proportion is waste which is, or is derived from, fossil fuel (i.e., "coal, substances produced directly or indirectly from coal, lignite, natural gas, crude liquid petroleum, or petroleum products").[57]

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

As a result of the complexity of issues surrounding the need for and implementation of policies supporting clean technologies, reduction of greenhouse gas emissions, energy security and fuel poverty, the regulation of renewable energy sources is equally complex in

53 *http://uk.practicallaw.com/5-557-3406?q=offtaker+of+last+resort*

54 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/278893/OLR_Consultation__11_Feb.pdf*

55 DECC Consultation Paper: *Supporting Independent Renewable Investment: Offtaker of Last Resort*, available at: *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/278893/OLR_Consultation__11_Feb.pdf*

56 Section 82(7), Energy Act 2004 Part 2, Ch. 1.

57 Utilities Act 2000, Ch. 27, Part V (amending the Electricity Act 1989).

the UK. The legislation governing various aspects of renewable power, such as taxation, planning, environmental protection and funding clean technologies, is administered by various governmental departments for which new mandates have been created, and most regulatory infrastructure for renewable power is managed separately by the administrations in England & Wales, Scotland and Northern Ireland.

The UK renewable energy sector is regulated generally by the Department of Energy & Climate Change (DECC), established in October 2008, to bring together energy and climate change policy in the UK. DECC's strategic objectives are to:

- save energy with the 'Green Deal' and support vulnerable consumers, specifically by reducing household, business and public sector energy use, and helping to protect the fuel poor;
- secure a low carbon energy future, specifically by reforming the energy market to ensure it is diverse, safe, secure and affordable and incentivising low carbon investment and deployment;
- push forward action on climate change in the UK and abroad, specifically by working for international action to tackle climate change, and working with other government departments to ensure that UK carbon budgets are met; and
- manage energy responsibly and cost-effectively, specifically by ensuring public safety and value for money in the way it manages nuclear, coal and other energy liabilities[58].

The principle UK laws and regulations relevant to the renewable energy sector are:

- the Climate Change Act 2008, which sets an 80% target for the year 2050[59] for the reduction of certain greenhouse gas emissions by supporting a system of carbon budgeting (in the form of five-year commitments to reduce carbon emissions and the means to achieve the targets).

  It also confers powers to establish trading schemes or activities for limiting or reducing GHG emissions, and addresses adaptation to climate change impacts. These all rely greatly on the contribution of renewable power[60];

- the Energy Act 2011[61] has three principle objectives: tackling barriers to investment in energy efficiency, enhancing energy security and enabling investment in low carbon energy supplies. It encourages the use of new technologies (such as carbon capture and storage and emerging renewable technologies) in order to increase the ways in which the UK generates electricity. In addition, it regulates electricity generated from renewable sources, electricity transmission, payments to small-scale generators of low-carbon electricity, and payments in respect of the renewable generation of heat;

- the Energy Act 2013, which succeeds the Energy Act 2010 introduces decarbonisation

58 *See www.decc.gov.uk/en/content/cms/about/our_goals/our_goals.aspx.*

59 Brought into force by the Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order 2009 No. 1258.

60 Related legislation includes: CRC Energy Efficiency Scheme (Amendment) Order 2011 (SI 2011/234); Carbon Accounting (Amendment) Regulations 2009 (SI 2009/3146); Carbon Budgets Order 2009 (SI 2009/1259); Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order 2009 (SI 2009/1258).

61 Brought into force by the Energy Act 2011 (Commencement No. 2 and Saving) Order 2013.

targets[62] and places the Secretary of State under a duty to ensure that the carbon intensity of electricity generation is no greater than the maximum permitted level of the decarbonisation target range; the Planning Act 2008[63], which makes provisions for infrastructure in Renewable Energy Zones (being areas outside the UK's territorial sea to be exploited for energy production)[64];

- the Planning and Energy Act 2008[65], which allows local planning authorities to include policies imposing reasonable requirements for a proportion of energy used in regional development to be energy from renewable sources in the locality of the development;

- the Utilities Act 2000[66], which requires a certain level of renewable source energy production and, amongst other things, empowers the Secretary of State to order electricity suppliers to produce evidence that customers have been provided with a certain amount of electricity generated through renewable sources[67]; and

- the Carbon Plan, published in December 2011, which sets out plans for achieving the emissions reductions up to 2027 pledged in previous carbon budgets, including the intention to reduce UK emissions by 80% from 1990 levels in 2050.[68] The first four carbon budgets have been set into law for the period 2008-2027. According to the latest projections, the UK is on track to meet the first 3 legislated carbon budgets, but there is an estimated shortfall of 181Mt$C0_2$ over the fourth[69].

4. What are the principal regulatory bodies in the renewable energy sector?

The principal regulatory body in respect of renewable power is Ofgem, an independent body which regulates the pricing, transmission and production of energy in the UK. Ofgem administers the Renewables Obligation and its role includes[70]:

- accrediting renewable source electricity generating stations;

- issuing and revoking ROCs as discussed further below;

- maintaining the ROCs register;

- monitoring compliance with the requirements of Renewables Obligation Orders;

- calculating the buy-out price;

- receiving buy-out and late payments and redistributing the funds; and

- reporting annually on the state of compliance with Renewables Obligation Orders and their operation.

In 2009, Ofgem established a new business unit, Ofgem E-Serve, which runs Government schemes such as:

62 Section 1(1) Energy Act 2013

63 Brought into force by the Planning Act 2008 (Commencement No. 1) (England) Order 2009 No. 1303 (C. 70).

64 As defined in section 84(4), Energy Act 2004, Part 2, Ch. 2.

65 See *www.opsi.gov.uk*.

66 Brought into force by the Utilities Act 2000 (Commencement No. 1 and Saving) Order 2000 No. 2412 (C. 67).

67 Related legislation includes the Electricity and Gas (Carbon Emissions Reduction) (Amendment) Order 2010 (SI 2010/1958).

68 *http://www.decc.gov.uk/en/content/cms/emissions/carbon_budgets/carbon_budgets.aspx*.

69 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47617/3749-carbon-plan-annex-b-dec-2011.pdf*

70 Ofgem also administers the NIRO.

- the Renewables Obligation Smart Meters[71];
- Offshore Electricity Transmission for renewable and non-renewable sources[72];
- the administration of Government environmental programs (e.g., the Renewables Obligation, Climate Change Levy exemptions and the Carbon Emission Reduction Target[73], which obliges energy suppliers to provide grants and offers to enable individuals to pay for energy efficiency measures and renewable energy technologies in their homes; and
- the RHI (discussed further below)[74].

Ofgem has been recently restructured to give greater focus on sustainability and the need to ensure that the UK's high-voltage networks can meet the challenge of connecting more renewable generation. Ofgem is currently consulting on amendments to its administration of the RHI, including the introduction of biogas production plants as eligible equipment to generate heat and amending its approach to metering heat loss between buildings.[75]

In January 2014, Ofgem brought into effect new rules designed to simplify the domestic energy market. The reforms include a ban on energy suppliers operating what Ofgem describes as "complex multi-tier tariffs" (where consumers are initially charged a higher rate, which only falls if their consumption increases above certain levels). Suppliers cannot offer more than four tariffs per fuel type, of which one must be a standard variable rate tariff. By 30 June 2014 suppliers must transfer all customers on existing tariffs onto their cheapest variable rate, unless they choose otherwise.[76] These changes are intended to make it easier for customers to assess how competitive different tariffs are and to provide them with clear information on their energy usage and efficiency. However, there have been criticisms that by restricting the number of tariffs to just four, it could be harder for energy companies to offer a range of green energy.[77]

Another regulatory body is the Office for Renewable Energy Deployment ("ORED"), launched by the Government in 2009 to ensure that the UK meets its targets for renewable energy. It is run under DECC, and its work includes:

- ensuring that renewable technologies can efficiently be deployed by supporting and giving importance to a strong planning system, supply chains and connection to the grid;
- providing the opportunity for local communities to have communal renewable energy schemes to share and benefit from;
- enabling the acceleration of technologies which will be important contributors in the future, such as marine energy, in which the UK has a strong presence as the innovator of the world's first full-scale devices to harness the power of waves and tides; and
- aiding a current project to encourage manufacturers of wind turbines to use the UK's potential and another project to develop an offshore electricity grid.[78]

71 See *www.ofgem.gov.uk/e-serve.*

72 See *www.ofgem.gov.uk/Networks.*

73 See *www.ofgem.gov.uk/Sustainability.*

74 See *www.ofgem.gov.uk.*

75 See *http://www.ofgem.gov.uk/e-serve/RHI/Documents1/Consultation%20on%20amendments%20to%20Ofgems%20administration%20of%20the%20Renewable%20Heat%20Incentive%20scheme.pdf.*

76 *https://www.ofgem.gov.uk/information-consumers/domestic-consumers/understanding-energy-bills*

77 *See for example: http://www.businessgreen.com/bg/analysis/2320773/good-energy-warns-over-ofgem-restrictions-to-smarter-tariffs*

78 See *www.decc.gov.uk/en/content/cms/meeting_energy/renewable_ ener/ored/ored.aspx.*

In February 2013, ORED commissioned Climate UK to organize a program of local authority stakeholder engagement workshops in four UK locations to discuss the costs, benefits and impacts of renewable energy in relation to the specific needs of local areas.

5. What are the main permits/licenses required for renewable energy projects?

When an application is made for development consent for a nationally significant energy infrastructure process, the following process applies:

- The Planning Inspectorate receives and considers the application under the Planning Act 2008 (as amended by the Localism Act 2011);
- The Planning Inspectorate makes recommendations to ministers at the DECC; and
- The DECC makes the final determination.[79]

Renewable energy projects which have an output of over 50MW for onshore projects and 100MW for offshore projects must follow this development consent process. Projects under 50MW will be determined by the relevant local planning authority under procedures set out in the Town and Country Planning Act 1990.

The DECC is responsible for setting the framework for the regulation and licensing of electricity plants. Ofgem considers these licences and decides whether or not to grant a licence. Under the Electricity Act 1989[80], it is an offence to generate, distribute or supply electricity unless authorised to do by a licence, or otherwise exempted. Wind farms, combined heat and power systems and other forms of renewable technologies for the generation of electricity are not exempt from these licensing obligations, since the generating technology used is not directly part of the criteria used to assess a licensing application.[81] Required electricity licenses include a transmission, distribution, interconnector and generation licence.

The Marine Management Organisation (MMO) is responsible for considering and determining licensing applications for offshore windfarms, wave and tidal devices which have a capacity between 1 and 100 megawatts. The MMO carries out licensing and enforcement functions under the Marine and Costal Access Act on behalf of the Secretary of State. A licence under the Food and Environmental Protection Act (Part II) 1985 is also required from the Marine and Fisheries Agency for depositing materials in the sea. This encompasses the placement of construction material, or disposal of waste.[82] In deciding whether to grant a licence the MMO will pay particular regard to the environmental implications and other effects of the work, including the potential hydrological effects, interference with other marine activities, potential risk to fish and other marine life and any adverse implications for designated marine conservation areas.[83] In addition to a marine licence, offshore applications may also require consent under the Electricity Act 1989.

79 *https://www.gov.uk/government/policies/providing-regulation-and-licensing-of-energy-industries-and-infrastructure/supporting-pages/planning-and-consents-for-national-energy-infrastructure*

80 Section 4(1)

81 *https://www.gov.uk/government/policies/providing-regulation-and-licensing-of-energy-industries-and-infrastructure*

82 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/43573/Section_36_guidance.pdf*

83 *http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/files/file22990.pdf*. See also Part 4 of the Marine and Costal Access Act 2009

Application fees for these consents range from £5,000 for a generating station with less than 200 megawatts capacity up to £20,000 for a generating station with more than 500 megawatts capacity.[84]

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

One major tax advantage for renewable energy generation companies comes in the form of an exemption from the requirement to pay the Climate Change Levy.[85] Electricity that is generated from renewable sources is exempt from this tax, provided that the renewable energy source qualifies under the conditions stipulated in the legislation to obtain a Levy Exemption Certificate (LEC).[86]

On 1 April 2010, the Government introduced the concept of 'FITs for micro-generation. These are payments to producers of renewable electricity up to 5 MW, whether used by the generator for its own purposes or exported to the national transmission system (National Grid). The tariffs are designed to incentivize the generation of renewable electricity on a small scale[87]. The FITs scheme supports renewable energy projects which involve new anaerobic digestion, hydro, solar photovoltaic and wind energy. A pilot program is also being set up, whereby the first 30,000 micro combined heat and power installations with an electrical capacity of 2kW or less are supported by FITs. More than 21,000 installations, mostly domestic, have been registered to date[88].

On 7 February 2011, the UK Government undertook a review of the FITs scheme to determine how it could be improved in order to meet the target of 10% of savings in 2014/15, as committed in the 2010 Spending Review. This addressed issues such as tariff levels, eligible technologies and administrative and regulatory arrangements.

The review was separated into three phases, and included consideration of (i) linking small-scale solar photovoltaic (PV) tariffs to minimum energy efficiency requirements and introducing new multi-installation tariff rates for aggregated solar PV schemes; (ii) solar PV cost control mechanisms; and (iii) wind, anaerobic digestion and micro-combined heat and power and scheme administration issues.

On 24 May 2012, the Government responded to the consultation on solar PV cost control mechanisms, which included setting out solar PV tariffs for new installations from 1 August 2012. It also set tariffs on a quarterly basis based on deployment during the year (through modifications to the Standard Conditions of Electricity Supply Licences).

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84 Application fees for these consents are set out in the Electricity (Offshore Generating stations) (Applications for Consent) Regulations 2006

85 The aim of the CCL is to provide an incentive to increase energy efficiency and to reduce carbon emissions. The Climate Change Levy (General) Regulations 2001 (Statutory Instrument 2001 No. 838), subsequently amended by (most recently), The Climate Change Levy (General) (Amendment) Regulations 2010 No. 643. See also *www.customs.hmrc.gov.uk*.

86 Part V, Sections 48 and 49 of the CCL.

87 Section 41, Energy Act 2008 gives the Secretary of State authority to introduce FITs. The Statutory Instrument to put the FITs into practice is the Feed-in Tariffs (Specified Maximum Capacity and Functions) Order 2010 (S.I. 2010/678) as amended by the Feed-in Tariffs (Specified Maximum Capacity and Functions) (Amendment) Order 2011 (S.I 2011/1181).

88 See *https://www.gov.uk/government/news/huhne-takes-action-on-solar-farm-threat*

The government also addressed a broad range of other issues, including tariffs for anaerobic digestion, hydro, micro CHP and wind, the treatment of community-owned installations and a preliminary accreditation mechanism[89], through changes that came into force on 1 December 2012[90].

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

There is currently no legislation providing for the guaranteed purchase of electricity created by renewable energy companies.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

The FITs with CfDs mentioned above are long term contracts allocated by the National Grid to developers of low carbon generation and which will guarantee a set price for the electricity produced over an extended period of time.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

The UK ratified the Kyoto Protocol on 31 May 2002 and it entered into force on 16 February 2005.[91]

The Kyoto Protocol introduced the concept of carbon emissions trading whereby countries listed under Annex 1 of the protocol (developed countries) could use the carbon credits to meet their emission reduction commitments. This scheme was designed to assist with the transfer of resources and sustainable technologies to developing countries. Two types of carbon credits have been created; the Joint Implementation and the Clean Development Mechanism[92]. Under the Joint Implementation,[93] emitters in countries listed in Annex 1 are allowed to purchase carbon credits via greenhouse gas-reduction projects which have been implemented either in another developed country, or in a country with an economy in transition. Under the Clean Development Mechanism, developed countries can accrue carbon credits by financing carbon reduction projects in developing countries. The second commitment period of the Kyoto Protocol runs from January 2013 to December 2020. A Working Group on the Durban Platform for Enhanced Action has been established to develop a new protocol with legal force under the UN Convention on Climate Change by 2015. This new protocol will be implemented by 2020, when the second commitment period ends.

10. Do renewable energy based power plants have priority for connection to the grid?

The National Grid is the UK's electricity transmission system. The Connection and Use of System Code (CUSC) is the contractual framework for connection to and use of National Grid's system. Under this Code, there is not, at this time, any priority of connection for power generators using renewable energy sources.

DECC released in 2009 its policy 'Smarter Grids: The Opportunity', which recognizes the need for an intelligent grid suited to managing the fluctuating input of energy from renewable sources. As part of this policy, the UK Government is planning to roll out Smart Meters (as mentioned in question 4 above) to

89 See *http://www.fitariffs.co.uk/library/regulation/ 1207_Phase2B_response.pdf*

90 See *https://www.gov.uk/government/consultations/ tariffs-for-non-pv-technologies-comprehensive-review-phase-2b*

91 *https://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php*

92 Defined in Article 12 of the Protocol

93 Defined in Article 6 of the Protocol

26 million homes and small businesses by 2019 and has the ambitious goal of installing smart meters in every home by 2050. In addition, Ofgem is providing £500m over five years from April 2010 to 2015 to support smart grid trials, and DECC is providing £2.8m for smaller smart grid demonstration projects.[94]

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

According to the UK Low Carbon Transition Plan, the Government will help make the UK a "centre of green industry" by supporting the development and use of clean technologies. It promises to provide a supportive climate for investment in low carbon infrastructure, and is itself investing in research and development of new low carbon technologies.

The 2009 Budget designated £405 million to support low-carbon industries and advance green manufacturing to boost technologies where the UK has the greatest potential, including investments of up to £120 million in offshore wind and £60 million in marine energy strategies.[95] In the 2010 UK Budget, DECC announced its intention to provide up to £60 million of government funding to manufacturers of offshore wind turbines looking to locate new facilities in the UK in order to support infrastructure such as the development of ports.[96] The 2011 budget introduced a carbon price floor for electricity generation from 1 April 2013 to spur investment in the low-carbon power sector. This has been predicted to start at around £16 per tonne of carbon dioxide in 2013 and follow a linear path to £30 per tonne in 2020. The budget also extended Climate Change Agreements (CCAs) to 2023 and increased the levy discount on electricity for CCA participants from 65 to 80 per cent from April 2013 to continue to support energy intensive businesses exposed to international competition. In addition, the Government highlighted it remains committed to providing funding for four CCS demonstration plants. In the 2012 UK budget, the Government announced its intention to consult on simplifying the Carbon Reduction Credit (CRC) energy efficiency scheme to reduce administrative burdens on business and highlighted that should the simplifications not alleviate administrative burdens, it would replace CRC revenues with an alternative environmental tax. In the 2014 Budget, the government announced it will provide £60 million investment for new low carbon innovation to support CSS technologies that show significant potential to reduce the cost of low carbon generation in the UK.[97]

The Government introduced the Enhanced Capital Allowances (ECA) scheme in 2001 to encourage businesses to invest in low carbon, energy-saving equipment[98]. The scheme provides a tax incentive to businesses that invest in equipment that meets published energy-saving criteria. The ECA scheme allows the full cost of an investment in designated energy-saving plant and machinery to be written off against the taxable profits of the period in which the investment is made.

12. What are the other incentives available to renewable energy generation companies?

The RO was introduced in 2002 under the Electricity Act 1989 to require all licensed electricity suppliers in England and Wales to supply a specified proportion of their electricity sales from renewable sources.[99] Following the

94 See *www.decc.gov.uk/en/content/cms/meeting_energy/ network/ strategy/strategy.aspx*.

96 *www.hmtreasury.gov.uk*

97 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/293759/37630_Budget_2014_Web_Accessible.pdf*

98 See *www./eca.gov.uk/*.

99 For ease of reference the dates for England and Wales are used. The Renewables Obligation Orders for England & Wales and Scotland were introduced

implementation of the Energy Act 2013, FITs with CfDs will replace the existing subsidies and incentives such as the RO, with the RO expected to finally phase out in 2037. Applications for RO can be made up to 31 March 2017.

The Renewables Obligation Order 2002 ("ROO 2002") was designed to incentivize the deployment of large-scale renewable electricity generation. Under the ROO 2002, UK electricity suppliers were under an obligation to source an increasing proportion of their electricity from renewable sources and a renewables obligation certificate ("ROC") is issued for each MWh.[100] Since the introduction of the Order in 2002, growth in renewable electricity generation more than doubled in the UK, attributed to the financial benefit of trading ROCs.[101]

The Renewables Obligation (Amendment) Order 2013 specifies the amount of support that individual technologies will receive under the RO for the period 2013-2017. The RO banding changes are estimated to deliver 11TWh more generation annually from 2016/2017 compared to the previous bands and are estimated to cost the average household £6 less in 2013/2014 than previously estimated.

The new FIT regime introduces a long term contract set at a fixed price level, under which variable payments are made to top-up the level of payment to the generator to the agreed tariff. The FIT payment will be made in addition to the generator's revenues from selling electricity in the market.[102]

On 1 April 2013 Ofgem revised its guidance on the RO for licensed suppliers of electricity. A bioliquid cap was introduced from 1 April 2013, meaning that suppliers are limited to supplying 4% of their obligation using ROCs that were issued in respect of electricity generated from the combustion of bioliquids. In addition, the cap on co-firing ROCs which an electricity supplier can utilise as a percentage of their obligation was removed[103].

To increase the proportion of heat produced from renewable sources, the UK Government launched the RHI in November 2011, which gives payments to entities that self-generate renewable heat and is the world's first long-term financial support program for renewable heat[104].

in April 2002. In Northern Ireland, it was introduced in April 2005. For further information see *www.decc.gov.uk.*

100 The Renewables Obligation Order 2009 requires the Secretary of State to publish the number of ROCs that each electricity supplier is required to produce for each MWh of electricity supplied by it to customers in England and Wales (during the relevant compliance period) in order to discharge its RO for that period. For further information, see *www.decc.gov.uk/en/content/cms/what_we_do/ uk_supply /energy_mix/renewable.*

101 It has succeeded in bringing forward more economic technologies such as co-firing, landfill gas, onshore wind and sewage gas. See the UK Low Carbon Industrial Strategy at *"www.decc.gov.uk"*.

102 *http://www.decc.gov.uk/assets/decc/11/policy-legislation/EMR/2210-emr-white-paper-full-version.pdf*

103 *https://www.ofgem.gov.uk/ofgem-publications/58129/ro-supplier-guidance.pdf*

104 Section 100, Energy Act 2008 gives the Secretary of State authority to introduce the RHI. The Statutory Instrument to put them into practice is currently being finalized.

The Renewable Heat Premium Payment (RHPP) voucher scheme in the UK closed on 31 March 2014. Under this scheme, homes not heated by mains gas were eligible to apply for grants for air-to-water-source heat pumps, biomass boilers and solar thermal.[105] The scheme was replaced by the domestic Renewable Heat Incentive scheme which launched on 9 April 2013 and aims to help businesses, the public sector and non-profit organisations meet the cost of installing renewable heat technologies. The types of heating covered by the scheme are biomass, heat pumps, geothermal heating, solar thermal collectors and biomethane.[106]

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

The official figures for total electricity generation from renewables in the UK during 2014 are yet to be released. However, up to the fourth quarter of 2013, renewables' share of electricity generation was a record 17.6% in 2013, an increase of 5.0% compared to 2012.[107]The main contributors to this substantial increase were:[108]

- onshore wind (increased by 63%);
- offshore wind (increased by 42%);
- anaerobic digestion (increased by 243%).

In the fourth quarter of 2013, bioenergy was the largest generator of renewable energy, accounting for 28% of renewable energy generated, of which 36% was from onshore wind, 23% from offshore wind and 11% from hydro generation

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105 As of 18 February 2013, 5,758 vouchers had been issued under the scheme with a total value of £4,051,250. Of these, according to the Energy Saving Trust[105], 39% were for solar thermal, 35% for air source heat pumps, 14% for ground or water source heat pump and the remaining 12% for biomass boilers. 3,488 vouchers of the total number issued had been redeemed.

106 *https://www.gov.uk/renewableheatincentive*

107 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/295356/6_Renewables.pdf*

108 *https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/295356/6_Renewables.pdf*

United States of America

Daniel Hagan
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GENERAL

1. What is the nature and importance of renewable energy in your country?

The US is rich in many sources of renewable energy, including: wind; solar; geothermal; various types of hydropower such as conventional, pumped storage, tidal and kinetic; biomass; and many developing forms, such as biofuels. In 2013, approximately 13% of the electricity generated by utilities in the US came from renewable resources, primarily hydropower and wind.

The US has multiple programs to promote the use of renewable power, but many are established by state governments or other governmental subdivisions of the states and therefore are geographically limited in their application. There are, however, some financial incentives available nationally through federal programs and one federal mandatory purchase program, as described below. Note that the information below is current only as of April 2014.

2. What is the definition and coverage of renewable energy under the relevant legislation?

The US Congress (the national legislative body) has at different times considered implementing a federal renewable energy standard ("RES") for electric power, but thus far has not done so. However, approximately 30 states, have implemented some type of an RES or renewable portfolio standard ("RPS"), also sometimes known as a certificate or quota program. Many states have also implemented other types of incentive programs. The types of resources that qualify for the state-run programs vary by state. Wind, solar and geothermal are generally included, but mature technologies, such as conventional hydroelectric, are generally excluded (although incremental output resulting from efficiency gains may qualify for some programs). The definition of "renewable" reflects the state's policy priorities and, often, the types of resources available to the state, given its geography.

REGULATION

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

As a preliminary matter, it is important to understand that the generation and transmission facilities in the US are owned and operated by a wide variety of entities. The majority of electric consumers are served by private-sector companies (including those with publicly traded shares), but assets are also owned and operated by a variety of federal, state and local governments and by companies that are organized as cooperatives (member-owned companies whose shareholders are also their customers). There is no national grid company. The applicable laws and regulations differ depending on the nature of the entity that owns or operates the generation and transmission facilities.

Federal Power Act

The Federal Power Act ("FPA") grants the Federal Energy Regulatory Commission ("FERC") authority over the sale of power at wholesale and the transmission of electric power in interstate commerce by public utilities. But, FERC does not establish rates on its own initiative. Each public utility (as defined below) must file with FERC the rates at which it proposes to sell power in advance of making sales, and FERC has the authority to review the rates proposed and determine whether they are just and reasonable.

Although the FPA is the predominant law that shapes the wholesale power industry in the US, FERC does not regulate all sellers of power. FERC's FPA jurisdiction is limited to states or parts of states that are interconnected to other states (even if the transaction is wholly within a single state, so long as the region is interconnected). Thus, FERC's FPA jurisdiction does not extend to the States of Hawaii or Alaska, nor to parts of the State of Texas within the Electric Reliability Council of Texas ("ERCOT"), each of which does not (or is deemed to not) connect to other states. In these areas, all power transactions are instead regulated under state laws. Further, under the FPA, a "public utility" is defined to exclude federal and state governments or other political subdivisions as well as certain sellers of power that are organized as cooperatives and sell less than four million megawatt hours of electricity per year or are subject to oversight by the US Rural Utilities Service as a result of government loans that have been extended to them. These types of organizations are either self-governing, or in the case of some cooperatives, subject to regulation under state law.

However, even taking into account those exclusions, FERC's jurisdiction over public utilities reaches the organizations that deliver power to the vast majority of end-users in the US. It regulates, among others, large vertically integrated, private-sector utilities; small companies and partnerships that own only one or a few generators; and six of the seven organized wholesale power markets (the seventh of which is in ERCOT and therefore outside of FERC's jurisdiction). Even some exempt sellers come within FERC's purview when they transact in markets that are regulated by FERC. Transmission that is owned or operated by public utilities (as defined above) is also subject to economic regulation pursuant to the FPA. The FPA applies without regard to the fuel source by which the power was produced.

Other than those public utilities that are subject to PURPA (defined and described below), a public utility that wishes to sell power – regardless of whether it sells renewable power – must file the tariff pursuant to which it will make such sales with FERC at least 60 days prior to its first sale. Many, if not most, wholesale sales of power in the US are made pursuant to "market-based rates" which are negotiated bilaterally or determined through an organized market. If a seller wishes to sell at market-based rates, the terms on which it may do so must be set forth in the tariff that it files with FERC. FERC will authorize market-based sales by a seller only after evaluating market studies submitted by the seller to assure the seller cannot exercise market power. Once authorization is granted, and a market-based tariff is on file, sales may be made pursuant to the tariff without prior FERC approval. However, the seller will be required to report its transactions and must periodically demonstrate to FERC its continued inability to exercise market power.

Under the FPA, public utilities and certain other sellers that are not public utilities but who participate in US markets are also subject to market behaviour rules intended to protect consumers and the integrity of the market; and

to reliability standards intended to assure the stability of the bulk electric power system. Owners and operators of renewable facilities are subject to these aspects of the FPA as well.

Transmission owners that are public utilities are required to offer "open access" transmission service, meaning that any person willing and able to meet the terms of their tariffs may receive service. Transmission capacity is awarded on a first-come, first-serve basis, but transmission owners are also responsible for expanding their systems to accommodate new users and are compensated for doing so. As noted above, there are some owners and operators of transmission that are not public utilities. FERC has no jurisdiction to order such transmission owners to provide open access; however, it has authorized public utilities to deny service to any person that is a transmission owner and does not provide reciprocal service. As a result, open access transmission is widely available throughout the continental US to renewable power projects as well as others. Some renewable power project owners also own substantial transmission facilities, since renewable resources may be located in areas that are remote from the interconnected grid. In such cases, the renewable power project owner may also be subject to regulation as a transmission owner and/or provider under the FPA in some respects.

Public Utility Regulatory Policies Act

Some small renewable power generators are designated as "qualifying small power production facilities" or "QFs" under a federal law, the Public Utility Regulatory Policies Act ("PURPA").[1] These QFs are entitled (but not obligated) to sell their power to the utility to which they interconnect at an "avoided cost" rate – that is, a rate that reflects the cost the utility avoids by taking the power from the QF rather than an alternative source. Avoided cost rates are set by the state, and utilities often offer the avoided cost rate for small QFs by tariff. While in some cases the rates a QF can negotiate for a bilateral market-based sale may be better than the avoided cost rate available under PURPA, the program remains popular because QFs, whether or not they sell power at the avoided cost rate, also benefit from certain other regulatory exemptions by maintaining QF status.

PURPA applies in all fifty states, the District of Columbia and Puerto Rico. To be eligible for this program, (1) at least 75% of energy input for the QF must come from renewable resources, geothermal resources, biomass (any organic material not derived from fossil fuels), waste (which is broadly defined as an input having little or no commercial value and which may include, among other things, used rubber tires, refinery off-gas, synthetic gas from coal, and various types of low-BTU coal waste as set forth in the regulations), or some combination of the foregoing; and (2) the use of oil, coal or natural gas (which may not exceed 25% of the total energy input) is limited to the minimum needed for ignition, start up, testing, flame stabilization, control uses and certain emergency needs. With limited exceptions, QFs cannot be more than 80 megawatts in size. Certain of the benefits of PURPA are restricted to a subset of smaller QFs.

PURPA was enacted in 1978. Its availability was narrowed by the Energy Policy Act of 2005, which established conditions pursuant to which utilities are excused from purchasing QF power at an avoided cost rate if the relevant market provides QFs with competitive options for the sale of their power. Notwithstanding these new limitations, the program has been in continuous use for over

[1] There are two types of qualifying facilities under PURPA: qualifying small power production facilities and qualifying cogeneration facilities. The discussion below addresses only the former, and as used herein, "QF" refers only to a qualifying small power production facility.

three and a half decades and remains important for some generators. In particular, sellers making sales from facilities that qualify as QFs under PURPA and are less than 20 megawatts are exempt from the obligation to have a tariff on file with FERC pursuant to the FPA, even if they choose to sell at market-based rates rather than an avoided cost rate. Further, all QFs that are 30 megawatts or less (plus geothermal and biomass QFs that are over 30 megawatts but less than 80 megawatts and certain other QFs, the construction of which began before 2000) are exempt from state laws respecting the rates and financial and organizational regulation of electric utilities. PURPA will remain in effect unless and until repealed by the US Congress; it has no expiration date.

State Programs

Some states have instituted incentive programs specifically for renewable power. The form of the state programs varies, and many states have several different programs in place. The number of such state programs makes summarization here impossible.

As noted above, approximately 30 states have implemented an RES or RPS program. These programs require the utilities serving load in the state to assure some portion of the energy delivered is generated by a renewable resource. Under such programs, a renewable energy certificate, or "REC," is issued for each megawatt hour of renewable energy generated, which the plant owner can then sell either with the associated energy or, separately from the energy, as a tradable-REC or "TREC."

Utilities may build, own and operate renewable generation or purchase the output of renewable projects from third-parties to meet the RES requirements. Generally speaking, but subject to the specific state's rules, utilities demonstrate achievement of their quota by acquiring the RECs associated with the renewable power they generate or purchase for resale, and if the utility has not generated or purchased sufficient renewable energy to meet its RES obligation, it must purchase TRECs equal to the shortfall (or make an alternative payment).

Investor-owned utilities in the State of California have one of the more stringent requirements, which is to acquire 33% of their electric power from renewables by 2020. Only a limited portion of that can be generated by out-of-state resources. Thus, California, which is a very large state and has multiple renewable resources available, including good sources of wind, solar, hydro and geothermal energy, has seen a significant growth in renewable power generation of all types. In some states, however, the standard is more of a policy objective, with no direct, adverse consequences to the state's utilities if it is not achieved. For example, while the State of Utah established a renewable energy target of 20% of retail sales by 2025, utilities are obligated to procure renewable resources only to the extent they are cost-effective.

4. What are the principal regulatory bodies in the renewable energy sector?

Rates. As noted above, FERC is the economic regulator of the wholesale sale of power by public utilities, which covers many renewable power generators. In the States of Hawaii and Alaska, and in ERCOT, jurisdiction lies with the state public utility regulator (which goes by various names, depending on the state, but for simplicity, each state utility regulator will be referred to as a "public utility commission" or "PUC" for the remainder of this article). The rates at which a utility must purchase a QF's power pursuant to the mandatory purchase obligation under PURPA (in cases in which it is applicable) are regulated by the state PUC (pursuant to federal law). Sales of power at retail rates, including to on-site users of a generator's power, is also a matter of state law,

although some states have loosened their regulations to promote distributed generation, including roof-top solar.

Siting. Siting for generation and transmission located on land or within 5.6 km of the ocean coast (or within 16.2 km of the coast of the State of Texas or the western coast of the State of Florida) is generally a matter of state or local law. Some larger, utility-scale renewable power facilities are located on lands owned by the federal government (in particular, the federal government owns large tracts of land in the western part of the US), often administered by the Department of Interior's Bureau of Land Management or the US Forest Service. New off-shore wind and experimental tidal or wave projects may also be located on the outer continental shelf beyond 16.2 km from the coast of the State of Texas or the west coast of the State of Florida or 5.6 km from any other state coast. To locate in these areas, the developer must secure approval from the federal agency with jurisdiction over the land and obtain rights to the site by lease.

Facilities that are placed in navigable rivers and streams must secure a license from FERC pursuant to Part I of the FPA.

In addition, during siting, construction and operation, the facility will need to comply with environmental laws administered by either a state agency or the US Environmental Protection Agency and may also be required to comply with laws administered by the US Army Corps of Engineers (for wetlands); the Federal Aviation Administration (for towers); the US Coast Guard; or the US Fish and Wildlife Service, among others.

Other Regulations. States generally have regulations governing many aspects of a utility's existence and operations, including its organization (including mergers and ownership structures), finances and certain safety issues. Many states have implemented broad exemptions for companies that do not sell power at retail or small distributed generation, but the rules vary by state. In addition, as noted above, QFs are exempt from rate, organizational and financial regulation by states as a matter of federal law.

5. What are the main permits/licenses required for renewable energy projects?

As noted above, the process for siting and developing generation on land or within close proximity to shore varies, but typically authorization is required from a local zoning authority and/or state agency. In some cases, states have made particular accommodations for renewable power; for example, some states have enacted laws to facilitate the installation of roof-top solar systems.

Larger renewable power facilities located on lands owned by the federal government or on the outer continental shelf generally require approval from the federal agency with jurisdiction over the land and obtain rights to the site by lease. The US Department of Interior's Bureau of Land Management and Bureau of Ocean Energy Management, for example, require developers to obtain authorization to commence exploratory activities, such as collecting geological and geophysical data, followed by more extensive review of the environmental impact of a proposed project under the National Environmental Policy Act once a developer seeks to move forward with construction at a site.

Facilities that are placed in navigable rivers and streams must secure a license from FERC pursuant to Part I of the FPA.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

Yes.[2] Renewable energy projects may be eligible to receive either a production tax credit ("PTC") or an investment tax credit ("ITC"). The specific eligible projects are defined by statute.

The PTC is generally available to the owner of a qualified facility that sells electricity produced in the US to an unrelated person. Wind, geothermal facilities and biomass projects are among the types of projects that may qualify for the PTC. As the name suggests, the tax credit taken for any particular year is based on that year's production. The amount of the credit is 1.5 cents per kilowatt hour of electricity, adjusted for inflation, for certain technologies, such as wind, geothermal and closed-loop biomass. With the inflation adjustment, the rate for these facilities was 2.3 cents per kilowatt hour for 2013. For certain other technologies, including open-loop biomass and landfill gas, the credit is reduced by half, and thus the 2013 rate for these types of facilities was 1.1 cents per kilowatt hour.

The PTC is available for electricity produced from a qualified facility over a 10-year period that begins on the date the facility is originally placed in service, provided the construction of the facility commenced before 1 January 2014. In April 2013, the Internal Revenue Service provided guidance establishing two ways to meet the requirement that construction of a qualified facility commence before 1 January 2014. First, construction of a qualified facility is considered to have begun when "physical work of a significant nature" has started. Alternatively, construction of a qualified facility is considered to have begun when 5% of the total cost of the facility has been incurred by the taxpayer, and the taxpayer makes continuous efforts to complete the facility thereafter. The guidance also provides that in certain circumstances the evaluation can take place on a project-wide basis rather than separately for each individual item of equipment.

The ITC is available for investments in solar, geothermal and small wind energy facilities (that otherwise meet the applicable requirements) and certain other types of qualifying property. 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. A 30% ITC is available for solar energy property, qualified fuel cell property, and qualified small wind energy property placed in service before 1 January 2017. A 10% ITC is available for solar energy property placed in service after 31 December 2016 and for geothermal energy property regardless of when placed in service.

A 30% ITC is also available for investments in most types of qualified facilities that are eligible for the PTC, as described above. The owners of such qualified facilities, described below, may elect to claim a 30% ITC with respect to such property in lieu of the PTC. Qualified facilities that are eligible for the 30% ITC in lieu of the PTC ("qualified investment credit facilities") are wind facilities, closed-loop and open-loop biomass facilities, geothermal facilities, municipal solid waste facilities (landfill facilities and trash facilities), qualified hydropower facilities, and marine and hydrokinetic energy facilities the construction of which commences before 1 January 2014.

[2] The following is a general description of the tax provisions applicable to renewable power. It is provided for your convenience and does not constitute legal advice. It is prepared for the general information of our clients and other interested persons. This information should not be acted upon in any specific situation without appropriate legal advice.

The 30% ITC in lieu of the PTC is allowed with respect to investments in qualified investment credit facilities regardless of whether investments in such property otherwise would not be eligible for the ITC or would be eligible for only a 10% ITC. For example, investments in qualified small wind facilities, the construction of which commences before 1 January 2014, are eligible for the 30% ITC even if such facilities are not placed in service before 1 January 2017. Similarly, investments in qualified geothermal facilities, the construction of which commences before 1 January 2014, are eligible for the 30% ITC in lieu of the PTC even though investments in geothermal facilities normally are eligible for only a 10% ITC.

The US tax code depreciation rules include a Modified Accelerated Cost Recovery System ("MACRS"). Under MACRS, certain wind and solar projects have a favourable five-year statutory recovery period.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

Except for the avoided cost rate available to certain QFs under PURPA, there is no federally mandated purchase applicable to renewable power.

Feed-in tariffs for the purchase of power at wholesale, which have been widely used in Europe, are available from some utilities. But, an entity that wishes to sell its power under a feed-in tariff still has to comply with the federal laws applicable to it. However, since the FPA is not applicable in the States of Alaska or Hawaii or within ERCOT, entities seeking to sell power in those areas, under a feed-in tariff or otherwise, are only obligated to comply with the state's laws. Hawaiian Electric Company, for example, offers a feed-in tariff for small generators using specified technologies, including photovoltaic and on-shore wind (although availability varies based on size and location).

Utilities and large consumers of power often also conduct competitive solicitations for long-term supplies of renewable power. In some cases, the projects seeking to sell power compete only on price and commit to deliver on a fixed set of terms and conditions and, in other cases, have the ability to bid both the price and the terms and conditions. The projects that are selected through the solicitation enter into bilateral agreements with the purchaser that can become the basis for financing.

Many states have established net metering programs to encourage on-site generation, including roof-top solar installations for residential or commercial customers. In these arrangements, the renewable project is located on or near the property of the end-user and supplies the end-user with power. The project may be owned by the end-user or by a third party which sells the power, at retail, to the end-user. The end-user is also (generally) connected to the local utility and takes supplemental and back-up power from the utility when the project is unable to meet its entire load and delivers power to the utility during the hours in which the project's output exceeds its load. Under some programs, the utility provides a credit for the excess energy, subject to a periodic true-up payment, and in other cases, it purchases the excess energy. The end-user's benefit is primarily the difference between the retail price it would have paid to the utility and its cost for the on-site renewable energy.

The US also has vibrant short-term sales markets. There are seven organized regional markets in which power may be sold, day-ahead and/or real-time, through a central market at a market-set clearing price or through bilateral transactions (although there

are also large parts of the country which are not served by an organized market and where wholesale power sales are bilateral). Some of the organized regional markets also offer a market for capacity sales. Renewable generators may participate in these markets (subject to complying with applicable market rules) but practically speaking, renewable power projects do not rely on these short-term markets for the disposition of the majority of their energy and capacity. Short-term sales will not typically support financing for the project and a market-clearing price (the price paid for sales into the organized markets) will not reflect the premium that green power receives in bilateral deals.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

As explained above, the only federal minimum price guarantee is the avoided cost rate available to QFs under PURPA, and that rate is determined by the applicable state PUC. States cannot "guarantee" a wholesale price because they lack the ability to set rates, but practically speaking, a feed-in tariff (which functions as an offer to purchase) establishes a minimum offer price in the areas in which one is available, for those projects that qualify to sell their power pursuant to such a tariff.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

The US signed the Kyoto Protocol on 12 November 1998, but never ratified it. Although the US Congress has periodically considered various nation-wide carbon credit programs, none have been enacted to date. The current regulation of carbon credits is thus administered on state and regional biases, with significant variations among the different programs.

The development of national carbon emission limitations is among the priorities of the current executive administration. The US Environmental Protection Agency ("EPA") has proposed national limits on the amount of carbon pollution that new power plants will be allowed to emit in the future, which is currently under consideration. Meanwhile, the US President has ordered the EPA to provide a draft regulation setting a national standard for carbon pollution, which is due by 1 June, 2014.

10. Do renewable energy based power plants have priority for connection to the grid?

There is no federal priority. Like other generators seeking to connect to the interstate transmission grid, renewable power developers must apply for interconnection, and their request is handled in the same manner as other requests for interconnection, although some smaller facilities benefit from a streamlined process. However, many renewable generators connect at a distribution voltage, which may be regulated under state law, and the rules governing distribution voltage interconnections are varied.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

A number of states have programs to attract and support industries that are engaged in manufacturing the components of renewable power plants. Often, these are tax-based programs, but some states offer grants and other forms of support.

12. What are the other incentives available to renewable energy generation companies?

The US Department of Energy may provide loan guarantees pursuant to Section 1703 of the Energy Policy Act of 2005 for innovative technologies. It periodically opens solicitations for new applications, and one such solicitation is anticipated in 2014.

Section 1703 loan guarantees are available to projects that avoid, reduce or sequester air pollutants or anthropogenic emissions of greenhouse gases and employ new or significantly improved technologies as compared to commercial technologies in service in the US, including the following categories: biomass, hydrogen, solar, wind/hydropower, nuclear, advanced fossil energy coal, carbon sequestration practices/technologies, electricity delivery and energy reliability, alternative fuel vehicles, industrial energy efficiency projects, and pollution control equipment. The project must be located in the US, although foreign sponsors are eligible to apply.

A guarantee may not be issued for a loan whose principal exceeds 80% of the estimated project cost, and the maximum tenor of the underlying loan is 30 years.

STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

Data from the US Energy Information Administration (*Electric Power Monthly*, March 2014) for net electric generation from all sources shows that for 2013, approximately 13% of the electric generation in the US came from renewable resources, including hydroelectric (compared to 39% for coal, 27% for natural gas, 19% for nuclear, and 2% for petroleum and other resources). Of the 13% generated by renewable resources, the majority, 52%, was from hydropower and 28% from wind. The other resources are biomass wood, 8%; other biomass, 4%; geothermal, 3%; and solar, 1%.

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FERRERE

GENERAL

1. What is the nature and importance of renewable energy in your country?

Introduction

Since 2006, renewable energy has increasingly been acquiring importance in Uruguay. Ever since then, and mainly due to economic, environmental and technological reasons, the diversification of the energy matrix by means of the incorporation of non-traditional power generation has become a part of State policy, as defined by a cross-party commission.[1]

In planning the country's energy policy, a strong commitment has been made to the incorporation of autochthonous renewable sources, such as wind power, biomass and solar energy. According to the Executive Branch' projections, by 2015 the total demand for electric power is expected to be covered by (i) 65% of hydraulic energy; (ii) 25% of wind power; (iii) 6% of biomass; and (iv) 4% of thermal plants.

Whether or not the aforementioned commitments will be met is contingent upon the regulators' capacity for adapting existing regulations – and creating new ones – without hindering the development of the budding industry. In this regard, the implementation of renewable source power plants has required logistical cooperation between local public entities, as well as the grant of certain guarantees to secure the required financing for projects, and the renegotiation of existing power purchase agreements.

Uruguay's Energy Outline

The main sources of energy generation in the country derive from petroleum and hydraulic power.

Uruguay is equipped with four hydraulic power stations (with a total installed capacity of 1,538 MW) and four thermal power stations (with a total installed capacity of 875 MW). In addition, 161.1 MW of wind generation (20 from a state-owned wind farm and 141.1 MW from seven private farms) and 236 MW of biomass from private power producers have been installed by 2014 (187 MW of which is available for its sale in the electricity market).

Although hydraulic installed capacity is high, during dry seasons, the generation of hydraulic power substantially diminishes and it becomes necessary to resort to thermal power stations operating with fossil fuel, a generation system which involves significant costs. Given these circumstances, the country is forced to import energy from neighbouring countries (such as Argentina and Brazil), which is acquired at very high costs. For instance, the importation of electric power from Brazil and Argentina was necessary to cover the country's energy demand for almost every day during the first nine months of 2012.[2]

Moreover, the country's hydroelectric potential is almost completely exploited, the remainder being suitable only for small-sized projects.

[1] From *Energía Eólica*: *http://www.icex.es/icex/cma/contentTypes/common/records/mostrarDocumento/?doc=4396805*.

[2] From *Electric Market Administration*: *http://www.adme.com.uy/mmee/infmensualDetalle.php?anio=2012*.

To date, there are no certified hydrocarbon deposits in the country (none are currently being exploited), and there are very few coal reserves; such reserves have low heating value and high ash content. Notwithstanding the foregoing, on-shore and off-shore exploration activities have been carried out since 2011, with, as a result the award of ten blocks to seven private companies within the framework of Production Sharing Agreements. A significant commitment – of more than 1.5 billion US Dollars – has been made by the multinational companies awarded with these Production Sharing Agreements: BG Group, BP, Total and Tullow. However, the exploration phase will last at least for three to six additional years. A new round is expected to be launched in 2015, the year in which the initial exploratory perforation activities are estimated to begin.

For the aforementioned reasons, the Executive Branch has repeatedly expressed its interest in exploiting non-traditional renewable energies and has designed its energy guidelines with the aim of making the country energetically independent, all the while remaining regionally integrated and developing economically, environmentally and socially sustainable policies.

Uruguay's main renewable sources

(a) Hydroelectric

As mentioned above, Uruguay's hydroelectric potential has almost been completely exploited. The remaining capacity is only suitable for small-sized projects. Although technical, legal and tax incentives have been granted with the objective of fostering private generation, to date, there are no mini-hydroelectric power plants connected to the national grid.

The country has four hydroelectric power plants, with a total installed capacity of 1,538 MW. According to a study carried out by the Ministry of Energy, Energy and Mining ("MIEM") together with the United Nations Industrial Development Organization ("UNIDO") in 2010, the remaining potential for the installation of mini-hydroelectric power plants below 10 MW (considering the best 50 sites) is of 101 MW; and the remaining potential for the installation of mini-hydroelectric power plants below 15 MW (considering the best 50 sites) is of 176 MW.[3]

(b) Wind Power

Uruguay has favorable natural conditions for the generation of electricity by means of wind power. Wind measurements have been taken throughout the national territory and the results have been made available on a wind map prepared by governmental authorities and Uruguay's University of the Republic in 2009. Since then, measurements obtained from sites all over the country - managed by UTE - have confirmed the availability of the resource in Uruguay.

At present, Uruguay has eight medium-scale wind farms operating within national territory, totalling an installed capacity of 161.1 MW.

Seven of the existing wind farms are private ventures, adding a total installed capacity of 141.1 MW: (i) a 50 MW farm property of Palmatir S.A.; (ii) a 50 MW property of R del Sur S.A.; (iii) a 18.05 MW farm property of Nuevo Manantial S.A.; (iv) a 17.2 MW farm property of Kentilux S.A.; (v) a 3.6 MW farm property of Engraw S.A.; (vi) a 1.8 MW farm property of Lavadero de Lanas Blengio S.A.; and (vii) a 450 kW farm property of Agroland S.A. The electricity produced therein is sold to the Public Electric Utility Company ("UTE") within the framework of Power Purchase Agreements ("PA" or "PPAs") entered into by UTE with the above-mentioned private producers.

[3] From *MIEM*: *http://www.miem.gub.uy/gxpsites/ hgxpp 001?5,6,539,O,S,0,MNU;E;94;2;95;7;MNU.*

The remaining 20 MW are property of UTE and were installed in two stages: the first stage was commissioned in November 2008 and the second stage in June 2010.

There are also a few small-sized wind projects for industrial self-supply.

In addition to the aforementioned operating farms, other projects are currently under development. These are the result of PPAs having been signed with UTE, for a total projected capacity of approximately 1 GW. Some of these projects are expected to enter into service in 2014 and the remaining are expected to be commissioned in 2015.

These PPAs were awarded in the context of public procurement procedures promoted by UTE in the execution of general policies designed by MIEM and the Executive Branch.

The first three PPAs, for a total capacity of 150 MW, were awarded in 2011 at a price of approximately 90 US Dollars/MWh. All the rest were awarded at a price of approximately 63 US Dollars/MWh.

These prices are adjusted periodically in accordance with a formula based on local inflation and the United States' Producer Price Index.

In 2012, UTE announced its intention to develop up to 200 MW in the form of an unusual "leasing" business model with one or more private suppliers/manufacturers, which resulted in the award of a 71 MW project developed by Teyma S.A.. UTE has also set ambitious goals aimed at developing wind parks of its own. To date, UTE is currently developing projects for a total installed capacity of 462.3 MW, including a 140 MW wind farm operating with Nordex WTG. UTE expects to have these projects in place by third quarter 2014 onwards.

In April 2012, MIEM passed a regulation instructing UTE to foster the execution of PPAs with industrial consumers by virtue of which such industrial consumers may install WTG producing power for their own consumption, but with a possibility of selling surpluses to UTE, at a pre-agreed price, in the context of PPA. Interested parties may submit offers up until late May 2014, or up until an awarded capacity of 200 MW is reached.

A detailed explanation of existing and projected wind ventures can be found at: *http://www.adme.com.uy/agentes/generadores.php.*

Additional information about the Uruguayan wind program can be found at: *www.energiaeolica.gub.uy.*

(c) Biomass

Biomass is a natural resource which is being gradually incorporated into Uruguay's energy matrix. According to an official report developed by MIEM together with the UNIDO, Uruguay has a biomass-source related generating potential of:

- over 200 MW from the waste of sawmills by 2013;
- over 100 MW from fields' waste related to agro-industrial endeavours by 2012;
- over 260 MW from black-liquor of pulp mills.[4]

To date, there is an installed generation capacity of 236 MW.

Near the end of 2010, national authorities issued Decree No. 367/010 establishing the general conditions for contracts to be entered into with private generators of electric energy from biomass for plants of up to 20 MW each.

[4] From *MIEM: http://www.miem.gub.uy/gxpsites/hgxpp001?5,6,295,O,S,0,MNU;E;94;2;95;1;MNU.*

A similar scheme was organized for projects with an installed capacity between 20 and 60MW.

These special regimes provided for different prices for available energy and energy effectively summoned, and an obligation of UTE to purchase all the authorized generated energy for a period of up to 20 years, among other preferential conditions.

Within this framework, the government has estimated that an additional 200 MW of biomass generation capacity will be incorporated by the year 2015. However, the results of the public tender bid launched were below the expectations and a few projects are in the pipeline today.

(d) Solar

There are still no significant solar-based generation projects, whether thermal or photovoltaic, except for some specific experiences. However, authorities have been actively trying to promote its use ever since 2009 and a few mid-size photovoltaic projects will enter into operation soon.

Law No. 18,585 endorses the generation of thermal solar energy. This law stipulates that construction permits for health centres, hotels and sports clubs whose hot water consumption exceeds 20% of its total energy consumption, must construct and install facilities aimed at the future incorporation of solar equipment for the purpose of heating water.

By 2011, the only permits granted for such constructions were those whose design included solar equipment producing 50% of their estimated heated water use. Since 2012, these requirements have been extended to new or old heated pools.

In May 2011, the government published the bidding conditions for a tender with the purpose of constructing an experimental photovoltaic solar plant of 480 kWp, with funds provided by the Japanese government. This project was ultimately built in the northwest of the country and was commissioned in March 2013.

In March 2012, the Executive Branch launched a solar plan targeted at the residential sector, which represents 21% of the country's total energy consumption and 40% of electricity consumption, to promote the use of solar thermal energy.[5] MIEM estimates that families implementing solar equipment in the context of this plan will be able to save from 60% to 70% of their energy consumption related to water heating.

The solar plan is intended to bring down the existing barriers to the incorporation of residential solar panels: (i) high initial investments; and (ii) disbelief regarding its actual benefits. In relation to the first barrier, the government has arranged financing to be provided by the National Mortgage Bank ("BHU") of up to 60 instalments (five years) for the purchase of necessary equipment, and will also be granting 'efficiency bonds' to families who subscribe to the plan, which will be deducted from monthly electricity bills. In regard to the second barrier, the government will be promoting the use of solar energy by means of a media campaign.

In May 2013 MIEM issued new regulations to promote photovoltaic power generation. As for the case of wind generation, interested parties will enter into long term PPAs with UTE at a fixed price. UTE may contract providers who offer energy from photovoltaic source between 500 kW and 50 MW.

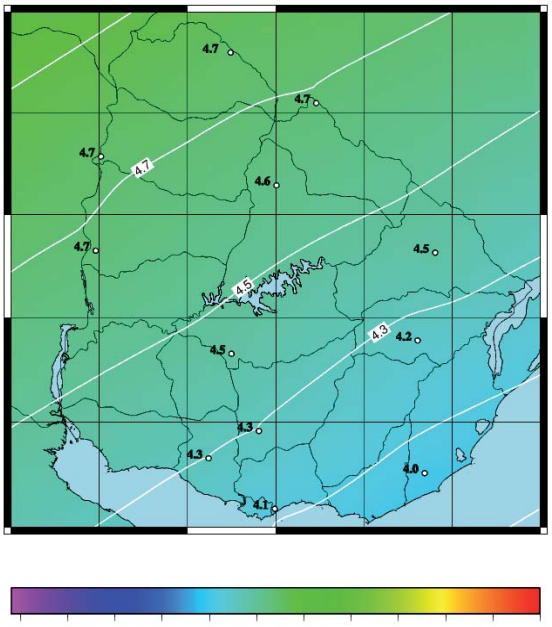
The bid was organized in three bands: (a) plants between 500 kW and 1 MW; (b) plants between 1 MW and 5 MW; and (c) plants between 5 MW and 50 MW, for a total maximum of 200 MW.

The projects of bands (a) and (b) have not been awarded so far by UTE.

In band (c) a maximum price of 91.5 US Dollars/MWh shall be paid for plants available before December 2014, gradually decreasing to 86.6 US Dollars/MWh for plants available until December 2015. The contract term in this case will be between 20 and 30 years. UTE has awarded several projects for about a total of 180 MWh but the PPAs are yet to be signed.

Additional information about the Uruguayan solar program can be found at: *www.energiasolar.gub.uy*.

A survey of the solar resource is shown below.



Source: Solar Map prepared by the Ministry of Industry, Energy and Mining
http://www.miem.gub.uy/gxpsites/hgxpp001?5,6,486,O,S,0,MNU;E;94;2;95;5;MNU;,/contact.phpd84

2. What is the definition and coverage of renewable energy under the relevant legislation?

Over the past years, Uruguay has developed a legal framework aimed at encouraging and providing benefits for power generation from renewable sources.

National regulations do not provide a general definition of renewable energy. However, for the purposes of Law No. 18,597 ("Energy Efficiency Act") 'non-traditional renewable sources' have been defined as "[…] *autochthonous energy renewable sources, such as wind power, thermal solar, photovoltaic, geothermal and tidal*

energy, and that deriving from the use of different sources of biomass".

The purpose of the Energy Efficiency Act is to lay the foundations for the promotion of an efficient use of energy. In the context of this law, renewable energies play a key role since the 'efficient use of energy' is understood as "*all changes resulting in an economically feasible decline of the amount of energy required to produce a product unit or to meet energy requirements of the services used by people* […] *It is likewise considered an efficient use of energy the substitution of traditional energy sources for unconventional renewable energy sources which enable the diversification of the energy matrix and the reduction of greenhouse gas emissions, by end users*".

In order to achieve the objectives set out in the Energy Efficiency Act, MIEM was entrusted with the task of outlining the 'National Energy Efficiency Plan', which is revised every 5 years and provides guidelines for the implementation and encouragement of the use of renewable energy sources.

REGULATIONS

3. How is the renewable energy sector regulated? What are the principal laws and regulations?

Electricity Regulatory Framework

Uruguay's electricity regulatory framework has been outlined by the following rules: Law No. 14,694 (*National Electricity Law - 1977*), Law No. 15,031 (*UTE's Organic Law - 1980*), Law No. 16,211 (*Public Enterprises Law - 1991*), and Law No. 16,832 (*Electricity's Regulatory Framework Law - 1997*).

The aforementioned regulations divide the electricity industry into two regimes: (a) public electric services; and (b) private electric activities.

(a) Public electric services:

The activities of transmission, transformation and distribution are considered public services as long as they are wholly or partially provided to third parties on a regular and permanent basis. Private parties may provide these services only if granted a concession by UTE. In the absence of such a concession, these activities will be directly performed by UTE.

(b) Electric private activities:

Generation is considered a free activity (which does not require concession) provided it is executed for: (i) the generator's use (self-supply); or (ii) for sale to UTE, big consumers, and to the public in general if sold through the National Load Dispatching Office.

Promulgation of Law No. 16,832 brought about the creation of a Wholesale Electric Energy Market ('MMEE' after its name in Spanish) and the establishment of the principles of *free access* and *no discrimination* of agents with respect to the capacity of the electrical transmission systems.

Within this framework, private producers may:

- Enter into PPAs with distributors (to date, distribution services are provided exclusively by UTE) and big consumers;
- Sell energy in the spot market. This market has been defined by article 7 of Decree No. 276/002 as being: *"the sphere within which short-term energy transactions are completed with the purpose of balancing surplus and shortages in the system, which occur as a result of dispatch, contractual commitments and actual power demand."*; and
- Export electricity.

Private generation

Decree No. 77/006, issued in March 2006, was the first specific regulation passed with the purpose of securing the incorporation of private generation of electricity from renewable sources. Through this decree, the Executive Branch instructed UTE to foster the execution of PPAs with suppliers established within Uruguayan territory and producing energy by means of wind, biomass sources, or small hydraulic power plants.

This decree was issued with the purpose of:

- diversifying the national energy matrix, diminishing dependence on traditional energy sources;
- employing autochthonous resources, reducing the need of resorting to foreign supply sources;
- promoting the development of local manufacturing;
- contributing to the preservation of the environment by the reduction of emissions;
- taking specific measures for the incorporation of wind energy, biomass and mini hydro sources, as an integral part of the National Energy Policy promoted by the Executive Branch; and
- supporting the installation of small independent power producers by means of long-term PPA's with UTE.

Along the same lines, Decree No. 173/010, issued in June 2010, brought about a great progress in the field of micro generation.

The objective of this decree is to diversify power generation, both in terms of primary sources and in terms of supplier agents by allowing the interconnection of 'micro power producers' to the low voltage distribution network.

In this sense, this regulation allows consumers of the distribution network to use electric generators of renewable energy (wind, solar, biomass or mini hydraulic) and inject the remainder of the energy not used by them into the low voltage network. Under this regime, micro power producers shall enter into interconnection agreements with UTE which will allow the bidirectional transfer of electricity between them for a period of 10 years.[5]

Main laws and regulations on renewable energy

- Decree No. 389/005, issued in October 2005. Instructs UTE to foster the execution of PPAs with private generators having an installed capacity of up to 5MW each, and for a total capacity of up to 50MW;
- Decree No. 77/006, issued in March 2006. Instructs UTE to foster the execution of PPAs to purchase up to 60 MW of electricity deriving from wind power, biomass and mini-hydro sources. This decree was later complemented by Decrees No. 397/997, 296/008 and 299/008;
- Law No. 18,046, passed in October 2006. Allows UTE to purchase electricity from power suppliers by means of direct agreements;
- Law No. 18,195, passed in October 2006. Regulates the production, commercialization and use of agro fuels;
- Law No. 18,362, passed in October 2008. Regulates easements granted in favor of wind-source electricity power producers;

[5] From *Miem. http://www.miem.gub.uy/gxpsites/hgxpp001?5,6,554,O,S,0,MNU;E;94;2;95;8;MNU.*

- Law No. 18,585, passed in September 2009. Regulates and declares as of national interest the research, development and education in the use of solar thermal energy;

- Decree No. 258/009, issued in June 2009. Instruments the 'Wind Map', providing wind speed measurements within national territory;

- Decree No. 354/009, issued in August 2009. Introduces tax exemptions for the generation of renewable energy, in some cases of up to 90%;

- Decree No. 403/009, issued in September 2009. Instructs UTE to foster the execution of PPAs to purchase up to 150 MW of electricity deriving from wind power. This regulation was complemented by Decree No. 41/010, issued in February 2010;

- Law No. 18,597, passed in September 2009. Declares the production of renewable energy as of national interest. This law entrusts MIEM with the drafting of a national plan for the efficient use of power. It also introduces mechanisms to provide finance for those who use power in an efficient manner and regulates the grant of '*certificates of efficiency*' to certain projects which further the purpose of the law;

- Decree No. 173/010, issued in June 2010. Authorizes subscribers connected to the low voltage network to install renewable generation from wind, solar, biomass or mini hydraulic and use this energy for their own needs or sell it to UTE;

- Decree No. 367/010, issued in December 2010. Instructs UTE to execute (PPAs) with electricity suppliers producing in national territory from biomass source;

- Decree No. 159/011, issued in May 2011. Complements Decree No. 403/009, calling for a new round of wind power energy (additional 150MW to complete 300 MW together with PPAs signed in the context of Decree 403/009), through the execution of PPAs with private producers;

- Decree No. 424/011, issued in December 2011. Instructs UTE to foster the execution of direct agreements with all such bidders that, having submitted offers in the context of Decree No. 159/011, had not resulted awarded. Bidding rounds organized under Decrees 403/009, 159/011 and 424/011 resulted in the execution of PPAs between UITE and private producers for a total capacity of approximately 1 GW;

- Decree No. 451/011, issued in December 2011. Establishes the regulatory framework for thermal solar equipment;

- Decree No. 50/012, issued in February 2012. Instructs UTE to coordinate the implementation of the 'Solar Plan', intended to promote residential use of thermal solar energy;

- Decree No. 158/012, issued in May 2012. Instructs UTE to foster the execution of PPAs with industrial consumers producing electricity through wind power. As per this regulation, UTE will purchase the remainders of the electricity not consumed by industrial self-suppliers;

- Decree No. 113/013, issued in April 2013. Photovoltaic farms are declared to have a null variable unitary cost;

- Decree No. 133/013, issued in May 2013. Instructs UTE to foster the execution of PPAs to purchase up to 200 MW of electricity deriving from solar photovoltaic

wind power through public procurement procedures;

- Decree No. 205/013, issued in July 2013. Regulates easements benefitting high tension line facilities.

4. What are the principal regulatory bodies in the renewable energy sector?

MIEM (Ministry of Industry, Energy and Mining) and DNE (National Energy Directorate). This Ministry is part of the Executive Branch. Through the DNE, MIEM's main role is to design, conduct and evaluate the policies on electric power issues. It is also in charge of the regulation and coordination of the activities of the other relevant participants.

National energy companies. *ANCAP* (Fuel, Alcohol and Portland National Administration) and *UTE* (Power Stations and Electric Transmissions National Administration). These companies are relevant instruments in the execution of energy policies designed by the Executive Branch.

However, UTE is the only relevant agency in the renewable energy sector. ANCAP is the company in charge of exploiting and administrating the monopoly on alcohol and national fuel, and on the importation, refining and commercialization of oil and oil products and the manufacturing of portland and cement.

URSEA (Energy and Water Services Regulatory Agency). This is the energy services' regulator, created by Law No. 17,598. It was created with the purpose of protecting consumers' rights, controlling compliance with applicable regulations and ensuring that the regulated services have an adequate level of quality and security at a reasonable price. As an independent regulator, it is its responsibility to promote competition in industrial sectors where it is authorized by law and to regulate monopolies, setting minimum quality standards and proposing prices based on efficient costs.

ADME (Electricity Market National Administration). This body operates the National Load Dispatching Office (DNC). Its main role is to administrate the wholesale market for electricity.

5. What are the main permits/licenses required for renewable energy projects?

In general terms, the main permits required are, as follows:

(a) Generation Permit

The interconnection of a new power producer to the national grid will require an authorization from the Executive Branch, subject to the prior control exerted by MIEM and URSEA. The generation permit can be revoked upon material breach of the power supplier's obligations under the general framework or the terms of the permit, including delays in the start-up of the project beyond six months as from the date of issuance of the permit.

(b) Registration of the PPA with URSEA

In the case of PPAs providing for a specific term (as opposed to sales into the spot market), the PPAs must be registered with URSEA.

(c) Approval from municipal authorities

In general terms, pursuant to article 39 of Law No. 18,308 dated 18 June 2008 and article 210 of Law No. 18,719, renewable source generation may be developed in rural plots.

Under Law No. 18,308, Municipalities are required to issue land management plans and policies covering the territories under their jurisdiction. Such land management plans may

include provisions referring to the localization of renewable projects.

(d) Environmental Permits

According to national regulations, power plants with a projected installed capacity of over 10 MW are required to obtain the following authorizations from the Ministry of Housing, Land Planning and Environment ("MVOTMA"):

- Environmental Location Viability Declaration, by means of which MVOTMA approves the projected location of the power plant;
- Prior Environmental Authorization, required prior to construction start-up; and
- Operation Environmental Authorization, required prior to project operation.

High tension lines of 150 kv or more also require the aforementioned environmental permits.

(e) Authorization from the Electricity Market National Administration

Power projects are required to obtain an authorization in order to integrate the MMEE, by means of which ADME authorizes the incorporation of the new power producer to the market.

(f) Other permits

Other permits may be required depending on the particularities of each project; for instance, regarding wind farms: authorization from the National Directorate of Civil Aviation and Aeronautic Infrastructure (DINACIA) regarding the location of the WTG, and authorization from the applicable transport authorities regarding the transportation of major components through national roads or bridges.

INCENTIVES

6. Are tax advantages available to renewable energy generation companies?

The Investment Protection and Promotion Act, number 16,906, provides an incentive framework for investments in the country. Investment projects must be submitted before a commission of the Ministry of Economy and Finance.

This general rule provides tax exemption for income tax, net worth tax, importation taxes and duties for certain goods, among others.

In particular, certain activities related to renewable energies are especially promoted by a complementary regime created by Decree No. 354/009. This regime focuses on the granting of income tax exemptions as follows:

- 90% of taxable net income between 7/1/09 and 12/31/17;
- 60% between 1/1/18 and el 12/31/20; and
- 40% between 1/1/21 and 12/31/23.

The following activities are exempt under Decree No. 354/009:

- The generation of electricity from non-traditional renewable sources;
- The generation of electricity through co-generation;
- The production of energy from renewable sources;

- The transformation of solar energy into thermal energy.

Additionally, Law No. 18,597 provides that the Executive Branch must ensure that the tax structure promotes the sustainable and efficient use of energy resources.

7. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

No. However, as mentioned above, UTE has executed agreements where a purchase guarantee is established. Decrees No. 77/006, 397/007, 403/009, 173/010, 367/010, 159/011 and 158/012 state that UTE would buy all the energy delivered by the generator during the period of the agreement while no uptime is required.

Another issue to take into consideration is that the unitary cost of renewable energies is comparatively much lower than that of hydrocarbon source. Since the spot market is organized following unitary costs of the offered energy at any given time, renewable energies must always be demanded with preference to the more expensive ones.

Regarding wind and solar photovoltaic generation, recent rules have established a unitary cost of zero for long term contracts with UTE, therefore confirming the above.

8. Is there a minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

No. However, as mentioned above, UTE has executed agreements where a fix price in US dollars (annually adjusted) is established. Decrees No. 77/006, 397/007, 403/009, 173/010, 367/010, 159/011 and 158/012, as well as Decree No. 113/013, state that UTE will pay power producers the amount offered, for the whole term of the agreement. As a consequence, a minimum price has been guaranteed within the context of such agreements.

These prices are higher than the price in consideration of which UTE sells electricity to large consumers, but lower than the average price paid in the spot market.

9. Has the Kyoto Protocol been ratified? What is the general regime for carbon credits?

Uruguay was one of the first countries to ratify the Kyoto Protocol, through the passing of Law No. 17,279 in November 2000.

However, the number of projects submitted in Uruguay is relatively low in comparison with other Latin American countries. Notwithstanding this, about 30 projects have been approved by MVOTMA, most of which are related to the implementation of renewable energy generation.[6]

The stages involved in the obtainment of Emission Reduction Certificates are, as follows:

- Identification and design of the project;
- Approval by MVOTMA;
- Validation by a designated operational entity;
- Registration with the Executive Board of the CDM;
- Monitoring of the approved project;

[62] http://www.aecid.org.uy/wp-content/uploads/2014/04/Informe-Medio-Ambiente-y-Energ%C3%ADa;-en-Uruguay.pdf

- Verification and certification by a designated operational entity; and
- Issuance of Emission Reduction Certificates.

10. Do renewable energy based power plants have priority for connection to the grid?

There are no specific preferences in terms of connection of power plants to the national grid.

The available capacity of transmission lines could pose a limitation in certain portions of the national grid if more than one project were to compete for access. However, said competition is likely to occur between two renewable-source projects, rather than a traditional versus a renewable source project.

It should be noted that all private projects are required to bear the costs associated with their connection to the national grid.

11. Is there an incentive for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants?

Yes. Decree No. 354/009 expressly sets out tax benefits for the national manufacturing of machinery and equipment used for the generation of electric power from non-traditional renewable sources, the generation of electricity through co-generation, the production of energy from renewable sources and the transformation of solar energy into thermal energy.

Along the same lines, Decree No. 451/011 provides that local manufacturers of solar equipment required for the implementation of the Solar Plan shall be exempted from VAT.

There are also tax benefits for the conversion of equipment and/or for the incorporation of processes which promote the efficient use of energy as well as for services rendered by energy service companies.

Additionally, rules regulating tenders called by UTE for the purchase of electricity produced from a non-traditional renewable source by generators located in the national territory provide that investment components of national origin are to be given preference when awarding the bids.

12. What are the other incentives available to renewable energy generation companies?

Uruguay is a member of the Kyoto Protocol as a developing country. This means that when carrying out activities which reduce the emission of greenhouse gasses such as the production of renewable energies, Emission Reduction Certificates can be issued and then commercialized to industrialized countries.

The acquisition of Emission Reduction Certificates within the scope of the Clean Development Mechanism is another important incentive to the production of renewable energy.

According to the bidding conditions of UTE's tenders, the power producer must obtain Emission Reduction Certificates. Their commercialization is to the benefit of the power producer.

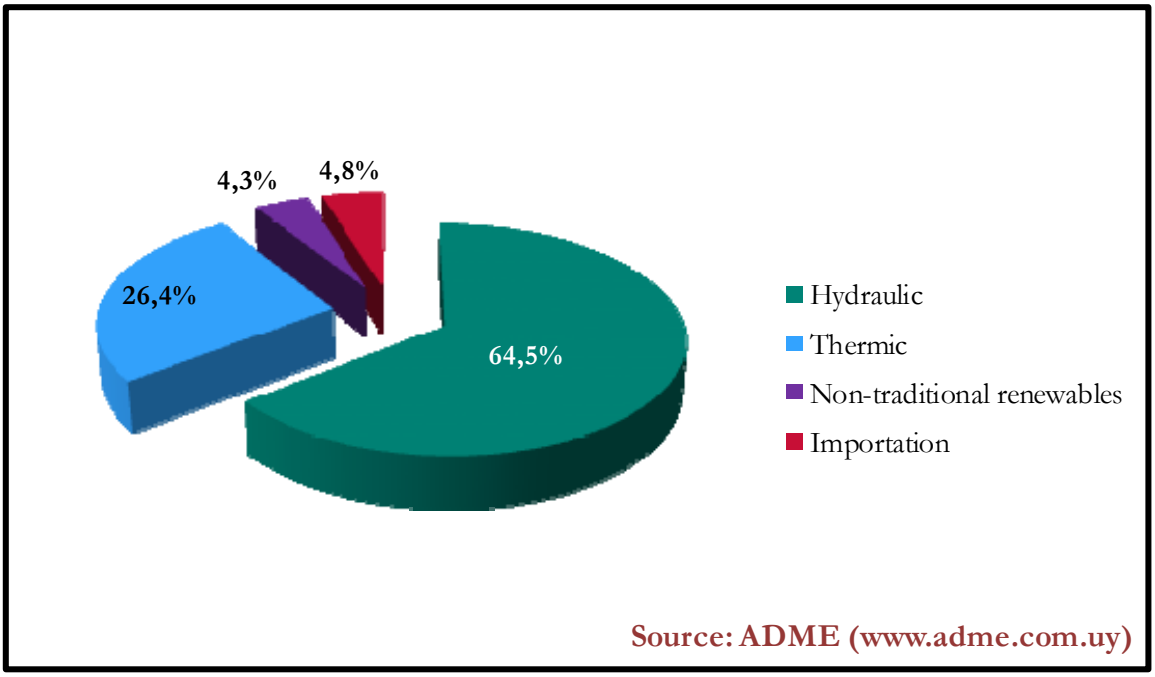
STATISTICS

13. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

During 2011 (last year with full statistics published), the demand was supplied through the following sources:

- Hydro: 64.6%;
- Thermic: 26.4%;
- Unconventional renewables: 4.3%;
- Imports: 4.8%.

These figures show a significant variation in the supply of the electricity demand in respect of the prior year mainly because of the incidence of a dryer year. In 2010 the generation from thermic plants was only 8.3% and the difference was covered by hydro generation. Renewables, in turn, show a slight increase that will become more significant in the coming years.



Source: ADME (www.adme.com.uy)

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