GLOBAL RENEWABLE ENERGY Guide

2011

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GLOBAL RENEWABLE ENERGY Guide

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Editors
Av. Mesut Çakmak
Av. Dr. Çağdaş Evrim Ergün

Publication Assistants
Simla Namal
Selen Urundul

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FOREWORD

ÇAKMAK PUBLISHING is pleased to publish the 2011 edition of *Global Renewable Energy Guide*.

Global Renewable Energy Guide has been designed to provide an overview of the applicable legislation and the incentives available to the renewable energy companies worldwide, and to help investors, lenders and government agencies understand and compare the conditions applicable in different jurisdictions.

The book has a question and answer format with a common questionnaire set by the editors and answered by leading practitioners from 31 jurisdictions around the world.

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.

Av. Mesut Çakmak
Av. Dr. Çağdaş Evrim Ergün
Editors
Ankara, October 2011

Austria

Dr. Kurt Retter, LL.M.
Dr. Clemens Regehr

WOLF THEISS Rechtsanwälte GmbH

GENERAL

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

Austria's energy supply is based on a balanced mixture of energy sources in which the role of renewable energy is significant. Renewable energy provides approximately a quarter of Austria's energy needs - the second highest level of renewable energy use in the European Union after Sweden. Austria's commitment to non-nuclear energy combined with abundant hydro and biomass resources and Austrian environmentally friendly orientations have encouraged this very high exploitation level 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 the 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. The high proportion of biomass is mainly due to the great significance of wood for district heating. 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 steady rise in the total energy demand has taken place, and a decrease of the share of RES-Electricity has been noted. 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 basis of renewable energy sources. The Austrian Green Electricity Act of 2002 was amended in 2006 and 2008 leading to revised subsidy conditions for new renewable energy sources (RES) power plants. Whereas pre-established statutory provisions still apply to the existing plants, the current Austrian Green Electricity Act applies to the following power plants:

- Small scale hydro power plants (maximum capacity up to 10 MW): generated (fed-in) electricity with purchase obligation (since the amendment of the Green Electricity Act 2008 alternatively to the feed-in tariff system, subsidies for investments are available).

- "Other green power plants" such as wind-, solar-, geothermal-, solid biomass- and waste with a high biomass share, landfill gas-, sewage gas- and biogas-: generated (fed-in) electricity with purchase obligation.

- Heat tariff (combined support of electricity and heat) for solid biomass and waste with a high biomass share power plants that receive tariffs according to the feed-in tariff of 2002.

- Existing or refurbished combined heat and power plants for public district heating supply: support tariff (when refurbishment investment amounts to 50% of the value of a new plant of the total capacity after refurbishment).

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

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

- Subsidies for investments in new fossil combined heat and power plants.

Please note that currently substantial amendments of the Austrian Green Electricity Act are going through the parliamentary process. The new Austrian Green Electricity Act shall apply from 2012 on. Essentially the amendments implement a substantial increase in the annual subsidy volume for the promotion of RES-Electricity generated by new RES-Electricity facilities ("Unterstützungsvolumen"). Especially the operators of new wind plants and new solar plants shall profit from this additional subsidy budget.

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 are guaranteed the off-take of their generation by the Green Electricity Settlement Centre ("Ökostromabwicklungsstelle") at supported feed-in tariffs (set annually by the Federal Minister of Economics). 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 12 to 15 years - depending on the RES-Electricity technology - starting from the date the power generating facility starts its commercial operation. After this period, the Green Electricity Settlement Centre is obliged to offer the operator of the RES-Electricity facility to off-take the electricity 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** ("Abwicklungsstelle für Ökostrom AG (OemAG)" or "Ökostromabwicklungsstelle") purchases and allocates the electricity generated in officially recognized RES-Electricity facilities at the guaranteed feed-in tariffs to the electricity traders supplying end costumers according to valid market rules. The electricity traders are obliged to purchase the electricity allocated to them at the annually adjusted settlement prices under the Green Electricity Act.

The investment allowances (investment subsidies) granted to the construction (or renovating) entity of certain hydro power plants, 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").

INCENTIVES

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

For the generation of Electricity on basis of RES no tax incentives are available. There are only tax rebates for transport and heat biofuels. These biofuels are exempted from fossil transport fuel taxes.

- If biofuels are used pure there is no mineral oil tax to pay. Generally there is no VAT reduction.

- Biodiesel with a minimum blend of 4.4 Vol.% mineral oil tax reduction by 2.8 ct/l fuel-mix compare to pure fossil fuel (part of this exemption is for desulphurization) - no VAT reduction (stays at 20%).

- Bioethanol with a minimum blend of 4.4 Vol.% mineral oil tax reduction by 3.3 ct/l fuel-mix compare to pure fossil fuel (part of this exemption is for desulphurization) - no VAT reduction (stays at 20%).

6. 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 Center at standardized feed-in tariffs.

Initially, power generating facilities using RES have to be approved as green electricity facilities by the principal 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 Center 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 on an annual basis.

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

7. 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 12 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 settlement prices paid by the electricity traders provide a part of the funds financing the support for RES-Electricity. The actual financing of the green electricity support system is provided through the scheme of support contributions paid by end costumers, i.e. surcharges on the tariff charged by the grid system operators for the use of the system.

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

Neither the Federal Electricity Act ("ElWOG") nor the Green Electricity Act contains a provision explicitly stipulating priority access for green electricity producers.

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. In 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) can also claim access to the grid system on behalf of their customers.

Rather, the Federal Electricity Act provides that grid system operators may not deny to RES-Electricity producers access to the grid system if such RES-Electricity, being offered at fair conditions, could not be otherwise on the supply market. In practice, however, this provision is considered non-enforceable and is not applied.

In practice the access of RES-Electricity to the grid is guaranteed by the Green Electricity Settlement Centre, which is obliged to purchase of the RES-Electricity to the feed-in tariffs, according to the Green Electricity Act.

9. 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.

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

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

However, there are no significant investment incentives for renewable energy producers apart from the promotional framework of the Green Electricity Act.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale in Austria?

According to the statistics of the Austrian energy market regulator (Energie-Control GmbH) in the year 2008 power plants in Austria generated **67,056 GWh** of thermal and electrical power in total.

- Power generated from Renewable Energy Sources: **47,276 GWh = 71%**
  - Hydropower (10% of Small Scale Hydro Power): **40,677 GWh = 60.7%**
  - Solid Biomass: **2,359 GWh = 3.5%**
  - Liquid Biomass: **36 GWh = 0.1%**
  - Landfill Gas and Sewage Gas: **19 GWh = 0.0%**
  - Biogas: **950 GWh = 1.4%**
  - Other biogene Power: **1,203 GWh = 1.8%**
  - Wind Power: **2,011 GWh = 3.0%**
  - Photovoltaic: **19 GWh = 0.0%**

- Geothermal Energy: **2 GWh = 0.0%**

- Power generated from Fossil Fuels / Derivatives: **19,247 GWh= 29%**
  - Hard Coal: **5,524 GWh = 8.2%**
  - Brown Coal: **0 GWh = 0.0%**
  - *Derivatives:* ***1,374 GWh = 2.0%***
  - *Mineral Oil Derivatives:* ***1,244 GWh= 1.9%***
  - *Natural Gas:* ***11,138 GWh = 16.6%***
  - *Other Fuels:* ***533 GWh = 0.8%***

WOLF THEISS Rechtsanwälte GmbH	
Dr. Kurt Retter, LL.M. Schubertring 6 1010 Vienna Austria T +43 1 515 10 – 5240 F +43 1 515 10 - 665240 E kurt.retter@wolftheiss.com	**Dr. Clemens Regehr** Schubertring 6 1010 Vienna Austria T +43 1 515 10 - 1042 F +43 1 515 10 - 665240 E clemens.regehr@wolftheiss.com

Azerbaijan

Aykhan Asadov
Mahmud Yusifli

BAKER & MCKENZIE - CIS

GENERAL

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

Azerbaijan has on average 300 days of sunshine and 260 windy days a year; the average wind speeds of eight meters per second on the Abseron peninsula is well above the minimum requirements for power generation. The government of Azerbaijan and industry experts consider alternative power to be economically feasible given the country's high average wind speeds and number of sunny days.

In 2009 (no data are yet available for 2010), energy generated from renewable sources accounted for 12.4 percent of the total energy produced in the Republic of Azerbaijan. Hydropower already accounts for about one seventh of Azerbaijan's electricity generation and still has the capacity to increase to 16 TWh. While not all of the potential 40 billion kWh of river hydropower is feasible, the Ministry of Industry and Energy of the Republic of Azerbaijan (the "Ministry") estimates that small hydropower plants could produce 5 TWh of electricity, saving the country 850,000 tons of oil per year.

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

Both Law No. 94-IQ on Use of Energy Resources, dated 30 May 1996 (the "Energy Resources Law") and Law No. 541-IQ on Energy, dated 24 November 1998 (the "Energy Law"), define "renewable energy resources" as *"the energy resources permanently which exists in the environment or is constantly renewed (solar, wind, geothermal, biomass, sea and water currents, etc.)"*. The law purposefully leaves this definition broad open-ended; as the Caspian Sea is not tidal, the definition, supposedly, does not include tidal energy.

While the terms "alternative energy" and "renewable energy" are used interchangeably in legislation, the Rules on Issuing a Special Permit for Activities on Alternative and Renewable Energy Sources, approved by Resolution No. 95 of the Cabinet of Ministers of Azerbaijan, dated 20 May 2010 (the "Licensing Rules"), use a term "alternative energy resources" defined as *"all types of heat and electricity energy produced based on (renewable energy) sources other than hydrocarbon fuel"*.

REGULATION

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

In addition to the Energy Resources Law, the Energy Law and the Licensing Rules, the renewable energy is regulated by the Law No. 459-IQ on Electrical Energy, dated 3 April 1998, the Law No. 784-IQ on Electricity and Heat Power Stations, dated 28 December 1999 (the "Power Station Law"), and the State Program on the Use of Alternative and Renewable Energy Sources in Republic of Azerbaijan, approved by Presidential Instructive Order No. 462, dated 21 October 2004 (the "Program"). At present, specialists engaged by the Government are working on development of the draft law on *Alternative and Renewable Energy Sources*.

Azerbaijan is a signatory to the Statute of the International Renewable Energy Agency, established on 26 January 2009; the country

also entered into memoranda of understanding on renewable energy with the Syrian Arab Republic and the Hellenic Republic.

In 2009, activities in alternative and renewable energy sector were included in the list of activities being subject to licensing. Pursuant to the Licensing Rules, any legal entities and individuals wishing to engage in design, construction and operation of small hydropower stations (with a capacity of 50 to 10,000 kW) and energy-generating facilities from (i) geothermal waters and (ii) wind, sun, and biomass with a capacity exceeding 10 kW, must obtain a special permit (license) from the Ministry. The license is granted pursuant to an application or on a competitive basis. The Ministry considers the application and adopts a resolution within 30 business days, which may be extended up to an additional 15-day term. The applicant's failure to start implementing the project within one year of the date of the license may result in the Ministry's revoking it.

A designated state commission consisting of relevant state agencies, representatives of Milli Maclis (National Assembly - Parliament) and public and private energy entities are participating in the discussion on the development of a favorable regulatory framework for renewable energy projects.

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

The State Agency on Alternative and Renewable Energy Resources (the "Agency"), acting under the Ministry, is the primary regulatory body. Under its Regulations, the Agency (i) participates in the development and procures the implementation of state policy on renewable energy and infrastructure; (ii) participates in development of laws and regulations; (iii) makes recommendations to the Government on improving utilization of energy sources, planning, construction and use of facilities, and on control of production of necessary equipment; and (iv) promotes planning, construction and production in the renewable energy industry. The Agency is also responsible for licensing of alternative and renewable energy related activities.

All energy tariffs, including energy generated from alternative sources, are set by the Tariff Council of the Republic of Azerbaijan.

INCENTIVES

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

Wind turbines are exempt from the Azerbaijani value added tax (VAT, 18 percent) and customs duty (can be as high as 15 percent) upon importation.

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

There is a guarantee in the Power Station Law for the purchase of electricity from renewable energy. The law, however, does not impose sanctions on the grid operator or distributor for failing to purchase the power.

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

There is a fixed price for electricity from renewable energy. The wholesale price of electricity produced by private small hydropower stations (i.e., the hydropower stations with a generation capacity of 50 to 10,000 kW) is AZN 0.025 per kW/hour (approx. US$ 0.03 cents) while the wholesale price of electricity produced by wind power stations is AZN 0.045 (approx US$ 0.056 cents).

Development of feasible tariff structures remains a priority for investors. Azerbaijan's Tariff Council and the Ministry of Economic Development are charged with the development of such structures. To minimize the burden on consumers, the Government has announced its intention to establish a special fund for compensating consumers for the increase in wholesale prices due to higher tariffs for renewable energy.

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

At present, there are no legal provisions giving priority to the renewable energy plants. The Power Station Law, however, does provide that the Government may subsidize the development of renewable energy producing power plants.

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

No. The Program instructs a number of ministries and state agencies to investigate possibility of manufacturing in Azerbaijan equipment and materials used for the generation of renewable energy.

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

The Government is currently considering additional incentives, including an increase in wholesale electricity prices to encourage the development of renewable energy in Azerbaijan.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

Energy generated from renewable sources in 2009 constituted 12.4 percent of all power generated in Azerbaijan, all of which is from hydropower stations operated by Azerenerji. Data from privately-owned hydropower stations and other renewable energy sources is unavailable.

BAKER & MCKENZIE – CIS, LIMITED

Aykhan Asadov

The Landmark III, 8th Floor
96 Nizami Street
Baku AZ1010 Azerbaijan
T +994 12 497 18 01
F +994 12 497 18 05
E Aykhan.Asadov@bakermckenzie.com

Mahmud Yusifli

Landmark III, 8th Floor
96 Nizami Street
Baku AZ1010 Azerbaijan
T +994 12 497 18 01
F +994 12 497 18 05
E Mahmud.Yusifli@bakermckenzie.com

Belarus

Mikalai Markouni
Olga Kuchinskaja

VLASOVA MIKHEL & PARTNERS

GENERAL

1. What is the nature and importance of the 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. The main document that confirms the importance of renewable energy sources importance in Belarus is the Law of the Republic of Belarus dated 27 December 2010 No. 204-Z, "On renewable energy sources" (hereinafter the Law "On RES"), which has recently been adopted and come into effect. This law creates a legal base for renewable energy sources development.

There are also such program legislative acts as *the Concept of Energy Security of the Republic of Belarus* is approved by the Edict of the President of the Republic of Belarus dated 17.09.2007 No. 433. The Concept 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-year *National Program of Local and Renewable Energy Sources Development,* which was approved by the Council of Ministers of the Republic of Belarus dated 10.05.2011 No. 586. The main purpose of this Program is a growth of value of own energy sources use and development of new tendencies in the sphere of energetic.

However, it should be noted that at present in Belarus the legal regulation of relationships in the field of renewable energy is still in the process of formation. Many aspects of this area have not been yet regulated by the legislation.

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 "On RES" the renewable energy sources 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 "On RES"*. The Law "On RES" came into force recently - on 5 July 2011.

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.

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 labelling 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 *state and republican programs*, including energy saving programs, which determine the need for use of energy produced from renewable energy sources.

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 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.

It is necessary to note, that due to the fact that the Law "On RES" has only recently come into force some features are still in the pipeline for implementation. For example, the State

Cadastre of Renewable Energy Sources is now at the stage of development, its introduction is planned in April 2012.

INCENTIVES

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

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

1) Equipment used in the production or reception (receiving), transformation, accumulation and (or) the transfer of energy produced from non-conventional and renewable energy sources shall be exempt from value added tax when import into the territory of the Republic of Belarus (article 96).

The reason for the exemption is a conclusion on labelling imported goods as equipment used for producing energy from non-conventional and renewable energy sources. Such a certificate is issued by the State Committee on Standardization of the Republic of Belarus.

2) Land plots under the objects and Plants for use of non-conventional and renewable energy sources are exempt from land tax (article 194).

3) The ecological tax for wastewater discharge into water objects made by thermal power stations using non-conventional and renewable energy sources, is decreased on the reduction coefficient (article 207).

6. 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. 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.

7. 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 kW•A 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.

However, by the present date the legal act that establishes multiplying and stimulating ratios for renewable energy use has not been adopted.

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.

8. Do the 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.

9. 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.

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

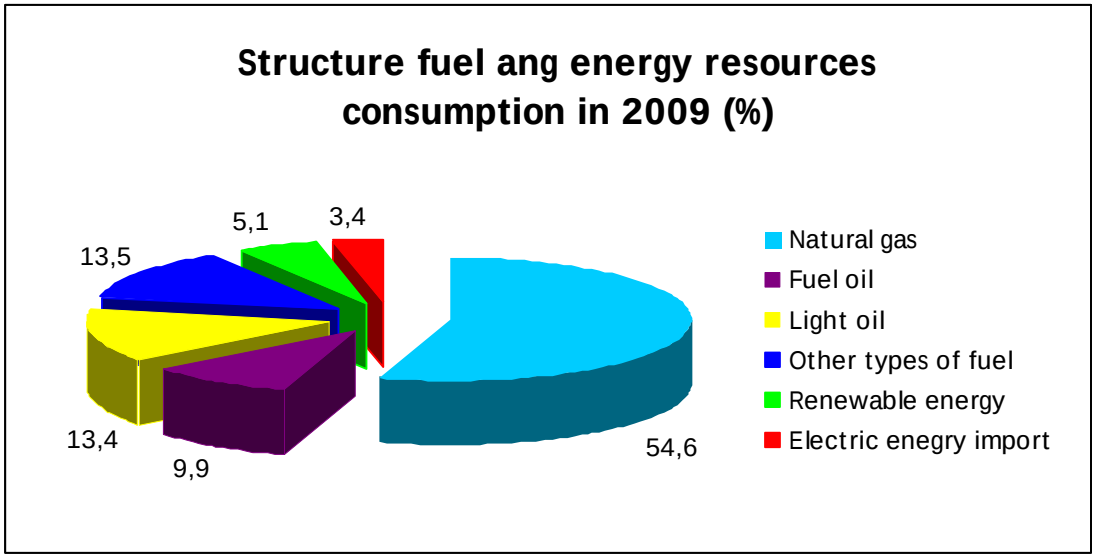
Unfortunately, as it is specified above, legal regulation on the use of energy produced from RES in Belarus is still undeveloped. Currently there are no other benefits provided to renewable energy generation companies.

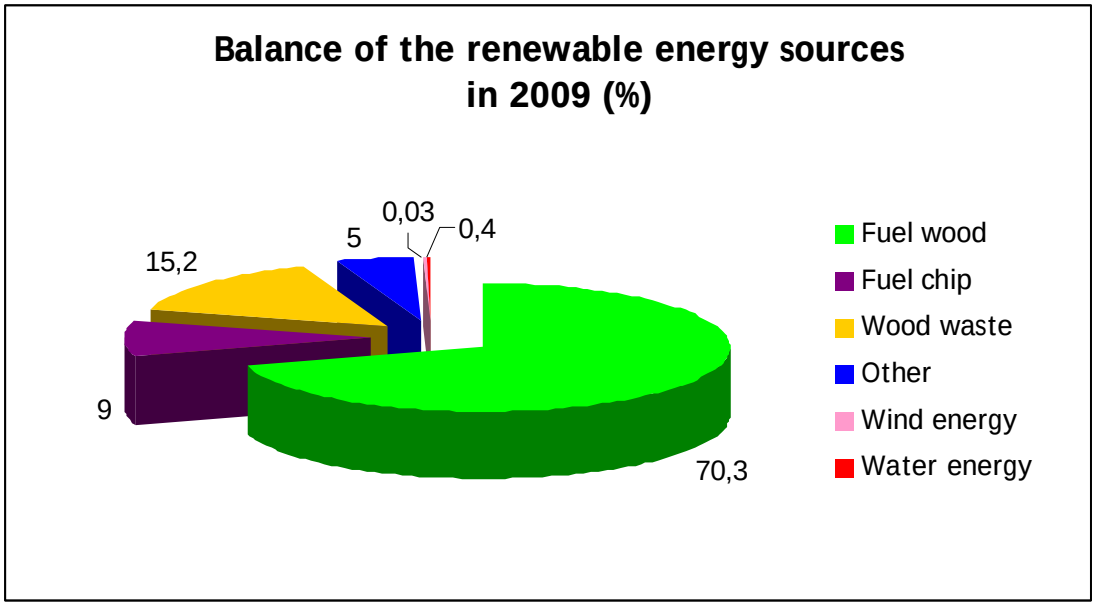
STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

At the date of signing this the detailed statistics for 2010 was not available from public sources.

The statistics for 2009 listed below are presented by the Department of Energy of the State Standardization Committee of the Republic of Belarus.





VLASOVA MIKHEL & PARTNERS	
Mikalai Markouni 76A Masherova av., 4th floor, Minsk, 220035, Republic of Belarus T + 375 (17) 203-84-96/67 F +375 (17) 203-77-02 E mikalai.markounik@vmp.by	**Olga Kuchinskaja** 76A Masherova av., 4th floor, Minsk, 220035, Republic of Belarus T + 375 (17) 203-84-96/67 F +375 (17) 203-77-02 E olga.kuchinskaja@vmp.by

Belgium[1]

Gisele Rosselle
Tim Vermeir

WHITE & CASE

GENERAL

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

Eurostat's 2010 forecast for the percentage of electricity generated from renewable energy sources in gross electricity consumption in the EU is 6% (compared to 4.2% in the latest available figures, for 2007).

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 2007 this share was 3.1%.

Belgium is a federal state consisting 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 programme 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. Geographically, the federal state is also competent for all activities in the North Sea. The regions are competent for the local distribution of energy (lines with a nominal tension of up to 70 kV), the management of natural resources and the development of alternative energy resources including renewable energy sources, environment, and town planning. Renewable electricity and heat are thus mainly covered by regional legislation (except for offshore renewable electricity production).[3]

2. What are 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 "all energy sources other than fossil fuel and nuclear energy, especially hydro-energy, wind energy, solar energy, biomass, organic products, and agricultural, forestry, and household waste". In Flanders the definition includes solar energy, wind energy, hydro-energy, tidal energy, geothermal energy, biogas and biomass. The Walloon legislation uses a definition equivalent to the federal definition. Roughly summarized, the concept includes:

- Wind energy
- Solar energy
- Geothermal energy
- Biogas

[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 broad sense (including biofuel).

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

- Biomass[4]
- Hydro-electricity

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 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 kilometres).

3.1.2. Domain concession

Under the federal Electricity Act, a domain concession gives 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 licence, permit or authorisation required for the installation(s) under other legislation is obtained. This period may be extended up to a maximum total duration of 30 years.

So far six wind park projects have been granted a domain concession:

[4] Biomass from waste must meet special requirements.

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
Eldepasco	Aspiravi, Depret, Electrawinds, Colruyt	Not yet known	36/72	670	37 km	Bank not yet named
Norther	Air Energy (Eneco)	Not yet known	Not known	Not known	Not known	Thorntonbank
Rentel	Rent-a-Port, Electrawinds	Not yet known	48 (6 MW)	960	31 km	Zuid-West Schaar (between Thorntonbank and Bank with no name)
Seastar[5]	Electrawinds, Power@Sea	Not yet known	246 MW		38 km	Between Bank with no name and Bligh Bank

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

No domain concession has yet been granted in the designated area for the two remaining zones.

3.1.3. Construction and operating authorisations

Besides a domain concession, a specific authorisation to construct ("construction authorisation") and a licence to operate ("operating licence") 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 licence is granted for 20 years, starting on the day when the applicant is notified that the licence has been granted. The construction authorisation is granted for the period needed to construct all the installations falling within the scope of the authorisation. This period is limited to five years, starting on the day when the applicant is notified that the authorisation has been granted. It may be extended once for a further 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 needed. Depending on the land under which the cables will run, an administrative authorisation 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 ('RES Royal Decree'). Owners of installations for the production of electricity from renewable energy sources offshore will be granted RECs by the CREG (Commission for the Regulation of Electricity and Gas, the federal regulatory body). These RECs are valid for five years after being granted.

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 authorisation by the Minister for Energy. The criteria for granting this authorisation are set out in a Royal Decree of 11 October 2000. However, no authorisation 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. This 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 a 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.

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

3.2.3. Renewable energy certificates

a. Flemish Region

The Flemish Electricity Decree of 2000 sets out the framework supporting the production of electricity and energy from renewable energy sources in the Flemish Region.

Producers of electricity based on renewable energy sources may receive RECs 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

A green certificate shows that 1.000 kWh electricity have been generated from a renewable energy source. RECs are calculated on the basis of the net electricity produced measured before injection into the grid. They are valid for five years from issue.

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 RECs if its production site has been issued a certificate guaranteeing origin by an approved control body. A REC 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 REC is awarded for each MWh produced, because wind turbines save 100% of carbon dioxide compared to a conventional CCTG installation. RECs 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 RECs is limited to fifteen years from the start of the production installation's operations. RECs 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 different 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 competent 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 devise any technical solutions needed 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 different legislations explicitly state 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 a 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 works 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 four legislations 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 RECs and CHP certificates.

INCENTIVES

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

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

6. 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 different federal and regional RECs are not interchangeable between the regions. Consequently, federal RECs may only be sold to the federal grid operator.

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

Federal

ELIA, the federal grid operator, must purchase federal off shore and regional RECs 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)	107 EUR/MWh	20 years
Offshore wind energy (above 216 MW per project)	90 EUR/MWh	20 years
Onshore wind energy	50 EUR/MWh	10 years
Hydro	50 EUR/MWh	10 years
Solar	150 EUR/MWh	10 years
Other (such as biomass)	20 EUR/MWh	10 years

The purchase obligation 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 offshore wind RECs in order to safeguard security of investment in a project, and taking into account the project's innovative nature. However, the price may only be modified if (i) the Minister might withdraw the concession; (ii) another authority might withdraw an authorisation, licence or permit needed to operate the wind farm; or (iii) the domain concession holder halts construction of the project during the construction phase on the basis of a non-regulatory decision which is not due to failures on the part of the domain concession holder.

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

Flemish Region

All suppliers must submit a number of Flemish RECs annually to the VREG. The number of RECs to be accumulated in year n is the subject of goals fixed by the Flemish Region

(from 6% in 2010 to 13% in 2020) and the total volume of electricity supplied to final customers in year n-1 by that supplier. Some caps apply to large volumes supplied (25% for supplies to one customer between 20 and 100 GWh; 50% for supplies to one customer above 100 GWh).

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

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

Production technology	Price (EUR)		Duration (years)
Solar	< 250 kWp 01/07/11-30/09/11: 300 01/10/11-31/12/11: 270 01/01/12-31/03/12: 250 01/04/12-30/06/12: 230 01/07/12-31/12/12: 210 2013: 190 2014: 150 2015: 110 2016 onwards: 90	> kWp 01/07/11-30/09/11: 240 01/10/11-31/12/11: 150 2012 onwards: 90	20 (installed before 31/12/2012) 15 (installed as from 2013)
Hydro (< 10 MW), tidal and waves, geothermic, on shore wind, biomass, biogas	90		10
Biogas from anaerobic digestion	100/110[6]		10/20[7]
Sewage gas, landfill gas, co-combustion of waste	60		10
Other sources	60		10

6 If no other support is granted.

7 For anaerobic digestion of biodegradable waste.

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 31for installations in operation as from 2012. The quota for the suppliers will be 7.6% as from 2012.

In recent years the OTC price of RECs was between EUR 85 and 110. The OTC price of CHP certificates was between EUR 30 and 43.

Walloon Region

Walloon RECs may be sold OTC to suppliers and grid operators.

Every quarter, electricity suppliers and grid operators are required to transfer a number of Walloon RECs 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 were 10% in 2010 and will be 12% in 2012. 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

New quotas will be set in 2011 for the years after 2013.

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

The average OTC price in 2008 was EUR 88.37 (for 1,746,237 traded certificates).

ELIA must purchase RECs at a minimum price of EUR 65.

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

See above.

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

The different legislations explicitly state that the grid operator should give priority for connection to production installations that use renewable energy resources.

9. 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.

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

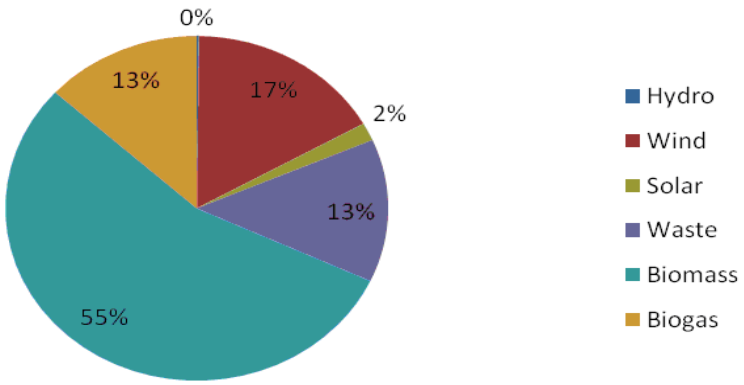
With regard to *offshore wind energy,* the TSO takes over one third of the costs of submarine cables (including onshore cables and the connection installation to the ELIA grid), up to a maximum amount of EUR 25,000,000 for a project of 216 MW or above. The TSO may charge these costs in its transmission 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 instalments. 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 the CREG.

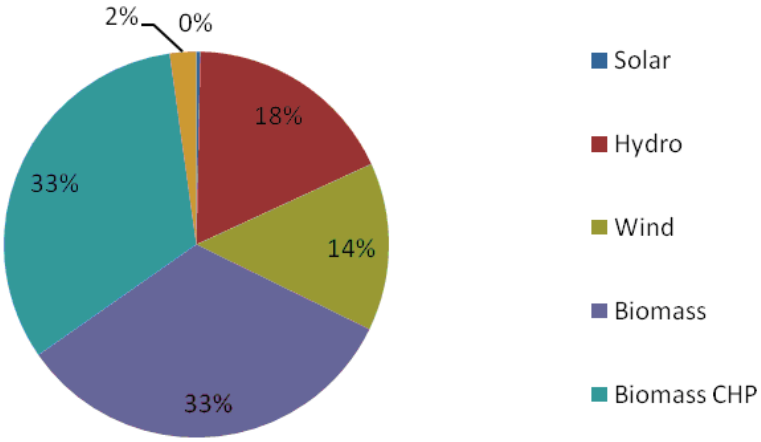
STATISTICS

11. What is the percentage of electricity generated, based on each type of renewable energy source, in the total generation of electricity at country level?

Flemis Region (2008)



Walloon Region (2008)



WHITE & CASE	
Gisèle Rosselle	**Tim Vermeir**
62 rue de la Loi Wetstraat 62 1040 Brussels Belgium	Blixt 47 rue du Congrès Congresstraat 47 1000 Brussels Belgium
T + 32 2 239 26 24	T + 32 2 203 95 49
F + 32 2 219 16 26	F + 32 2 203 65 49
E grosselle@whitecase.com	E tim.vermeir@blixtlaw.eu

Bosnia & Herzegovina

Nusmir Huskic

MARIĆ LAW OFFICE

GENERAL

1. What is the nature and importance of the 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/m2, which is some 250 l/m2 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 roll 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 in part, especially power from water streams,

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.

wind, 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 Decision about a Methodology for the Determination of Purchase Prices for Electricity from Renewable Sources with Installed Power up to 5 MW defines renewable energy as "Electric power from renewable sources" which means electricity produced from renewable non-fossil sources, which are renewable in whole or in part, such as, but not limited to the energy of watercourses, wind, solar, geothermal, wave and tidal resources, as well as biogas and biomass.[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, but the FBiH has still no law on energy or renewable energy. It has the Electricity Law, where renewable energy is defined, but not actually regulated. That is why the Decision about a Methodology for the Determination of Purchase Prices for Electricity from Renewable Sources with Installed Power up to 5 MW is the only legislation covering the renewable energy sector. A first Draft on Regulation on the Use of Renewable Energy Sources and Cogeneration in FBiH is planed to be taken into use this year.

State level:

- Law on Transmission of Electric Power, Regulator and System Operator of Bosnia

3 Law on Electricity of the Federation BiH (Official Gazette of FBiH 41/02), Article 3.

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

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

6 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), Article 2.

and Herzegovina (Official Gazette BiH 7/02, 13/03, 76/09);

- 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 and 76/09);

- 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):

- Decision on Use of Renewable Energy Sources and Co-generating Energy Sources (Official Gazette FBiH 36/10);

- Law on Electricity of the Federation BiH (Official Gazette of FBiH 41/02, 61/09);

- 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);

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. The 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]

INCENTIVES

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

Since the renewable energy sector is still new and unregulated, so are the detailed regulations

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

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

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

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

regarding tax advantages and guarantees towards the same. 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.

6. 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.

In accordance with a Decision on Use of Renewable Energy Sources and Co-generating Energy Sources there will be Operator which should determines the amount of electricity that must be purchased by each supplier of electricity on the basis of the planned total output. Due to fact that this is not a Law, there are no details on procedure but it's presribed that there must be a written agreement.

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

According to the Decision about a Methodology for the Determination of Purchase Prices for Electricity from Renewable Sources with Installed Power up to 5 MW the two federal power utility companies, "Elektroprivreda BiH" and "Elektroprivreda HZ Herceg-Bosna" have the obligation to purchase electricity from renewable sources.

The determination of the purchase price level of electric energy from renewable sources with installed power up to 5 MW will be made by application of corrective coefficients on the amount of the current tariff item for active

energy, higher seasonal and higher daily, for consumption category on 10 (20) kV voltage from the relative correction coefficient amounts are established for:

- Small hydropower plants 0.80;
- Power plants on biogas from the waste area and biomass 0.77;
- Power plants on wind and geothermal sources 1.00; and
- Power plants on solar energy 1.10.

Tariff items for the sale of electric energy may be subject to correction within + 10%, when the construction of power plants to renewable resources, with the capacity up to 5 MW, contributes to reducing development costs and building networks, which on the basis of proposals from "Elektroprivreda BiH", has to be approved by the Ministry of Energy, Mining and Industry.

For installed power up to ≤ 5 MW, the electricity price on middle voltage is 0.80x. In the Federation B&H the price is 4.05 c€/kWh, "Elektroprivreda HZ Herceg-Bosna" for example, is purchasing electricity from renewable sources with installed power up to 5 MW for 5,346 cent/KWh, or 53,46 EUR/MW, and the price in Republika Srpska is 3.32 c€/kWh.

These prices do not include the value added tax, nor the transferring costs and costs for the Independent System Operator in BH.[11]

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

The Rules presribed 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.

9. 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.

10. 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.

[11] Mr. Josip Dragić, dipl.iur., "JP Elektroprivreda HZ HB" d.d. Mostar.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

As previously stated, Bosnia and Herzegovina signed the EU obligatory protocol committing them to produce 20 percent 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 m3/a which could provide thermal energy for 130,000 households or 300,000 people.

Of other statistics, regarding the total generation of electricity at country scale, we have no confirmed information.

MARIĆ LAW OFFICE

Nusmir Huskic

Mehmeda Spahe 26
71 000 Sarajevo
Bosnia & Herzegovina

T +387 33 566 700

F +387 33 566 704

E nusmir.huskic@mariclaw.com

Brazil

Antonio Meyer
Ana Karina E. deSouza

MACHADO, MEYER, SENDACZ E OPICE ADVOGADOS

GENERAL

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

In Brazil, renewable sources of energy are of great importance. The country´s energy matrix is strongly dependant 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.

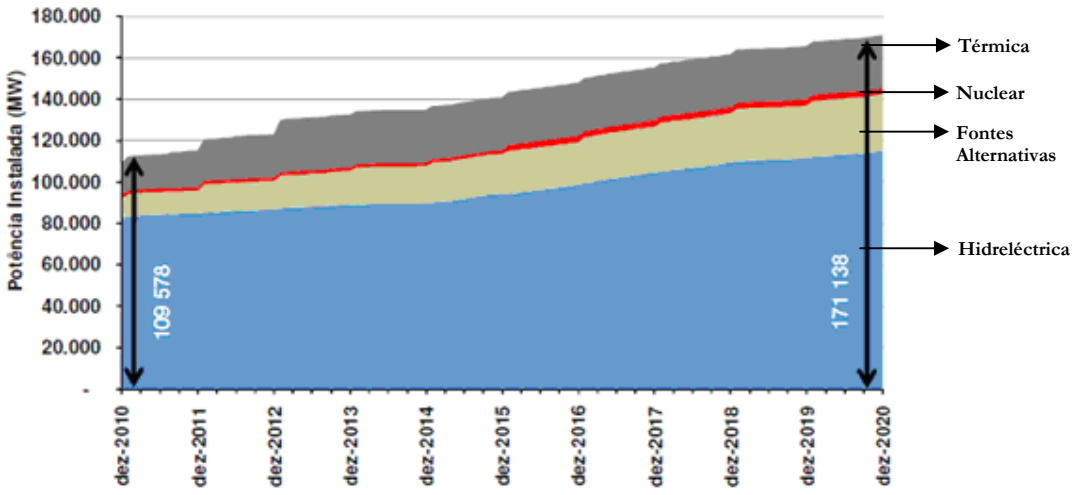
The so-called "PROINFA" was created in 2002, so as to bring incentives for the development of alternative energy sources, such as wind energy, biomass projects and small hydroelectric plants ("PCHs"). It was instituted by Law No. 10.438/02, as amended, and implemented by Decree No. 5025/2004. The plan was divided in 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, with respect to which regulations have not yet been issued, 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 should be operational.

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 a 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 Dezenal de Energia 2020

In 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 was not competitive enough for wind energy developments and none were selected.

In 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.

In 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.

Two energy auctions are scheduled to take place in the second semester of 2011: a reserve energy auction and an A-3 auction. 429 wind energy projects are enrolled to participate in the auctions, totaling 10.935 MW. Other sources of energy that are to participate in the auction are: a) hydro power projects including small hydro power plants (41 plants enrolled, totaling 725 MW) and enlargement of existing hydro plants (1 plant enrolled of 450 MW) and b) thermal power plants, including gas fueled power plants (30 projects totaling 10.871 MW) and biomass power plants (81 projects totaling 4.580 MW).

The table below depicts the expansion of renewable sources of power (in terms of installed power) between 2011 and 2013. As can be seen below, there is to be a significant increase in biomass, small hydroelectric power plants (PCH) and wind power projects in the next 3 years.

Tabela 46 – Expansão de fontes alternativas de 2011 a 2013

Tipo	Região	Potência (MW) 2011	2012	2013
Biomassa	Sudeste	887	799	329
	Sul	0	0	0
	Nordeste	61	30	0
	Norte	0	0	80
	TOTAL	**948**	**829**	**409**
PCH	Sudeste	245	24	97
	Sul	120	6	49
	Nordeste	26	0	0
	Norte	4	0	0
	TOTAL	**395**	**30**	**146**
Eólica	Sudeste	0	135	0
	Sul	295	186	246
	Nordeste	157	1.620	1.802
	Norte	0	0	0
	TOTAL	**452**	**1.941**	**2.048**
TOTAL		**1.795**	**2.800**	**2.603**

Source: EPE, Plano Dezenal de Energia 2020

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. The Law 10.438 also defined important mechanisms for subsidies for the use of renewable sources in the National Grid (*Sistema Interligado Nacional* – "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).

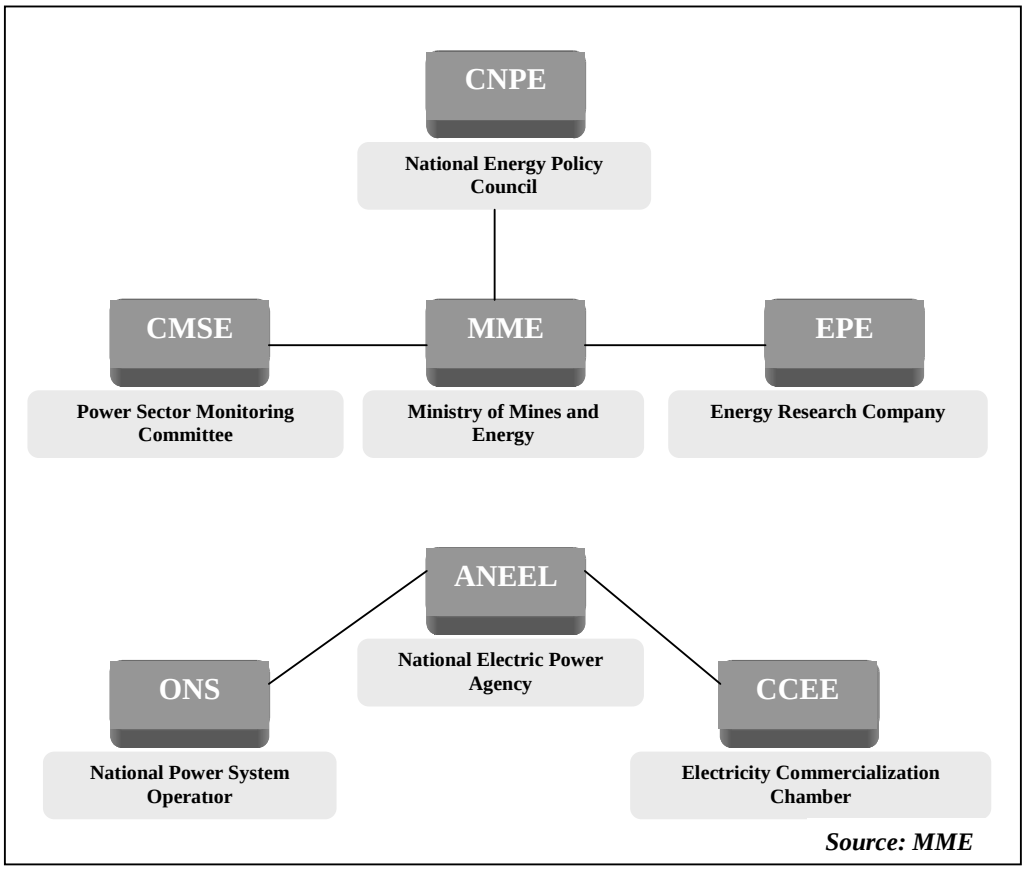
Specific auctions for energy from renewable sources are set forth by the National Electric Energy Agency (ANEEL), under guidelines set forth by the Ministry of Mines and Energy.

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).

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, the Brazilian Electric Energy Agency ("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:



Source: MME

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, dependant 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 in 2004, ANEEL is to promote, directly or indirectly, auctions for the distributing agents to purchase electricity through long term contracts within the National Grid (*Sistema Interligado Nacional- 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.

INCENTIVES

5. 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 a infrastructure project of the energy sector.

In the ease of companies of the energy sector, according to the Ordinance No. 319, dated 26 September 2009, the legal entity holds the concession, permission or authorization to generate, transmit or distribute electric energy needs to submit a request to ANEEL to participate in the program.

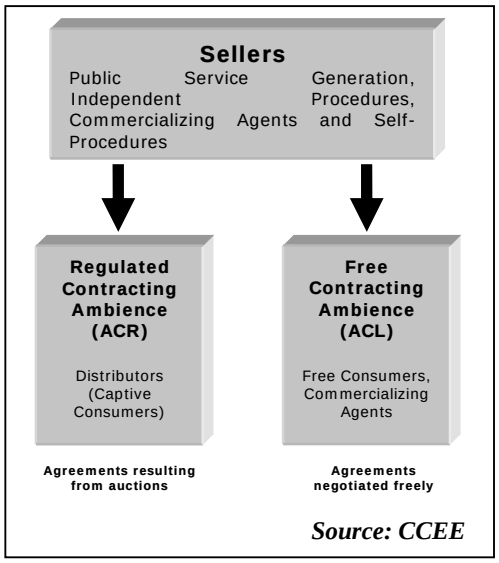
Subsequently, the legal entity needs to file with the Secretary of the Brazilian Federal Revenue, to receive the benefits of this program.

6. 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. Power purchased by the distributing companies is supplied to the captive consumers at regulated rates; 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:



[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 July 8, 1995
3 MW	69 kV	Before July 8, 1995

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

In the 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.

7. 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 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. 5163/2004). 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.

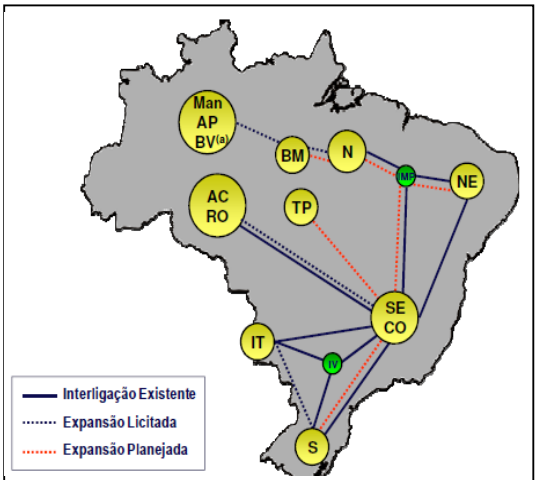
In subsequent energy auctions, the maximum price defined by the MME was set at R$189/ MWh (in the 2009 wind energy auction) and at R$ 167,00/MWh for wind and biomass and R$155,00 for small hydroelectric power plants (in the 2010 auctions). During the auction, the price dropped to an average of R$148.39/MWh (in the 2009 wind energy auction) and to R$130,86 (wind), R$144,20 (biomass) and R4141,93 (small hydroelectric power plants) in the 2010 auctions.

The maximum price for the 2011 auctions has not yet been set.

8. Do the 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 98.0% 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 Dezenal 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.

9. 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 equipments and services for the first phase of the program and 90% for the second phase, 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.

The 60% local content requirement for equipments and services is, however, included as a condition to qualify for certain financing facilities of the BNDES, the Brazilian National Development Bank, including the FINEM[2] and FINAME[3].

[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.

10. 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.

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.

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 69kV 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 in April 2002 by the Brazilian government) to promote (i) competitiveness in the power produced from alternative sources, 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.

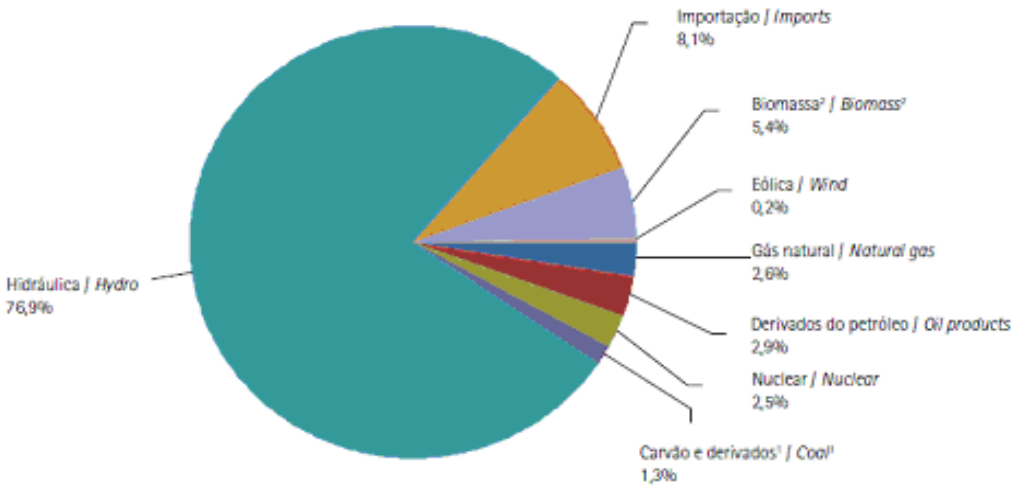
CCC funds are managed by Eletrobrás. It is the ANEEL's role to set the value of the yearly quotas to be paid by electric- power distributors to provide funds for the fuel-consumption account. These charges are in turn, transferred to consumers by means of a monthly additional contribution included in their electricity bills.

f) The Clean Development Mechanism ("CDM") created by the Kyoto Protocol is already contemplated in some Brazilian rules. The Decree No. 5,882 of 2006 determined that the Power Purchase Agreements (PPAs) of the PROINFA may have a clause which the generators pass the power to administrate the CDMs to ELETROBRÁS. The last auctions of renewable energy (the auction for reserve wind energy of 2009 and the auction of reserve energy of PCH, wind and biomass) established the possibility that the sellers of energy plead for themselves the credits related to the CDMs. In the case that the sellers decide to use the credits, it will be their responsibility to elaborate and obtain the necessary documents for the execution of all the phases for the registry in the Executive Council of the Clean Development Mechanism.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

Domestic Electricity Supply by Source - 2009



Notas/ Notes:
1 Inclui gás de coqueria / Includes coke gas.
² Biomassa inclui lenha, bagaço de cana, lixívia e outras recuperações / Biomass includes firewood, sugar cane bagasse, black liquor e other wastes.

Source: 2009 Balance of National Energy – EPE

According to data published by the Energy Research Company – EPE, in 2009, Electricity generation in Brazil, including public service power plants and self-producers, was 466.2 TWh in 2009, which is 0.7% higher than in 2008.

Public service plants remain as the main electricity generators, sharing 87.8% of total generation. Hydropower, the main electricity source, has increased 4.9% in 2009, due to favorable hydrological conditions.

Net imports of 40.0 TWh, plus domestic generation of 466.2 TWh, amount to 506.1 TWh domestic electricity supply, which is 0.2% higher than in2008. Final consumption was 426.0 TWh, which is 0.5% below the consumption in 2008.

As can be seen in the graph above, hydroelectric power plants continue to provide a large percentage of the electricity in Brazil, accounting for more than 76% 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 0,2% of the domestic supply and generation of energy from biomass for 5,4%. However, as referred above, 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.

MACHADO, MEYER, SENDACZ E OPICE ADVOGADOS	
Antonio Meyer Avenida Brigadeiro Faria Lima, 3.144 – 11 andar CEP 01451 – 000 Jardim Paulistano São Paulo Brasil T +55 (11) 3150-7702 F +55 (11) 3150 7071 E ameyer@mmso.com.br	**Ana Karina E. de Souza** Avenida Brigadeiro Faria Lima, 3.144 – 11 andar CEP 01451 – 000 Jardim Paulistano São Paulo Brasil T +55 (11) 3150-7702 F +55 (11) 3150 7071 E anakarinasouza@mmso.com.br

Czech Republic

Zuzana Picková
Tomáš Hlaváček

WHITE & CASE

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. The Czech government has further made a commitment at the EU level to achieve a share of 13% from renewable energy resources by the end of 2013. At the time of the most recent statistics (2010), this share was 8.24%.

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

A renewable energy resource is any non-fossil resource, such as 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; Act No. 180/2005 Coll., on Supporting the Use of Renewable Sources, as amended (the "Act"); and Decree No. 140/2009 Coll., on the Price Regulation Method in the Energy Sector.

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

The main regulatory bodies are the Energy Regulatory Office ("ERO") and the Ministry of Industry and Trade.

INCENTIVES

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

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

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

Any producer of electricity generated by renewable resources has the right to (i) sell the electricity on the market (and be compensated by means of a green bonus), or (ii) sell the electricity to the regional distribution company/transmission grid operator; the regional distribution company and transmission grid operator are obliged to buy all energy generated by renewable resource facilities.

7. 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 every year by 30 November for the following calendar year. The prices and green bonuses are guaranteed by law for a period of 15 years from the commissioning of the

facility. The prices guaranteed as of the day of commissioning cannot be decreased and can only be changed based on the Producer Price Index.

New rules are expected to be adopted soon, however, rights acquired under the current legislation cannot be affected and this principle will remain in new legislation.

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

Yes, based on the Act, renewable energy based power plants have priority for connection to the grid, unless the technical status of the grid and technical reasons do not allow such connection.

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

No.

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

None.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at the country level?

The percentage of electricity generated based on each type of renewable energy source is as follows (as of the end of 2010):

Biomass	2.13
Biogas	0.72
Water	3.93
Wind	0.47
Solar	0.87
Sewage	0.12

WHITE & CASE

Zuzana Picková

Advokatni Kancelar Na
Prikkope 8 Prague 1
T +420 255 771 203
F +420 255 771 122
E zpickova@whitecase.com

Tomáš Hlaváček

Advokatni Kancelar Na
Prikkope 8 Prague 1
T +420 255 771 295
F +420 255 771 122
E hlavato@whitecase.com

Estonia

Elo Tamm

LAW OFFICE LEPIK & LUHAÄÄR LAWIN

GENERAL

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

The share of renewable energy sources in the total energy consumption was19.5% in 2009, whereas the share of renewable energy sources in electricity consumption was 9.7% in 2010. The Government has declared that the share of renewable energy sources in total energy consumtption is aimed to be 23,6% in 2015 and 25% in 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:

a) The increase of share of renewable energy in final consumption of energy from up to 23,6% in 2015 and 25% in 2020;

b) The share of transport fuels based on renewable energy sources will increase from 0.06% in 2007 – up to 10% in 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 has indicated that it plans to decrease renewable energy support in order to fight against increases in regulated prices.

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 while fossil fuel part decreases.

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

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

REGULATION

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

There are no specific laws regulating exclusively 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.

Electricity Market Act sets out the definition

of renewable energy sources and provides support measures for the renewable energy production. More detailed rules on the access of wind turbines to the electricity grid are included in the Grid Code.

Liquid Fuel Act and Alcohol, Tobacco and Fuel Excise Duty Act sets provides that excise tax needs to be paid on electricity energy.

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

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

INCENTIVES

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

No. There was an exemption from fuel excise for bio fuels, however this expired on 27 July 2011.

6. 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.

7. 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 the 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 270GWh wind energy was produced in Estonia in 2009. Estonian transmission system operator Elering expects that the amount of wind energy eligible for such support will rise up to 340 GWh in 2011.

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 is 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 will change slightly as support will not be paid for the electricity generated from biomass on condensation regime. At the same time electricity generated from biomass using cogeneration regime will be eligible for this renewable energy support.

8. Do the 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.

9. 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.

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

Electricity Market Act was amended to set out that the Grid Code must provide for a simplified procedure for the connection to the grid of generation facilities with up to 15kW capacity using renewable energy sources.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

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

Year	Total electricity production (GWh)	Hydro (GWh, share of total electricity production)	Wind (GWh, share of total electricity production)	Other renewable (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	8779	32 (~0.4%)	195 (~2.2%)	87 (~1%)

LAW OFFICE LEPIK & LUHAÄÄR LAWIN

Elo Tamm

Niguliste 4,
10130 Tallinn,
Estonia

T +372 6 306 460

F +372 6 306 463

E elo.tamm@lawin.ee

Finland

Laura Huomo
Hanna-Leena Kääriäinen

ASIANAJOTOIMISTO WHITE & CASE OY

GENERAL

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

Finland is one of the world's leading users of renewable sources of energy, especially bioenergy. Renewable energy sources provide one fourth of Finland's total energy consumption and account for more than one fourth of its power generation. The country's most important renewable sources of energy include bioenergy – wood and wood-based fuels in particular –, hydropower, wind power, ground heat and solar energy.[1]

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

At present, renewable energy is not defined in the Finnish legislation as such. However, the Act on Production Subsidies for Electricity Generated from Renewable Sources (1396/2010) 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.

REGULATION

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

- Electricity Market Act (386/1995, as amended): The Act stipulates provisions on renewable sources within the framework of the electricity market.

- Act on Production Subsidies for Electricity Generated from Renewable Sources (1396/2010): The Act has the intent to promote the production of electricity from renewable sources and the competitiveness of such sources. It provides for feed-in tariffs and fixed production subsidies paid for electricity generated from wind power, biogas, wood-based fuels and hydro power.

- Act on the Allocation of State Grants (688/2001, as amended): The Act is 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.

[1] Ministry of Employment and the Economy, available at *"http://www.tem.fi/index.phtml?l=en&s=2481"*.

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.[2]

INCENTIVES

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

The Finnish energy taxation system previously entailed various kinds of subsidies to producers of energy generation companies but with the introduction of the Act on Production Subsidies for Electricity Generated from Renewable Sources (1396/2010), which entered into force on 1 January 2011, tax subsidies were transformed, in connection with the energy tax reform, into feed-in tariffs or direct product subsidies.[3]

The 2011 energy tax reform increased energy taxes along the line but the focus in the allocation of the tax increases was to encourage the use of energy generated from renewable sources and to reduce carbon dioxide emissions.[4] In respect of transport, the energy tax reform intends to take into account energy content and carbon dioxide emissions of different fuels and any reducing effects any specific fuel may have on carbon dioxide emissions and therefore, to support the use of most environmentally friendly biofuels.[5] In respect of heat generation, energy taxes are levied based on energy tax tied to the energy content and based on carbon dioxide tax reflecting the carbon dioxide emission factor of the fuel in question.[6]

Biogas used as transport fuel and heat generator is exempt from energy taxes.[7]

Tax refunds are paid for the energy intensive industry[8] and agriculture[9].

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

To the best of our knowledge, no.

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

Production subsidies are paid for the generators of electricity from renewable sources of energy pursuant to the Act on Production Subsidies for Electricity Generated from Renewable Sources (1396/2010). Producers of electricity, whose plants generating energy from wood chip, wind power, biogas or wood based fuels have been accepted upon fulfilment of certain criteria to the feed-in tariff system, are paid for a limited

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

3 International energy tax comparison, pp. 17-18, available in Finnish at "*http://www.energia.fi/content/root%20content/energiateollisuus/fi/julkaisut%20ja%20tutkimukset/raportit/liitteet%20-%20raportit/rantakokko_energiaverovertailu.pdf?SectionUri=%2ffi%2fjulkaisut%2fraportit*".

4 Government Bill 147/2010 on Amending Energy Taxation, p. 40, available in Finnish at "*http://www.finlex.fi/fi/ esitykset/he/2010/20100147*".

5 Government Bill 147/2010 on Amending Energy Taxation, pp. 40-41, available in Finnish at "*http://www.finlex.fi/fi/ esitykset/he/2010/20100147*".

6 Government Bill 147/2010 on Amending Energy Taxation, p. 41, available in Finnish at "*http://www.finlex.fi/fi/ esitykset/he/2010/20100147*".

7 Government Bill 147/2010 on Amending Energy Taxation, p. 16, available in Finnish at "*http://www.finlex.fi/fi/ esitykset/he/2010/20100147*".

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

9 Act on Refund of Excise Tax Levied on Certain Energy Products Used in Agriculture (603/2006, as amended).

time feed-in tariffs, the amount of which varies depending on the market price for electricity or the price of emission rights.[10] Further, producers of electricity, whose plants generate electricity from wood chip, wind power, biogas or hydro power may be paid fixed production subsidies upon fulfilment of certain criteria, if such plants have not been paid feed-in tariffs.[11]

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

There is a guaranteed access to the grid for all electricity users and electricity-producing plants, including RES-E generators. The grid operator is obligated to grant connection to the grid according to non-discriminatory criteria[12]. Thus, electricity generated from renewable sources is not given priority.

9. 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.

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

Discretionary investment subsidies are available for new investments, which receive a subsidy of up to 30% (up to 40% for wind).[13] Government subsidies may be granted to public or private sector organizations by Finland's Ministry of Employment and the Economy to support research and investment projects that involve the generation of renewable energy or the application of RES technologies.[14] Among other costs, the preparation and planning costs and the cost of materials, machinery and acquisition of necessary land are eligible for subsidies.[15]

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

Total energy consumption in Finland fell by nearly 6% in 2009 and the use of renewable energy sources contracted by 12% but the share of renewable energy of total energy consumption stood at 25%.[16]

In 2009, electricity production with renewable energy sources decreased by 22% from the year before as the bad water situation in the Nordic countries reduced the domestic production of hydro power by 26% and also due to the industrial downturn, because the electricity produced with black liquor from the forest industry fell by 19% and the electricity produced with other wood fuels went down by 14% from the year before. The share of electricity produced with renewable energy sources in electricity production fell to 30%. In the production of renewable electricity hydro power accounts for 60%, black liquor from the forest industry for 20% and wood fuels for 17%.[17]

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10 § 6, Act on Production Subsidies for Electricity Generated from Renewable Sources (1396/2010).

11 § 30 and § 31, Act on Production Subsidies for Electricity Generated from Renewable Sources (1396/2010).

12 § 9, Electricity Market Act (386/1995, as amended)

13 § 4, Government Decree on General Rules for the Allocation of Subsidies for Energy (1313/2007, in force until 31 December 2012).

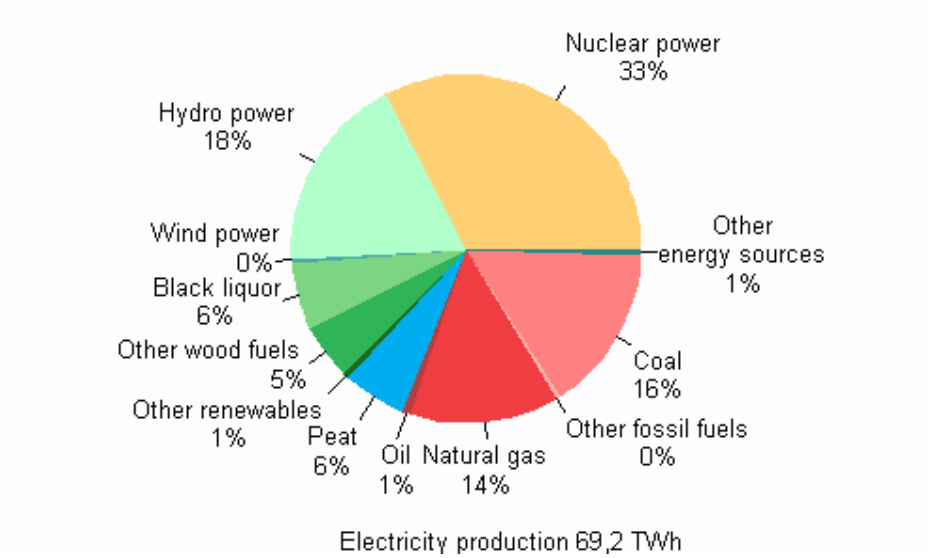
14 § 2, Government Decree on General Rules for the Allocation of Subsidies for Energy (1313/2007, in force until 31 December 2012).

15 § 6, Government Decree on General Rules for the Allocation of Subsidies for Energy (1313/2007, in force until 31 December 2012).

16 Official Statistics of Finland, available at "*http://www.stat.fi/til/ekul/2009/ekul_2009_2010-12-10_tie_001_en.html*".

17 Official Statistics of Finland, available at "*http://www.stat.fi/til/salatuo/2009/salatuo_2009_2010-09-29_tie_001_en.html*".

Figure 01. Electricity production by energy sources 2009



Source: Statistics on production of electricity and heat, Statistics Finland and Electricity statistics, Finnish Energy Industries

ASIANAJOTOIMISTO WHITE & CASE OY	
Laura Huomo Eteläranta 14 FI-00130 Helsinki, Finland T +358 9 22 86 4350 F +358 9 22 86 4228 E lhuomo@whitecase.com	**Hanna-Leena Kääriäinen** Eteläranta 14 FI-00130 Helsinki, Finland T +358 9 22 86 4344 F +358 9 22 86 4228 E hkaariainen@whitecase.com

France

Paule Biensan

White & Case LLP

GENERAL

1. What is the nature and importance of the 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 by *inter alia* putting in place a favorable legal framework to attract interest from a large number of domestic and international renewable energy players.

As a result, electricity from renewable sources accounted in 2007 for 13.3% of the French total gross electricity consumption[1] (as compared to 11.3% in 2005) representing a total consumption of 513,028 GWh[2]. In 2007, the total French gross electricity generation represented 68,289 GWh, 58,706 GWh of which was generated from hydro power plants[3]. Pumped storage plants, biomass power plants and wind turbine plants are the other principal sources of electricity generated from renewable sources and in 2007 they represented 5,475 GWh, 5,514 GWh and 4,052 GWh[4] respectively.

The French Government has committed to continue to increase the annual production of renewable energy by 20 million tonnes oil equivalent (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.[5] 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, which was partially transposed into French law by the order n°2011-504 dated 9 May 2011.

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

Pursuant to Article 29 of the law n°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 plant and biogas. Article 29 of the law n°2005-781 dated 13 July 2005 (as amended) further defines biomass as biodegradable fraction of products, wastes and residues issued from agriculture including vegetal and animal substances from earth and sea, silviculture and related industry and from the biodegradable fraction of industrial and household wastes.

1 Gross electricity consumption = total gross electricity generation + net imports of electricity.

2 Source: Eurostat, May 2009.

3 Source: Eurostat, May 2009. Does not include pumping.

4 Source: Eurostat, May 2009.

5 Program Law n°2009-967 dated 3 August 2009 on the implementation of the Grenelle Environment Forum.

6 Repealed by the order n°2011-504 dated 9 May 2011 and coded in the new Energy Code.

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 n° 2000-108 dated 10 February 2000 (as amended) relating to the modernization and development of the public electricity service (the "French Electricity Act"). The French Electricity Act has implemented into French law the European Directive electricity 96/92/CE dated 19 December 1996 and has opened up to competition the French electricity market.

The French Electricity Act contains measures to support the development of generation of electricity from renewable sources. In particular, Article 10 of the French Electricity Act[7] 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 6 and 7 below). The French authorities have enacted various secondary legislation and set out the conditions under which renewable energy generator may benefit from the power purchase obligations provided for by the French Electricity Act. In particular, decree n°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 regulated by the provisions of the French Electricity Act. Article 28 of the Electricity Act[8] 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".* New prerogatives regarding price fixing and control over access to nuclear electricity were granted to the CRE by law n° 2010-1488 dated 7 December 2010.

In relation to the renewable energy sector in particular, 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 notably carries out calls for tenders for new generation capacities from biomass. The CRE also delivers opinions on the level of feed-in tariffs applied to the power generated from renewable sources[9].

7 Repealed by the order n°2011-504 dated 9 May 2011 and coded in the new Energy Code.

8 Repealed by the order n°2011-504 dated 9 May 2011 and coded in the new Energy Code.

9 CRE 2009 National Report to DG TREN.

INCENTIVES

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

There are mainly two tax advantages granted in France to renewable energy generation companies: (i) Article 39 AB of the French Tax Code ("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; (ii) 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 aiming 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).

6. 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 8 and 10 of the French Electricity Act.

Article 8 of the French Electricity Act[10] allows the French Ministry of Energy to organize calls for tender for the construction and operation of renewable energy facilities the generating capacity of which exceeds 12 MW. EDF and non-nationalized electricity distributors are obliged to enter into a power purchase contract with the successful bidder. Pursuant to Article 8 of the French Electricity Act, 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.

Furthermore, Article 10 of the French Electricity Act[11] 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.

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

[10] Repealed by the order n°2011-504 dated 9 May 2011 and coded in the new Energy Code.

[11] Repealed by the order n°2011-504 dated 9 May 2011 and coded in the new Energy Code.

(*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 later has satisfied the requirements provided in the decree n°2001-410 dated 10 May 2001 (as modified). Power purchase contracts are concluded in a standard form approved by the French Ministry of Energy.

7. 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 non-nationalized electricity distributors, 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[12], 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 must 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.

8. Do the 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[13] 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. *Électricité Réseau Distribution France* (the "ERDF") is the principal entity responsible for the connection to the grid. In order to be connected to the grid, a generator must request the ERDF 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.

9. 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 manufactures of

[12] Decree n°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 n°2011-504 dated 9 May 2011 and coded in the new Energy Code.

[13] Repealed by the order n°2011-504 dated 9 May 2011 and coded in the new Energy Code.

equipment or materials used in the construction of renewable energy based power plants.

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

Please refer to our comments in Section 5.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

Figure 1: (Source: Eurostat May 2009)

	Gross Electricity Consumption in 2007[14]	
	(GWh)	(%[15])
Electricity from renewable sources	513,028	13.3

Figure 2: (Source: Eurostat May 2009)

	Gross Electricity Generation from renewable sources in 2007[16] (in GWh)
Total	68,289
Hydro power plants[17]	58,706
Pumped storage plants	5,475
Wind	4,052
Biomass	5,514
Photo voltaic	17
Geothermal plants	-

WHITE & CASE LLP

Paule Biensan

19, Place Vendôme
75001 Paris,
France

T +33 1 55 04 15 05

F +33 1 55 04 16 16

E pbiensan@whitecase.com

[14] Gross Electricity Consumption = Total Gross Electricity Generation + Net Imports Electricity.

[15] Total Share = a / (b+c); a = Gross Electricity Generation from RES, b = Total Gross Electricity Generation, c = Net Imports Electricity (*). Does not include pumped storage.

[16] Does not include pumping.

[17] Does not include pumping.

Germany

Dr. Alexander Dlouhy
Dr. Sabine Schulte-Beckhausen

WHITE & CASE LLP

GENERAL

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

Since it is common knowledge that the availability of fossil energy resources such as coal and oil is running out, the importance of the renewable energies is constantly increasing. Germany has taken this issue very seriously and sees a huge chance in renewable energies as these are virtually inexhaustible and do not have a negative effect on the climate. Renewable energy sources had a share of nearly 17 % of the electricity supply and 11% of the total energy consumption in Germany in 2010.

Germany is one of the pioneers in the wind power sector. With an installed capacity of 27.204 MW in 2010, Germany has the second largest installed wind power capacity worldwide. One-third of the installed wind power in Europe is installed in Germany.

Furthermore, Germany is one of the world's top photovoltaic installers, accounting for over half of the global solar power market in 2010. With an installed capacity of 17.320 MWp Germany is also leading in the field of solar power in Europe. In the year 2010 7.400 MWp have been newly installed in Germany.

Furthermore, Germany aims at reducing greenhouse emissions by 40 % up to 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. Therefore, the German government published an integrated energy and climate program in 2007 ("IEKP") which set out global standards and contains an appropriate response for a modern economy. It contained both: political and legal initiatives, which aim for 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 by now.

In September 2010 the German government published its first energy strategy ("ES") with the intention to organize an environmentally friendly, sustainable and affordable energy supply for the first half of the 21st century. 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. Besides, the ES comprised plans concerning the grid 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 have been shut down immediately in 2011. Therefore the development of the renewable energy sector becomes more and more significant. A focus of the German government lies on improving the integration of the renewable energy sources in the production sector.

With the German Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz ("EEG"); in force since 2000), the German legislator created a regulatory instrument:

- to facilitate a sustainable development of energy supply, particularly for the sake of protecting our 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, and
- to promote the further development of technologies for the generation of electricity from renewable energy sources (Sec. 1 para. 1 EEG).

The EEG was substantially amended in July 2011 with the amendment becoming effective on July 2012

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) of the Directive 2009/28/EC). However, even though German law on renewable energies is already consistent with material provisions of the Directive 2009/28/EC, there is no general 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,
- 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 out of 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 form 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 promotes also 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 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 (solar radiation) and,
- heat generated from solid, liquid or gaseous biomass.

Only the following energy sources shall be recognized as biomass within the meaning of this Act:

- 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,
- vegetable oil methyl ester

REGULATION

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

In the following we will provide a short overview over the structure of regulation in the renewable energy sector in Germany.

The principle laws and regulations are:

Renewable Energy Sources Act – Erneuerbare-Energien-Gesetz ("EEG"); in force since March 2000, latest amendment in 2011 (the latest amendment was passed on 8 July 2011 and will enter into force on 1 January 2012; all sections refered to in this article refer to the EEG in force as per 1 January 2012)

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, the offtake of the generated electricity by the respective grid operator, the respective feed-in tariffs the grid operator has to pay for the electricity and a nationwide scheme to equalize the financial burden of the promotion of renewable energies. In detail:

Priority connection to the network system

Installations generating energy from renewable energy sources have priority regarding the connection to the network.

Priority offtake, transmission and distribution

Grid system operators are obliged to offtake, transmit and distribute electricity which is generated from renewable sources. Upon request grid operators shall immediately optimize, boost and expand their grids in accordance with the best available technology in order to do so. In case of a congestion in the grid, the grid operators are obliged to regulate the installations generating energy from renewable energy sources last (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 minimum tariff guarantee 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 to the sustainability requirements set up in the Biomass Ordinance / Biomass-Electricity-Sustainability Ordinance.

Nationwide equalization scheme

The costs resulting from the regulation 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 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 network usage costs.

2nd Step:

The transmission system operators are obliged to meter the quantities and 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, themselves or jointly, at the Energy Exchange Spot Market (EEX) in an effective, non- discriminatory 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 offtakes regime that exceed the compensation received by marketing this electricity at the EEX (so-called "EEG surcharge"). Those EEG-surcharges have to be calculated in a transparent manner according to the Equalization Scheme Ordinance. The EEG surcharge for 2010 was set at 2.047 ct/kWh, for 2011 at 3.530 ct/kWh.

5th Step:

Generally, the 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). These two groups of enterprises are, upon request, exempt from the sharing of costs, which are accrued to the regulated tariffs (special equalization scheme). The reason for this exception is that the electricity-intensive manufacturing industry shall not loose its competiveness due to the regulative equalization scheme.

Ordinance on the Further Development of the Nationwide Equalization Scheme (Equalization Scheme Ordinance – Ausgleichsmechanismusverordnung; in force since July 2009, latest amendment in 2011)

The Ordinance sets out details on the complex equalization scheme under the EEG according to which the purchased electricity is marketed at 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-Wärme-Gesetz; 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 a specific amount of renewable energy (unless the building does meet certain requirements regarding thermal insulation).

Ordinance on Generation of Electricity from Biomass (Biomass Ordinance – Biomasseverordnung; in force since 2001, latest amendment in 2011)

This Ordinance sets forth details regarding the scope of application of the EEG. This includes descriptions of:

- substances that shall be considered as 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 and which are eligible for the pertinent payment framework under the EEG are always produced in full compliance with binding sustainability standards. Bioliquids not complying with these standards are no longer eligible for the pertinent payment framework under the EEG.

The Biomass-Electricity-Sustainability Ordinance sets out in detail how liquid biomass which is used for electricity and heat production must be produced and used. The liquid biomass must – in the interest of the environment, climate and nature – be produced and used in a way that emits significantly less greenhouse gases than energy production from fossil fuels. Further it must be proven that the cultivation of the crops does not destroy any particularly sensitive areas. Social conditions of the production are covered as well.

To qualify for the regulated tariffs stipulated by 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 – Biokraftstoffnachhaltigkeitsverordnung; in force since 2009, latest amendment in 2010)

In the past the extraction of liquid biomass, especially of palm and soya oil, has been done in an unsustainable manner and has led to some significant environmental damage in the production countries (deforestation of the rainforests, loss of bio diversity, etc.). Therefore, the use of liquid biomass for energy production in Germany is only acceptable if it is proven that the liquid biomass used has been grown/produced in a sustainable manner.

To promote biofuels, the German legislator is granting tax reliefs. Energy products are generally subject to energy taxes under the German Energy Tax Act. Upon request tax reliefs 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 per cent by 2020, while ensuring at the same time that biofuels are generated in a sustainable manner.

Furthermore the Federal Emission Protection Law (Bundesimmissionschutzgesetz) 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 – 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 in 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 the grid operators. They must ensure security and stability of the network and at the same time transport significantly increasing shares of wind generated electricity through the grid. Therefore, new installed and repowered onshore wind farms have to provide system services which have – so far – only been required from conventional installations. The Ordinance intents to boost security and stability of the network, 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 the renewable energy are exclusively enumerated in the EEG.

Monitoring the (general) equalization scheme

The Federal Network Agency is in particular responsible for the monitoring of 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 network costs,
- that the data referring to the location and the capacity of the installations the grid operators are obliged to present to the Federal Network Agency and other data the grid operators have to publish, are duly submitted and published,
- that third parties are given notice of the differential costs

Responsibilities concerning Solar Radiation Power

- In order to be entitled to the regulated feed-in tariffs in accordance with the EEG all installations using solar radiation power have to be registered.
- Operators of solar radiation installations have to report the location and the capacity of the installation 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 possibility to determinate the specifications of the technical equipment

that is 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).

Federal Office of Economics and Export Control (Bundesamt für Wirtschaft und Ausfuhrkontrolle)

The Federal Office of Economics and Export Control is responsible with regard to 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 the part of the electricity costs which is accrued by the payments according to the EEG.

INCENTIVES

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

Electrical power is generally subject to 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 fed-out from a grid that exclusively provides electrical power from renewable energy sources (Sec. 9 para. 1 no. 1 Electricity Tax Act).

6. 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 operators shall immediately and as a priority offtake and pay for, transmit and distribute the entire available amount of electricity from renewable energy sources (Sec. 8 para. 1, 16 et. Seq. EEG);
- grid operators shall, upon request of those interested in feeding in electricity, immediately optimize, boost and expand their grids 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 applies to upstream grid operators, too (Sec. 9 para. 1 sentence 2, 3 EEG).

In the event of a congestion within the system, grid operators may regulate the system by means of the so-called feed-in management (Sec. 11 EEG). Therefore, grid operators shall be entitled to take technical control over installations connected to their grid with a capacity of more than 100 kW – of more than 30 kW in the case of solar radiation, if

- the grid capacity in the respective grid area would otherwise be overloaded on account of that electricity,
- they have ensured that the largest possible quantity of electricity from renewable energy sources is being offtaken, and
- they have collected the data on the current feed-in situation in the relevant region of the system.

The respective grid operator shall, however, compensate the installation operator for those measures in accordance to the hardship clause:

The grid operator whose grid 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. If that is the case 100 % of the lost tariffs shall be paid (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).

7. 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

Within the scope of the general provisions the German legislator set up 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 commissioning year from the start of 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 apply to electricity generated by installations that were commissioned between 1 January 2012 and 31 December 2012; as of this date a year by year degression of the tariffs according to a pre-assigned percentage takes place).

Special provisions regarding tariffs

Within the scope of the specific rules for payment, the German legislator has defined the conditions for every single type of installation in detail. The following table shows the minimum tariffs for the different renewable energy sources.

Renewable Energy Source	EEG	Rated Output/Capacity	Min. Payment (cent/ KWh)
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

Renewable Energy Source	EEG	Rated Output/Capacity	Min. Payment (cent/ KWh)
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	21.11
Solar Radiation – attached to or on top of buildings	Sec. 33	max. 30 kW max. 100 kW max. 1 MW > 1 MW	28.74 27.33 25.86 21.56

Special Bonus System

The tariffs paid in accordance with the price guarantees shall be increased by certain bonuses if the electricity is generated utilizing an innovative technology. The German legislator aims at encouraging special technologies and energy products to set new standards for climate friendly and efficient ways to generate electricity.

The following table shows the special boni:

Name of Bonus	Source of Energy	Basic Principles, e.g. Innovative Technology	Amount of Bonus (cent/ KWh) / Rated Output (Capacity)
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 explicit 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)	heat-use	5.0

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

According to the principle of priority connection to the network, grid 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 which is suitable in terms of voltage and which is at shortest linear distance from the location of the installation, if no other grid has a technically and economically more favorable grid connection point (Sec. 5 para. 1 sentence 1 EEG).

The costs associated with connecting installations generating electricity from renewable energy sources to the grid 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 operator assigns the installations a different grid connection point he shall bear

the resulting incremental costs (Sec. 13 para. 2 EEG).

9. 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.

10. 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. The incentives intent to develop the utilization of renewable energy sources to generate electricity.

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, an EUR 5 billion loan facility program aiming 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 or biomass heating systems.

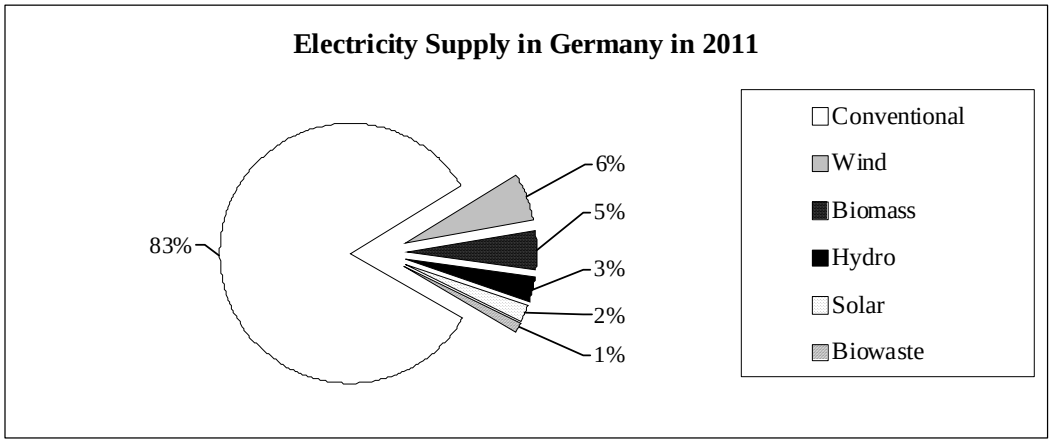
The Environmental Innovation Program

The Environmental Innovation Program intents 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

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

In 2010 renewable energy sources had a share of nearly 17 % 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.



WHITE & CASE LLP	
Dr. Alexander Dlouhy Graf-Adolf-Platz 15 Duesseldorf Germany T +49 211 49195 218 F +49 211 49195 100 E adlouhy@whitecase.com	**Dr. Sabine Schulte-Beckhausen** Graf-Adolf-Platz 15 Duesseldorf Germany T +49 211 49195 218 F +49 211 49195 100 E schulte-beckhausen@whitecase.com

Hungary

Emoke Kovacs
Aniko Sebok
Gabor Horvath

WHITE & CASE LLP

GENERAL

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

Currently, renewable energy ranks high on the agenda in politics and with private investors, especially with respect to geothermal energy, biogas and biofuel projects. The legislative background is evolving quickly because of the growing domestic energy demand and EU commitments. In 2010, the government published Hungary's renewable energy strategy for the period from 2010 to 2020, and the national energy strategy until 2030, with an outlook until 2050. It 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] 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 (already in 2011), as well as of a subsidy program in energetics (co-financed by the EU) for the 2014-2020 period..

Due to aging power plants and growing demand, there is currently considerable room for new power plant capacity in Hungary. In Hungary, 18 big power plants and approximately 300 small power stations generate 8,900 MW nominal capacity, but, due to aging equipment, only 7,900 MW capacity is expected to remain by 2015 and only 5,600 MW is expected to remain by 2020, meaning that 3,300 MW capacity will have to be replaced by 2020.[3] In addition, 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 two decades.[4] According to another calculation, 9,000 MW new capacity is required by 2030, of which 7,000 MW will be provided by large power plants and 2,000 MW by small power plants using renewable energy sources including, primarily, wind and biomass. Power plants burning biomass can have a significant role in district heating.[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 and the diversification of sources, decreasing the dependency on energy import (primarily on Russian natural gas) and encouraging the generation and utilization of renewable energy, The priorities of the Environmental and Energy Operative

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 Presentation of Dr. Alajos Stróbl (ETV-Erőterv), Budapest, 11 November 2009, titled "Conventional Power Plant Developments in Hungary", slides 13 to 15.

4 MAVIR Source-side Capacity Balance of the Electricity Grid in the short, mid and long terms, 4th edition, 2009, MAVIR-KTO-DOK-0037-00-2009-11-16, issued on 6 November 2009.

5 Key data of planned power plant constructions in Hungary in the mid and long terms, etc. Study by dr. Alajos Stróbl, 31 May 2011. p.2 and p. 78

Program (in Hungarian. Környezetvédelmi és Energia Operatív Program, the "KEOP") of the National Development Plan 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: 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 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. 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. 109/2007 of the Ministry of Economy and Transport on the distribution of energy in the mandatory off-take system by the transmission network operator and applicable prices sets forth the rules on monthly schedules, measurement, pricing and invoicing of electricity under the off-take obligation.

For a detailed description of the off-take regime, see please Sections 6 and 7 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 (VI. 30.) 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, respectively 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 the HEO 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. Due primarily to licensing issues, the global economic crisis and financing problems, as of May 2009, the total built-in wind power capacity in Hungary was 179 MW according to the Hungarian Wind Energy Association.

The HEO issued a call for tenders on new wind farm capacity in late September 2009, in a total capacity of 410 MW, based on the HEO's assessment published on 30 July 2009. 68 bidders submitted tenders on 1 March 2010, to establish 1,117.75 MW wind energy capacity. The HEO cancelled the tender in July 2010.[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 are 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] 3.1% of the quantity of gasoline and 4.4% of the quantity of diesel oil sold must be certified biofuels. [10]

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

6 Articles 5 and 6 of Decree No. 33/2009 (VI. 30.) 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.

7 New regulation is expected soon.

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 Resolutions 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.

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 resolutions of the HEO. The HEO is supervised by the Minister of National Development. Its responsibilities include issuing and withdrawing operational licenses, implementing and enforcing the Electricity Act, approving the Operating Code, approving the Commercial Code and approving the General Terms and Conditions of the licensed operators of the energy market, and consumer protection.

In addition to the HEO, the Hungarian Competition Authority actively supervises anti-competitive market practices in the energy market.

INCENTIVES

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

Hungary offers specific a development tax incentive for environmental protection or rehabilitation projects that aim to reduce use and the pollution of the environment, 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 Finance. Additionally, 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, 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 in other areas the ratio varies between 25% and 40%.

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 for 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 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 benefit under these general tax incentives are set out in Hungarian Act LXXXI of 1996 on Corporate Tax and Dividend Tax.

6. 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 Electricity") is now eligible for the obligatory off-take system. Cogeneration power plants up to 50 MW nominal capacity could opt to become members of the 'cogeneration balance circle' newly 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 cogeneration new balance circle is then sold by MAVIR at the Hungarian electricity exchange (HUPX). This regime will be in force for one year only.

The amendment of the Electricity Act also introduced the so-called 'cogeneration restructuring tariff' that is payable by the 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 in the future 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 Electricity and to ensure that the desired Green Electricity 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.

7. 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. Such indexation of the off-take price for cogenerated electricity may also

[11] The new obligatory off-take system, differentiating based on technologies and power plant capacities, is expected to be adopted in September 2011, and enter into force in January 2012.

[12] 92 of the 160 producers concerned, with total nominal capacity amounting to 4% of the Hungarian electricity system, joined the new balance circle.

take place during the year, if the change in gas prices makes it necessary.

8. Do the 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. 117/2007 of the Ministry of Economy and Transport 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 50% or 90%, such power plant gets a statutory reduction of the network connection fees in an amount of 30% and 50%, respectively.

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

The New Hungary Rural Development Program 2007-2013 (in Hungarian: Új Magyarország Vidékfejlesztési Program) subsidizes 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) from funds of the European Agricultural Fund for Rural Development. 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.

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

Investment in RES-E is supported under that Environmental and Energy Operative Program that distributes EU Structural Funds. The National Development Agency (in Hungarian: Nemzeti Fejlesztési Ügynökség,[13] the "NFÜ") is responsible for the strategy and decisions with respect to KEOP, while the Hungarian Energy Centre (in Hungarian: Energia Központ Kht.,[14] 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 the subsidy provided through the compulsory energy purchase scheme. The period of application for the KEOP programs is between 2007 and 2013. The sum available for supporting KEOP projects was HUF 42 billion in the 2009-2010 planning period.[15]

The National Energy Efficiency Program (in Hungarian: Nemzeti Energiatakarékossági Program) was replaced by the Successful

13 See *www.nfu.hu.*

14 See *www.energiakozpont.hu*

15 Energy Centre website.

Hungary Household Energy Saving Credit Program (in Hungarian: Sikeres Magyarország Lakossági Energiatakarékossági Hitelprogram) in September 2009. Credit purposes include the replacing of doors and windows, modernization of heating and hot water supply, heat insulation and the utilization of renewable energy sources. The overall budget of the Credit Program is HUF 16 billion.

The Credit Fund for Energy Saving (in Hungarian: Energiahatékonysági Hitel Alap) is a joint effort of the Ministry, the HEC and Kereskedelmi és Hitelbank Zrt. to support projects that contribute to energy saving and the use of RES-E by a preferential/reduced rate credit program.

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.

Within the frameworks of the Renewable Energy Action Plan, the Hungarian government plans to set up a so-called 'green bank' from 2012 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.

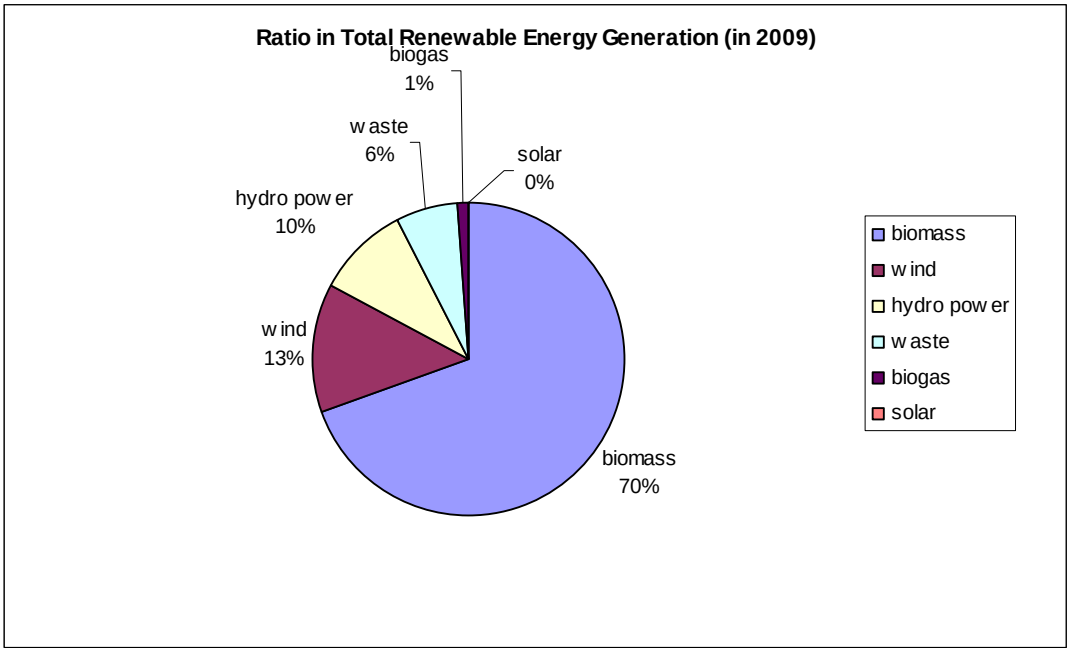
STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

The chart below shows the amount of electricity generated from renewable resources and waste in 2009 in Hungary. Electricity generated from renewable resources constituted 6.5% of the net domestic total generation in 2011.

[16] Article 55(4) of Hungarian Act CXXVII of 2003 on excise tax.

Resource type	Electricity generated (GWh) (2009)
biomass	1562
wind	300
hydro power	222
waste	145
biogas	23
solar	<1
total	**2252**



WHITE & CASE LLP		
Emoke Kovacs	**Aniko Sebok**	**Gabor Horvath**
Andrassy ut 11 1061 Budapest Hungary T +36 1 488 5206 F +36 1 488 5299 E ekovacs@whitecase.com	Andrassy ut 11 1061 Budapest Hungary T +36 1 488 5230 F +36 1 488 5299 E asebok@whitecase.com	Andrassy ut 11 1061 Budapest Hungary T +36 1 488 5204 F +36 1 488 5299 E gahorvath@whitecase.com

Ireland

Alex McLean
Sinéad Cantillon

ARTHUR COX

GENERAL

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

Since the implementation of a new wholesale electricity market (the Single Electricity Market or "SEM") in Ireland in 2007, the attention of policy makers has now turned to ensuring the sustainable development of that market over the coming years. With that in mind, it is anticipated that renewables penetration, and that of wind in particular, will continue to grow over the coming years, not least to satisfy European renewables targets as set out in the Renewable Energy Directive 2009/28/EC.

The Renewable Energy Directive sets a target of 16% of Ireland's gross final consumption of energy to come from renewable sources by 2020. In addition to targets in respect of transport (10%) and heat (12%) this will require a considerable 40% of electricity consumed to 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 system operator EirGrid's Transmission Forecast Statement for 2010-2016. Notwithstanding this correction, there remains a significant challenge to achieve this level of installed renewable capacity. With this in mind, government policy remains firmly focussed not only on meeting renewables targets but also on fostering new renewable technologies.

The National Renewable Energy Action Plan ("NREAP") sets out the Government's strategic approach and concrete measures to deliver on Ireland's 16% target under Directive 2009/28/EC. The NREAP sets out an estimation of total contribution expected from each renewable energy technology to meet the 2020 targets. The model is indicative of future investment in renewable resources, and in 2020 it is proposed that the following renewable energy technologies will hold the following energy share in electricity:

- Hydro 234 MW
- Tide, wave, Ocean 75 MW
- Biomass 153 MW
- Wind (Onshore) 4,094 MW
- Wind (Offshore) 555 MW

In terms of transport, the Government are working to transform our dependency on imported oil. The Government has set a target of 10% electric vehicles by 2020, while the national Biofuel Obligation Scheme 2010 obliges all road transport fuel suppliers to use biofuel in the fuel mix to ensure that they represent a certain percentage of their annual fuel sales.

Importantly, the Government are looking beyond 2020 and are proactively developing Ireland's abundant offshore renewable energy resources, including offshore wind, wave and tidal energy, recognising that these offer rich potential over the coming decades.

A key challenge faced by regulators and policy makers alike is to ensure a smooth transition to a market fuelled up to 40% by renewable sources. While efforts continue to foster development of renewable technologies at a government policy level, electricity market stakeholders are working to address practical

implementation issues such as grid development and intermittency. 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 intermittent power on the Irish grid, and is pioneering several renewables facilitation studies with a view to ensuring the appropriate management of the grid and stability of the electricity system during this transition.

A new 500MW HVDC interconnector between Ireland and Wales, scheduled for completion in 2012, will help to provide some such flexibility. Due to the Interconnector, there has been an increased emphasis on compliance with congestion management guidelines, and efforts have begun to marry an intra-day trading regime with the SEM market design which is characterised by a lengthy gate closure and optimisation time horizon.

Ireland's renewables industry is currently developing strongly and plays a central role in Irish energy policy overall. Renewable energy reduces dependence on fossil fuels and improves security of supply, whilst also creating environmental benefits and delivering green jobs to the economy. There is now over 1,425 MW of renewable generation connected to Ireland's onshore network and a further 1,152.9 MW contracted to connect.[1] In 2009, it was determined that an additional 3,900MW would be issued offers to connect to the grid in Ireland's third 'gate' or group processing process (further discussed in section 8).

As wind is Ireland's most significant renewable energy resource, the vast majority of Ireland's renewable portfolio is onshore wind. While this is likely to remain the case it should be noted that two offshore renewable projects have recently received connection offers (for substantially larger scale projects than their onshore equivalents). Originally the preserve of independent wind farm developers, all of Ireland's vertically integrated energy utilities (including the incumbent ESB, Viridian Group,, Scottish and Southern owned Airtricity and state-owned Bord Gáis Eireann) are now developing their own wind (and other renewable) portfolios. In addition to purchasing wind assets these utilities are also entering into long term offtake arrangements with independent generators (supported in most cases by Ireland's Renewable Energy Feed in Tariff or REFIT, further discussed in section 0). Investment is starting to be made in emergent wave and tide technologies. Finally a small proportion of Ireland's renewable portfolio is made up of biomass, small-scale hydro, biogas and anaerobic digestion.

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 laid out a broad definition of "renewable, sustainable or alternative forms of energy" meaning 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

1 *"www.eirgrid.com"* Figures as at 7 December 2010.

- geothermal
- fuel cells
- tidal
- solar
- wave.

Further to this, the European Communities (Renewable Energy) Regulations 2011, which transposed European Directive 2009/28/EC into Irish law, defines energy from renewable sources to mean 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.

REGULATION

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

Overall policy responsibility for the sector lies with the Minister for Communications, Energy and Natural Resources ("Minister"). In this capacity, the Minister is advised by a range of other statutory bodies including the Commission for Energy Regulation ("CER") and Sustainable Energy Authority Ireland ("SEAI").

As mentioned, the principal Irish legislation governing the electricity industry is the 1999 Act, which provides for the establishment of a regulatory framework for the introduction of competition in the generation and supply of electricity in Ireland and established the CER as the national regulatory authority responsible for overseeing the liberalisation of Ireland's energy sector and granting licences for the generation, transmission, distribution and supply of electricity.

Government policy in the Irish electricity sector is driven principally by the relevant EC 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 Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 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 directive 2009/72/EC is still progressing in Ireland. The European Directive on the promotion of use of energy from renewable sources, Directive 2009/28/EC 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 a 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 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. Recently, the new Minister announced he would undertake a comprehensive review of the White Paper by early 2012. Further to this, Ireland's energy efficiency policy as set out in the National Energy Efficiency Action Plan are duly reflected in the recently submitted National Renewable Energy Action Plan ("NREAP")[2] which details Ireland's strategies and measures for reaching its 2020 renewable energy targets. Overall, these reports and action plans expound an Irish policy which is strongly committed to tackling the inter-related challenges of climate change, energy security and competitiveness through Ireland's progression to a low carbon economy based around 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 1999 Act established the CER as the independent body 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 and electricity 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.

[2] Submitted to the European Commission in July 2010.

INCENTIVES

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

a. *Tax Relief for Renewable Energy Generation Investment*

Section 486B, Tax Consolidation Act 1997 provides tax relief for corporates investing 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 for Communications, Energy & Natural Resources.) 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 Revenue Business Expansion Scheme ("BES") allows individual investors to obtain income tax relief on investments made, in each tax year, into BES certified qualifying companies. Investments in renewable energy companies qualify for BES relief. While there is no tax advantage for the company in receipt of the BES, securing BES status may substantially reduce the cost to an investor of their investment. It may therefore enhance the ability of eligible companies to attract outside investment. The corporate trades which attract the tax relief incentive scheme are set out in Part 16 Taxes Consolidation Act, 1997. This Scheme of Relief for Investment in Corporate Trades enables individuals 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(s) of income tax.

c. *Securitisation 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 securitisation regime under the governing legislation of the Taxes Consolidation Act 1997 (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, favouring minimal tax leakage and maximum return for investors. The Irish Government have recently extended Section 110 and opened up Ireland's securitisation regime to new markets under the Finance Act 2011. Section 40 of the Finance Act 2011 extends the definition of financial assets which are "qualifying assets" for securitisation purposes, to include carbon offsets specifically.

d. *Research and Development Grants*

R&D 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 Sustainable Energy Authority of Ireland ("SEAI"). Currently, there is a fund on offer 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:

[3] Available at *"http://www.seai.ie/Grants/oceanenergy"*.

- 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;
- Specific industry-led research projects which will be carried out by research centres, third level institutions and centres of excellence with a high level of expertise in the relevant area.

6. 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 per se, 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, gives rise to an effective purchase guarantee.

In 2009, the SEM Committee commenced a review of the dispatch principles and the design of the market schedule in SEM. In particular, it consulted on whether priority should be afforded to generators irrespective of cost, and whether such priority dispatch should be reflected in the construction of the market schedule. On 2 September 2010 the SEM Committee published a proposed decision paper and request for further comment on its dispatch principles, in which the SEM Committee proposed that the greatest degree of priority would be afforded to generation with mandatory priority dispatch (renewable generators), and that priority dispatch would be afforded irrespective of cost.

In addition to the foregoing, the SEM Committee has stated that it will consider revising the current market design to align the market schedule with the dispatch schedule only where a failure to do so will result in a 'material harm' to consumers. Such a move would be one of the most significant changes to date of the SEM rules which have been in place for less than four years. The SEM Committee has deferred any decisions in this regard until an assessment framework for material harm has been devised.

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

While there is no minimum price guarantee given by the relevant legislation for the electricity generated by renewable energy companies, Ireland does implement a Supplier compensation regime for additional costs of renewable energy purchased, which is known as the Renewable Energy Feed In Tariff or REFIT. The availability of 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 Renewable Energy Feed In Tariff ("REFIT")

a) The REFIT 2006 scheme is a competition run 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.

b) To participate in the Renewable Energy Feed in Tariff 2006 ("REFIT 2006") Scheme, renewable generators first have to be accepted by the DCMNR/DCENR in accordance with the REFIT 2006 Competition Document[4]. Successful generators who received a "letter of offer" are subsequently required to enter into a power purchase agreement ("PPA") with a supplier licensed by the CER.

c) With the benefit of a formal REFIT 2006 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.

d) REFIT support is paid to licensed suppliers who have entered power purchase agreements in respect of the electricity from qualifying projects. Support is in the form of a 15% balancing payment based on the REFIT reference price for large scale wind as set out in the REFIT 2006 competition document; market price equalisation where the market price falls below a specified floor price; and a so-called "technology" payment calculated by reference to the difference between the applicable reference price for the renewable technology and the reference price for large scale wind.

e) **Reference prices.**

The following shall be the reference prices for each category of electricity for the purpose of calculating compensation for suppliers (Indexed from 2006):

- Large Scale Wind category – 5.7 eurocents per kWh.
- Small Scale Wind category – 5.9 eurocents per kWh.
- Hydro – 7.2 eurocents per kWh.
- Biomass Landfill Gas 7 eurocents per kWh.
- Other Biomass – 7.2 eurocents per kWh.

f) 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 a PSO levy.

g) REFIT 2006 support cannot extend beyond (a) a period in excess of 15 years; (b) 31 December 2025; or (c) the termination of the RE-FIT power purchase agreement concerned. The European Commission provided state aid clearance for the REFIT 2006 scheme by letter dated 25 September 2007.

h) The REFIT 2006 competition was subject to a quantitative limit, which has now been reached. Accordingly, the DCENR is no longer issuing REFIT 2006 letters of offer. However, the DCENR has applied to the European Commission for a second REFIT II programme which would extend to new

[4] Renewable Energy Feed In Tariff (REFIT 2006) – A Competition for Electricity Generation from Biomass, Hydro and Wind, published by the DCENR (see *"http://www.dcenr.gov.ie/NR/rdonlyres/E260E316-B65A-4FDC-92F0-9F623BA18B55/0/REFIT 2006termsandconditionsV2.doc"*.)

projects, albeit that the payment terms of any such extension are expected to be less favourable than those under the current REFIT 2006. It is understood that this is still awaiting EC approval.

i) In May 2010, the DCENR announced that additional renewable energy technologies would now also be eligible for inclusion in Ireland's REFIT scheme. The scheme as originally introduced in 2006 provided a support mechanism for more 'conventional' renewable technologies such as wind, hydro and biomass technologies. In 2010 there was an effort to broaden the scope of the scheme and with it the base of Ireland's renewable portfolio.

j) The new REFIT scheme will serve to bridge the gap in terms of the price the generator can afford to pay for the more expensive technologies and the price that competing generators currently pay for cheaper fossil fuel energy sources. The new categories available under REFIT are as follows:

- **Anaerobic Digestion**: Energy derived from the process in which volatile organic materials are broken down in an oxygen-free environment. The reference price under the new REFIT scheme for this technology is 12 cents per kWh (not indexed).

- **Combined Heat and Power** ("CHP"), or cogeneration, refers to electricity generated from biomass through the production of thermal energy and electrical power simultaneously. Although a commitment had already been made in the National Climate Change Strategy, the Energy White Paper and the Bioenergy Action Plan to amend the REFIT scheme to allow "co-firing from Biomass", no action had been taken in this regard until May of this year. The rate for this technology under the new scheme is 12 cents per kWh (not indexed).

- **Offshore Wind Energy:** has a reference price of 14 cents per kWh (not indexed).

- **Ocean Energy:** is encouraged through a rate of 22 cents per kWh under the updated scheme (not indexed).

Since the scheme was introduced, REFIT has allowed for the funding of a significant number of generation projects. It is hoped that the expansion of the scheme to include, what until recently were seen as, 'emergent' technologies, will result in similar levels of commercialisation for these technologies. As with the original REFIT scheme, EU approval will be required in respect of the State Aid component of the scheme.

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

Renewable energy based 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. Any person may apply to EirGrid for connection to the transmission system and to ESB Networks Limited for connection to the distribution system, provided that if the person is not an eligible customer or does not hold a licence or authorisation, any offer must be subject to the person becoming an eligible customer or obtaining a licence or authorisation.

The CER may issue directions to the Relevant System Operator specifying the terms of connection offers from time to time. In

particular, 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 licence or authorisation; or where the applicant does not undertake to be bound by the terms of the grid code.

The holder of a licence 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 licence or authorisation.

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 processing of applications for connection of conventional generation was initially put on hold pending the processing of approximately 1,300MW of renewable energy, in accordance with a CER Direction of June 2006. It is understood that at one point in recent years there was over 6,000MW of non-renewable generator and interconnector applicants seeking to connect to the Irish electricity network. The CER has indicated that 3,400MW is the proposed maximum size of conventional capacity to be installed on the system to 2025 and is implementing a "small steps to 2025" approach as part of the Gate 3 process. Under this approach only some of the required 3,400 MW will receive a connection offer from the Relevant System Operator. We can advise further on the procedures for making connection applications, connection charges and transmission use of system charges on request.

In 2009, the CER published a Decision Paper[5] 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 includes 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

[5] CER/09/099

- Ocean
- Wave
- Solar
- Geothermal
- Experimental/Emerging Technologies[6]

Until this change all renewable generators (<500kW) were 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 5 MW) 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 condsider these on a case-by-case basis.

9. 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.

10. 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 5. In addition, the Irish government has also introduced a number of measures to encourage investment in renewable energy including:

a) 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

b) 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

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

In 2009 renewable energy sources made up 12% of the total generation of electricity. Despite an increase in wind's installed capacity, there was a decline in both wind and hydro-power generation in 2010 compared with 2009 (where renewable energy sources had a 14% share in total electricity generation[7]). This was due to wind speeds and rainfall in 2010 being below normal across the island.[8]

6 To be assessed on a case by case basis.

7 This was broken down into 11% Wind; 2.6% Hydro; 0.6% Biomass and >0% Photovoltaic (CER/10/140)

8 Available at *"http://www.met.ie/climate/monthly_summarys/year10sum.pdf"*.

Figure 1: All Island Fuel Mix 2010[9]

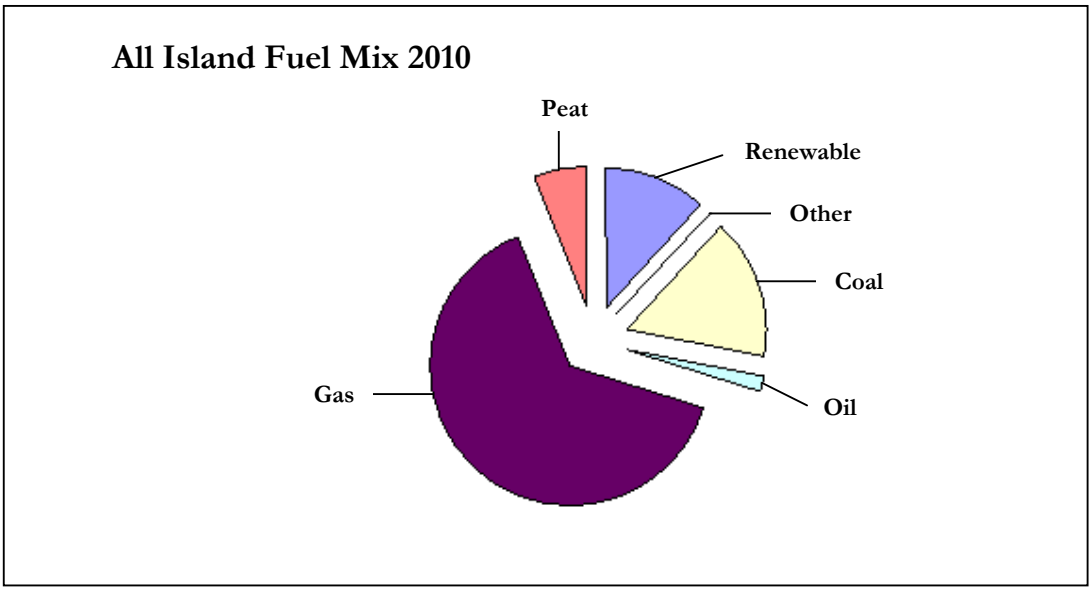
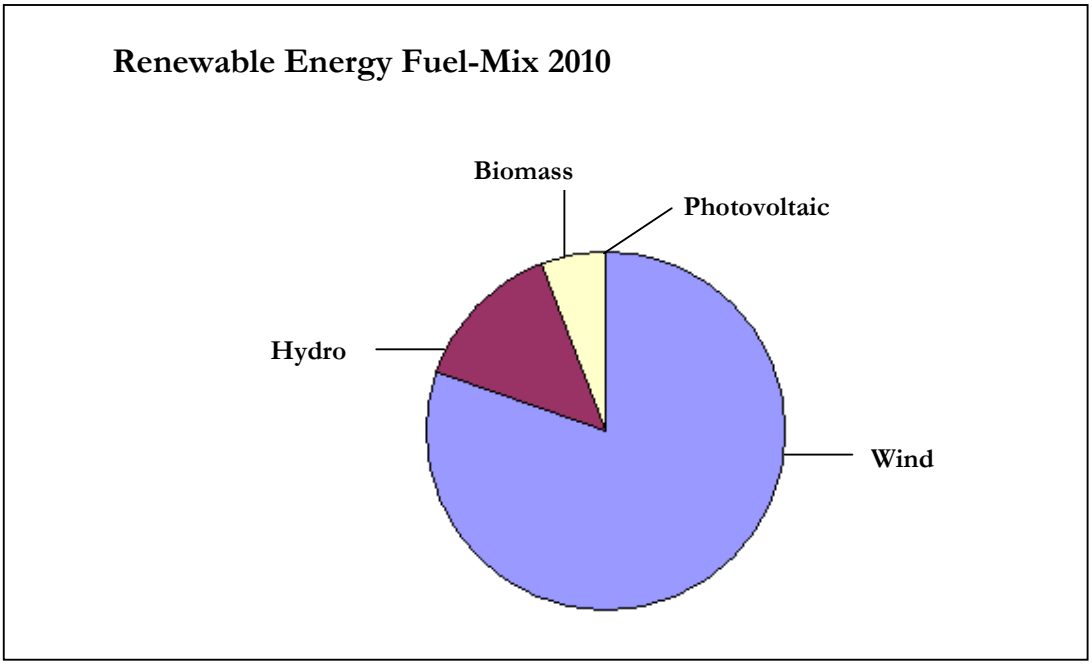


Figure 2. Breakdown of Renewable Energy Fuel-Mix 2010[10]



9 Figures taken from CER/11/129.

10 Figures taken from CER/11/129.

ARTHUR COX	
Alex McLean Earlsfort Centre, Earlsfort Terrace Dublin 2, Ireland T +353 (0)1 618 0546 F +353 (0)1 616 3826 E alex.mclean@arthurcox.com	**Sinéad Cantillon** Earlsfort Centre, Earlsfort Terrace Dublin 2, Ireland T +353 1618 0656 F +353 (0)1 616 0618 E sinead.cantillon@arthurcox.com

Italy

Cristina Martorana
Umberto Penco Salvi

CLIFFORD CHANCE

GENERAL

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

As many other countries globally, Italy has been engaged in political debates, scientific research and economical analysis in light of the dwindling supply of fossil energy sources and the consequent need to use non-renewable energy sources ("RES"), such as wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.

The production of energy from the "cleaner" RES has been receiving broadening support from public opinion and the community at large, currently eager to reduce Italy's reliance on foreign oil, to improve the quality of life in large cities, to reduce air pollution, to encourage scientific research and technological progress, as well as to create business and employment opportunities.

This broad public support, together with a favourable incentive policy, has attracted massive investments in the recent years. According to the 2010 report on renewable energy investments, published by the Pew Charitable Trust, Italy occupies the fourth place in the world for the amount of private investments attracted in the field of renewable energy, with a total of €10.45 Billions, mainly divided between solar photovoltaic (6.47 Billions) and wind power (3.38 Billions). The growth, in comparison with year 2009, is equal to 124%.

As explained below, the incentives for renewable energy in Italy have been significantly reduced in 2011; nevertheless, substantial investment opportunities seem to arise in the renewable sector, particularly after the referendum that was held in June 2011 and that led to the definitive stop of the nuclear program proposed by the Italian Government, with the abrogation of all the nuclear provisions already implemented. As a consequence of this stop, the quota of the energy mix theoretically assigned to nuclear energy for year 2020 (24%) will have to be covered by other sources and, particularly, by renewables.

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

In Italy, the definition of renewable energy is set forth in Article 2, paragraph 1, of Legislative Decree No. 387 of 29 December 2003 ("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.

Under Article 2, paragraph 1(a) of LD 387/2003, RES means renewable non-fossil energy sources (wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases). In particular,

biomass shall mean 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.

Furthermore, LD 387/2003, Article 2, paragraph 1(f), defines electricity produced from RES as (i) the electricity produced by plants that are powered exclusively by RES, and (ii) the portion of electricity produced from RES in hybrid plants that also use conventional energy sources, and including the renewable electricity used for filling storage systems, but excluding electricity produced as a result of storage systems.

Finally, LD 387/2003 sets forth the general national principle that the building plants powered by RES, and all the related infrastructures required for the operation of these plants, constitute works in the public interest, are urgent and cannot be postponed.

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

At the national level, the renewable energy sector is mainly regulated by "dedicated" laws, i.e. laws specifically aimed at governing the energy sector, which in most cases implement European Union Directives. Other laws, and especially the budget law, however, may contain provisions that affect the energy sector.

At the national level, the renewable energy sector is also governed by legislative decrees and ministerial decrees, as well as by the resolutions of the specific regulatory bodies, such as the Italian Regulatory Authority for Electricity and Gas (hereinafter, the "AEEG"), which have the force of law and are generally the only legislative provisions to address most technical details and procedures.

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;

- LD 387/2003, implementing Directive 2001/77/EC 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. However, the changeover was gradual. The legislative reform underwent significant changes in the five years following its entry into force in order to guarantee the continuity of Italy's electricity systems and to secure the national electricity supply without interruptions in service;

- 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 production of electricity from RES;

- Ministerial Decree dated 21 December 2007, approving the procedures for qualifying plants using RES, hydrogen, and fuel cells, in the context of the system of the so-called "Green Certificates" to be implemented;

- Ministerial Decree 19 February 2007 ("MD 19 February 2007"), applicable until 31 December 2010, approving the criteria and procedures for supporting the production of electricity by photovoltaic conversion of the solar source;

- Ministerial Decree of 11 April 2008 ("MD 11/04/2008"), approving the criteria and procedures for supporting production of electricity from the solar source through thermodynamic cycles;

- Ministerial Decree dated 18 December 2008 ("MD 18/12/2008"), approving the criteria and procedures for supporting electricity generation from RES;

- Ministerial Decree 6 August 2010 ("MD 5 August 2010"), applicable from 1 January 2011 to 31 May 2011, approving the criteria and procedures for supporting the production of electricity by photovoltaic conversion of the solar source;

- Law 13 August 2010, No. 129 (the so-called "Salva-Alcoa provision"), which implemented Law Decree 8 July 2010, No. 105 containing urgent provisions for the energy sector.

- Legislative Decree of 28 March 2011, No. 28 ("LD 28/2011"), implementing Directive 2009/28/EC on the promotion of electricity produced from RES in the internal electricity market;

- Ministerial Decree 5 May 2011 ("MD 5 May 2011"), applicable from 1 June 2011, approving the criteria and procedures for supporting production of electricity by photovoltaic conversion of the solar source;

- AEEG Resolution No. 280 of 6 November 2007, 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 technical-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;

- AEEG Resolution No. 123 of 16 September 2008, governing the disputes among the project owners and the grid operators;

- AEEG Resolution No. 103 of 28 July 2011, redefining the minimum guaranteed prices.

Energy regulation has 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 authorisation procedure for the construction and operation of plants fuelled by RES and (ii) the authorisation 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.

For example, any regional legislation governing the authorisation procedure for the construction and operation of RES plants must be consistent with the provisions of LD 387/2003. Under LD 387/2003, projects for the construction of RES plants with a forecast installed capacity exceeding determined threshold[1] must obtain an

[1] The thresholds depend upon the type of RES, as follows: Wind 60 kW; Photovoltaic 20 kW; Hydro 100 kW; Biomass 200 kW, Biogas 250 kW.

authorisation named "*autorizzazione unica*" (i.e., the "Single Authorisation"), while projects for the construction of RES plants with a forecast installed capacity not exceeding the thresholds benefit from a simplified authorisation procedure, known as "*denuncia di inizio attività*" (i.e., the "DIA Procedure").

Regional laws (like, for example, Puglia Regional Law No. 31/2008) that have modified the national threshold, allowing RES plant with a capacity exceeding the national threshold to benefit from the simplified procedure, have been declared unconstitutional by the Constitutional Court, on the grounds that they are in conflict with the national legislation.

Recently, LD 28/2011 has finally granted to the Regions and Autonomous Provinces the right to allow plants with a capacity of up to 1MW to be authorised by way of a new simplified authorisation procedure, which is very similar to the well known DIA procedure used up to now. However, this is less than the industry expected, given that Law No. 96/2010 (i.e. the parliamentary law of delegation – *legge delega*) required the Italian government to mandate that the 1MW threshold for the applicability of the simplified authorisation procedure would be generally valid on a national scale, and not left to the discretion of each Region/Autonomous Provinces.

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

The principal regulatory bodies in the renewable energy sector are the AEEG, the Gestore dei Servizi Energetici S.p.A (the "GSE"), and the Gestore dei Mercati Energetici S.p.A. (the "GME").

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. Its mission includes defining and maintaining a reliable and transparent tariff system, reconciling the economic goals of operators with general social objectives, and promoting environmental protection and the efficient use of resources.

The AEEG also provides advisory and reporting service, setting forth observations and recommendations to the Government and to the Parliament on matters of energy. It plays an active part in creating a standardised system of energy sector regulation in the European Union and in integrating the national electricity and gas markets into a single European market. A founder member of the Council of European Energy Regulators (CEER), the AEEG also takes part in the European Regulators Group for Electricity (ERGEG). The AEEG also chairs the Mediterranean Working Group on Electricity and Natural Gas Regulation (MEDREG), a body established to promote the integration of the energy markets in the Mediterranean area.

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 sole shareholder of the GSE is the Ministry of Economy and Finance, which gives guidance on the activity of the GSE in consultation with the Ministry of Economic Development. The GSE has gained national and global recognition as a leading player in the implementation of Italian energy policies, thanks to its growing commitment to promoting RES, by participating in international seminars, workshops and

organisations. To date, the GSE has played an active role within the European Association of Issuing Bodies (AIB), the Observatoire Méditerranéen de l'Energie (OME), and the International Energy Agency (IEA).

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 organising and economically managing the Italian Electricity Market, in accordance with the principles of neutrality, transparency, objectivity and competition between producers, and of economically managing adequate available reserves. As part of the organisation and economic management of the Electricity Market, the GME is also vested with organising the trading of, and the market for Green Certificates (i.e., certificates giving evidence of electricity generation from RES, hereinafter "**GCs**", see point 6), Energy Efficiency Certificates (the so-called "White Certificates", giving evidence of the implementation of energy-saving policies) and Emissions Allowances or Units. Moreover, the GME also manages the Forward Electricity Account Trading Platform (PCE) for registration of forward electricity purchase/sale contracts that have been stipulated off the market.

INCENTIVES

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

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 the, more common, case where the land is classified for agricultural use, the sale is subject to registration tax at the rate of 15%, plus cadastral taxes at the aggregate rate of 3%. Special reduced rates apply in case of sale by farmers. In the case of a transfer of non-agricultural land, the transaction is subject to VAT at the ordinary rate (currently, 20%).

Value added tax ("VAT") on the purchase and construction of plants fuelled by RES is generally applied at a reduced 10% rate, rather than at the ordinary 20% rate. VAT is not applicable on the special public subsidies (e.g., *feed-in tariffs*, see point 6). VAT on purchase of GCs is applied at the ordinary 20% rate.

The special public subsidies are fully subject to national and regional taxes on corporate income, at the aggregate 31.4% rate, with a 4% withholding tax.

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

The electricity produced from RES can be sold on the market through transactions freely negotiated, and there are also regulatory electric power purchase obligations.

Sale of the renewable energy on the electric power exchange

Energy may be sold on the market through privately negotiated agreements or on the electric power exchange.

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.

The price of electricity on the exchange is determined by open trading within the market.

The summary figures published by the GME show that in 2010, the average purchase price was 64.12 Euro/MWh.

Regulatory withdrawal of energy ("ritiro dedicato")

Italian legislation grants to producers of electricity produced (i) by intermittent sources of energy or (ii) at power plants of less than 10 MW, the option to sell the electricity produced pursuant to the mandatory purchase regime instead of selling the energy on the market.

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.

Under the mandatory purchase regime, all the energy produced by a specific plant, net of any energy used for in-plant consumption, must be withdrawn and purchased by the GSE 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 producer. Such agreement, which 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.

The energy produced by a plant that has opted for mandatory purchase regime is measured by specific technical equipment ("meters") to be installed by the producer, and can be measured only by the producer or by the competent energy grid operator.

Measurement of the energy produced by the plant must be submitted to the GSE by the 15th day of the month following injection into the system, to allow the GSE to calculate the prices to be paid to the producer for the purchase of energy. The invoices of the payments due for mandatory purchase of energy are issued on a monthly basis.

Plants fuelled by RES with a capacity of up to 1 MW can choose between two different pricing systems under the mandatory purchase regime: the hourly zone price regime, and the minimum guaranteed price regime (please see below). By 31 December of each year, the producer can choose the pricing regime to be applied for the following calendar year.

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

The energy withdrawn and purchased by the GSE can be paid to the producer at the "hourly zone price" resulting from the open trading on the electricity exchange. The producer, therefore, receives from the GSE the same price that he would have been earned in case of sale of the energy on the electric power exchange.

As an alternative to the hourly zone price, producers of electricity at plants fuelled by RES with a capacity of up to 1 MW can choose to sell energy to the GSE at minimum guaranteed prices. These minimum guaranteed prices are updated on annual basis by the AEEG in accordance with the ISTAT index.

The producer may opt to receive minimum guaranteed prices by the GSE only for the first 2 GW of energy produced by each plant per calendar year. The energy produced per calendar year over the threshold of 2 GW will be purchased by the GSE at the hourly zone price.

According to AEEG Resolution No. 280/2007, the minimum guaranteed prices for 2010 are:

- 101.8 Euro/MWh for the first 500,000.00 kWh produced per year;
- 85.8 Euro/MWh for production from 500,001.00 kWh to 1,000,000.00 kWh per year;
- 75.0 Euro/MWh for production from 1,000,001 kWh to 2,000,000.00 kWh per year.

According to AEEG Resolution No. 280/2007, the minimum guaranteed prices for 2011 are:

- 103.4 Euro/MWh for the first 500,000.00 kWh produced per year;
- 87.2 Euro/MWh for production from 500,001.00 kWh to 1,000,000.00 kWh per year;
- 76.2 Euro/MWh for production from 1,000,001 kWh to 2,000,000.00 kWh per year.

With Resolution of 28 July 2011, No. 103, the AEEG has defined new thresholds, differentiated by source, and new price levels, applicable from 2012. As a consequence, the minimum guaranteed prices for 2012 will be as follows:

Source	Annual production of electricity	Guaranteed minimum price[2]
Biogas, biomass	Up to 2,000,000 kWh	113.0
Landfill gas	Up to 2,000,000 kWh	76.2
Wind	Up to 2,000,000 kWh	76.2
Photovoltaic	Up to 3,750 kWh	100.0
	3,750 kWh to 25,000 kWh	90.0
	From 25,000 kWh to 2,000,000 kWh	76.2
Geothermal	Up to 2,000,000 kWh	76.2
Hydroelectric	Up to 250,000 kWh	150.0
	From 250,000 kWh to 500,000 kWh	95.0
	From 500,000 kWh to 1,000,000 kWh	82.0
	From 1,000,000 kWh to 2,000,000 kWh	76.2

[2] Prices are updated according to the annual variation of the consumer price index, as registered by ISTAT.

If the producer and the GSE enter into agreements to govern the commercial and technical conditions of the mandatory purchase of energy after 1 January of any calendar year, then the tranches of energy production in relation to which the minimum guaranteed prices are applied shall be reduced proportionally, on a X/365 days basis.

8. Do the 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, in compliance with the guidelines set forth by the AEEG. Interconnections are currently governed by AEEG Resolution No. 99/08. Starting from 1 January 2009, AEEG Resolution No. 99/08 replaces the resolutions formerly issued by the AEEG (including the AEEG Resolution No. 281/05 on the interconnections with a voltage above 1 kV).

In case of delays, the investor 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 occurred in the interconnection procedure, without prejudice to compensation for any greater damages that may be suffered.

Notwithstanding the above, it is essential to take into account that the boom of the renewable energy sector in Italy and, as a consequence, the fact that a very large number of applications for authorisation to construct and operate RES plants have been filed, may lead to circumstances where the existent power grid is unable to sustain the connection of all the authorised plants. Although Italy is investing in order to increase the capacity of the grid, many Regions do not authorise the construction of a plant if the connection of such plant to the power grid cannot be guaranteed.

Moreover, under LD 79/1999, energy produced by renewable energy plants, has dispatch priority. This means that the transmission grid operator has to 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. As specified by the AEEG, such restrictions/interruptions mainly affect energy plants located in the southern Italy (especially, in Sardegna and Sicilia).

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

Italian law, as of today, does not provide for any incentives for local manufacturing of equipment or materials used in the construction of renewable energy plants. Furthermore, it is possible to assume that if a regional law provided for this sort of incentives, it would probably be declared unconstitutional, because in violation of the principle of non-discrimination set forth by Article 3 of the Italian Constitution.

With respect to photovoltaic energy, MD 5 May 2011 sets out a special bonus, equal a 10% increase of the incentive tariff, for the plants in relation to which the investment costs (excluding work) are attributable, for at least 60%, to productions carried out within the EU.

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

Green Certificates

GCs, also known as Renewable Energy Certificates (RECs) are certificates giving evidence of the use of RES for electricity generation. They provide a benefit to the producer, in that they may be traded separately from the underlying electricity at the national and international level.

The plants that the GSE has qualified as RES-E plants ("IAFR") receive a number of GCs (each worth 1 MWh) equal to the product of their supportable net electricity generation multiplied by a variable factor, depending on the particular type of RES used to fuel the plant, as shown in the table below:

RES	Factor
Wind (on shore) more than 200 kW	1.00
Wind (off-shore)	1.50
Geothermal	0.90
Wave/tidal	1.80
Hydro	1.00
Biomasses	1.30
Biogases and biomasses produced by agricultural or breeding activities or within 70 km from the relevant plant	1.80
Sewage treatment plant gas and biogases	0.80

Under art. 10, para. 1 of MD 18/12/2008, IAFR-qualified plants are eligible for GCs for:

i) 15 years – only for supported RES-E generation in plants (including hybrid) that have been commissioned after 31 December 2007;

ii) 15 years – for electricity generation in thermal plants that have been commissioned before 1 April 1999 and have started operating as hybrid plants after 31 December 2007;

iii) 12 years – only for supported RES-E generation in plants that have been commissioned on or before 31 December 2007;

iv) 12 years – for electricity generation in thermal plants which have been commissioned before 1 April 1999 and have started operating as hybrid plants before 31 December 2007;

v) 8 years – only for supported non-RES-E generation in high-efficient plants combined with district heating;

vi) 8 years – for supported non-RES-E generation in plants (including hybrid): (i) using non-biodegradable waste; (ii) commissioned on or before 31 December 2006; and (iii) eligible for GCs under the legislation applicable until 31 December 2006.

If the plants mentioned in subparagraphs (iii) and (iv) above are fed by biomass under supply-line agreements, they will be eligible for GCs for another 4 years. GCs will only cover 60% of their supportable electricity generation in each of these additional 4 years.

If the plants mentioned in subparagraph (v) above have been commissioned after 14 February 2004 and before 1 January 2007 and are fuelled by non-biodegradable waste, they will be eligible for GCs for another 4 years. GCs will cover 60% of their supportable electricity generation in each of these additional 4 years.

GCs 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 capitalisation.

Article 25 of LD 28/2011 provides for the complete abolition of the green certificates scheme. From 2013, in fact, the proportion of electricity that must be generated from renewable sources (or covered by green certificates) pursuant to article 11 of LD 79/1999 will be gradually reduced on a straight-line basis, from its 2012 percentage to zero by 2015. The GSE will be obliged to purchase the unsold certificates each year at a price that is 78 per cent of their value as determined under article 2 paragraph 148 of Budget Law 2008 (i.e., the selling price of certificates put onto the market by the GSE, which is the difference between €180/MWh and the average annual price of sale for electrical power as determined by the AEEG in relation to the previous calendar year).

After 31 December 2012, only two incentive mechanisms will be available, for all renewable power plants. Both are based on the same fundamental principles: (i) a fair compensation for investments made, and operational costs; and (ii) ongoing financial support over the whole life of the plant. Projects generating less than 5 MW will benefit from a predefined incentive tariff, varying on the basis of the power source used and the plant's capacity. Power plants with a capacity of more than 5 MW will benefit from an incentive awarded through descending-price auctions, which will be managed by the GSE.

The Decree states that secondary legislation in the form of ministerial decrees will provide detailed sets of rules for these incentive systems, which will reflect these fundamental principles, within six months of the Decree coming into force. In financial terms, funding for the incentives will come from the A3 component of the tariff, which is ultimately paid by final customers.

The specific terms upon which the transition will take place from the current incentive schemes to the new schemes will be set out in subsequent ministerial decrees. LD 28/2011 makes clear that all plants currently receiving green certificates will be migrated to the new fixed-incentive scheme, irrespective of their capacity, as means of making returns upon investment consistent.

All-inclusive feed-in tariff

The all-inclusive feed-in tariff (i.e. including the support and the revenue from the sale of electricity) is applied, at the request of the operator, to the net electricity generated and concurrently injected into the grid. To be eligible for the all-inclusive tariff, plants must fulfil the following requirements: (i) commissioning after 31 December 2007; (ii) yearly average nominal capacity not exceeding 1 MW; and, (iii) for wind farms, electrical capacity not exceeding 0.2 MW.

To benefit from the support, producers must ask the GSE to qualify their plants as IAFR plants. Eligible plants include: (i) new, upgraded/repowered, totally/partially renovated and reactivated plants that have been commissioned after 1 April 1999; and (ii) co-firing plants that have been commissioned before 1 April 1999 and have operated as hybrid plants since 1 April 1999.

The all-inclusive feed-in tariff may be revised every three years by a Decree of the Minister of Economic Development, taking into account the need for ensuring an adequate remuneration of the investment in RES-E generation.

The right of option between GCs and the fixed all-inclusive tariff is exercised upon submitting the application for the IAFR qualification to GSE. Before the end of the support period, a single transfer is allowed from one support scheme to the other; in this

case, the duration of the period of eligibility for the new support scheme is reduced by the period of eligibility that has already elapsed under the previous scheme.

Net metering ("scambio sul posto")

Under the net metering service, producers/users may feed into the grid the electricity that they generate on site but do not consume immediately and take in from the grid part or all of the electricity that they need at a different time.

On 1 January 2009, the GSE was appointed as the body in charge of granting the net metering contribution ("*contributo in conto scambio*"). The rules governing the determination of this contribution are laid down in the TISP.

The application for the contribution may be submitted by parties operating or owning one or more of the following plants:

- using RES and having a capacity of up to 20 kW (if commissioned before 31 December 2007);
- using RES and having a capacity of up to 200 kW (if commissioned after 31 December 2007);
- high-efficiency plants having a capacity of up to 200 kW.

The service provided by the GSE entitles the applicant to get a yearly net metering contribution that is expressed in euro. This contribution refunds the producer/user for part of the costs incurred for withdrawing electricity from the grid.

Photovoltaic Incentive Scheme

Photovoltaic plants in Italy benefit from a dedicated incentive system, known as Conto Energia (the "Photovoltaic Incentive Scheme" or the "Conto Energia"), based on special incentives ("Incentives")

MD 6 August 2010, governing the Conto Energia available for photovoltaic plants that started operations after 31 December 2010 (the so called "Third Conto Energia"), was published in the Official Gazette, and entered into force on 25 August 2010 ("MD 6 August 2010"). MD 6 August 2010 has been implemented by AEEG Resolution ARG/elt 181/10.

Photovoltaic plants are eligible for Conto Energia only if they have an installed capacity of 1 kW or more and if they meet all the technical requirements and specifications listed in Annex 1 to MD 6 August 2010.

The amount of the incentives varies on the basis of (i) the installed capacity of the plant, and (ii) the circumstance that the plant is installed on a building or on the ground.

The table below shows the incentives applicable to photovoltaic plants that have started or will start operations between 1 January 2011 and 1 June 2011.

	From 31 December 2010 to 30 April 2011		From 30 April 2011 to 31 May 2011	
Capacity [kW]	**Plants installed on buildings [Euro/kWh]**	**Other plants [Euro/kWh]**	**Plants installed on buildings [Euro/kWh]**	**Other plants [Euro/kWh]**
1≤P≤3	0,402	0,362	0,391	0,347
3≤P≤20	0,377	0,339	0,360	0,322
20≤P≤200	0,358	0,321	0,341	0,309
200≤P≤ 1.000	0,355	0,314	0,335	0,303
1.000≤P≤5.000	0,351	0,313	0,327	0,289
P>5.000	0,333	0,297	0,311	0,275

The current regulations specify that the incentives are applicable for a period of twenty-years from the date in which the photovoltaic plant starts operations, period through which they shall remain constant and unvaried.

Photovoltaic plants are not eligible to receive the incentives if they have benefited from European, national, regional or local public aids for an amount in excess of 20% of the total investment costs for the construction of the photovoltaic plant.

Under MD 6 August 2010, the above-mentioned incentives will be available up to an aggregate national cap of 3,000 MW of installed capacity. Once this level is reached, new photovoltaic plants will be entitled to benefit from Conto Energia only if they started operations within 14 months after the date on which the 3,000 MW level is reached (24 months for photovoltaic plants operated by public entities).

LD 28/2011 established that the incentives laid down by the Third Conto Energia would apply only to photovoltaic plants starting operations no later than 31 May 2011.

Photovoltaic plants starting operations after 31 May 2011, on the other hand, are eligible to receive the incentives set forth by MD 5 May 2011 (i.e. the "Fourth Conto Energia").

LD 28/2011 also introduces new restrictions for the admission to the incentive tariffs of photovoltaic plants on lands zoned for agricultural activities. Under LD 28/2011, in fact, the photovoltaic plants installed on agricultural areas must met the following criteria for the admission to the incentive tariffs:

- the installed capacity of the plant must not exceed 1 MW;

- the plant does not occupy more than 10% of the total area available to the applicant, and

- in case two or more plants are to be installed on plots of land owned by the same person, the plants must be realised at a distance of not less than two kilometres.

These restrictions, however, do not apply to plants installed over agricultural lands that are abandoned since at least five years. Also, these restrictions do not apply to (a) photovoltaic plants already authorised as at the date when LD 28/2011 has entered into force (i.e., 29 March 2011) and (b) photovoltaic plants for which an application for authorisation has been filed before 1 January 2011, provided that in both cases the plants start operations within one year from the date when the LD 28/2011 enters into force (i.e., 29 March 2012).

Finally, LD 28/2011 provides that persons who submitted an application for admission to incentives that was accompanied by any false documents, statements or information are prohibited from gaining access to any such incentives under Italian law for ten years from the ascertainment of such breaches. The prohibition applies to the natural person or company that submitted the application and also to: (a) the legal representative of the company, where a company submitted the application; (b) the person in charge of the plant; (c) the technical director; (d) the partners of general partnerships (*società in nome collettivo*); (e) the general partners of limited partnerships (*società in accomandita semplice*); and (f) directors with powers to represent their firm, with regard to all other kinds of firms and consortia.

As anticipated, photovoltaic plants starting operations after 31 May 2011 are eligible to receive the incentives set forth by MD 5 May 2011, containing the Fourth Conto Energia, which applies to photovoltaic plants that start operations between 1 June 2011 and 31 December 2016 and sets a national target for installed capacity of 23,000 MW.

MD 5 May 2011 retains the distinction between the three types of photovoltaic plants already identified under the Third Conto Energia (i.e., photovoltaic plants, integrated photovoltaic plants with innovative features, and solar concentration plants); in addition, MD 5 May 2011 creates a new distinction, between small plants and large plants. Small plants include: (i) integrated plants with a capacity up to 1000 kW, and (ii) non integrated plants with a capacity up to 200 kW which sale their electricity trough the net-metering service (*scambio sul posto*). Plants with capacity in excess of these thresholds are considered large plants.

In addition, MD 5 May 2011 provides an exception whereby certain plants installed in areas or within buildings owned by a public administration are considered small plants irrespective of their capacity. Under a literal interpretation of MD 5 May 2011, any plant installed within public areas or buildings should be considered small, even if operated by a private entity. However, using a stricter interpretation, the provision should be read to mean that a plant falls within the exception only if it is installed within public areas/building and operated by a public entity.

As better specified below, specific transitional rules will apply up to 31 December 2012 (the period including the second semester of 2011 and 2012 is defined the "Transitional Period"). Moreover, the procedures for admission to the Fourth Conto Energia incentive system during the Transitional Period are different depending on whether a plant is categorised as a small plant or as a large plant. Small plants may apply directly for admission to the incentive system, if eligible. Large plants on the other

hand will need to first become Registered Plants (as defined below), which is a prerequisite for admission to Fourth Conto Energia, and to have a sufficiently high Priority Ranking (as defined below) to be admitted before the incentive cap for the period is reached.

Under MD 5 May 2011, a photovoltaic plant is eligible to apply for the incentives provided that:

- its capacity is not less than 1 kW;
- it is constructed in accordance with the technical requirements set out in Annex 1 of the MD 5 May 2011 ;
- it is realised using new components or components never before installed in any plant;
- it is connected to the power grid through an autonomous connection point not shared with any other plant;
- if it is a free-standing plant installed in agricultural areas, it complies with the requirements of LD 28/2011; and
- it complies with any other applicable requirement introduced by LD 28/2011.

The plants that are admitted to benefit from the Fourth Conto Energia receive a fixed incentive for twenty years from their commissioning date. Each eligible plant is awarded the incentive applicable under MD 5 May 2011 on the plant's commissioning date. Under MD 5 May 2011, "commissioning date" means the date when the following conditions are concurrently met: (i) the plant is connected to the power grid, (ii) the meters for calculating the electricity produced and injected into the power grid are installed, and (iii) all the requirements concerning the connection to the power grid have been duly fulfilled.

Annex 5 of MD 5 May 2011 specifies the amount of the incentives that will be in turn applicable to photovoltaic plants on the basis of their commissioning date, from the second semester of 2011 through 2016. For each semester, the incentive levels vary depending on the following criteria: (i) the type of plant (photovoltaic plants/plants with innovative features/solar concentration plants), (ii) the category of the plant (integrated/not integrated), and (iii) the installed capacity of the plant.

With regard to the capacity criterion mentioned at (iii) above, MD 5 May 2011 identifies the following capacity brackets:

- $\leq P \leq 3$
- $< P \leq 20$
- $20 < P \leq 200$
- $200 < P \leq 1000$
- $1000 < P \leq 5000$
- $P > 5000$,

where "P" means the capacity of the plant measured in kW.

The rationale behind the regulation is to promote small-sized integrated plants.

The amount of the applicable incentive can be increased (i) by 5%, for plants installed within industrial areas, quarries, mines, dumps, polluted sites, and areas relating to dumps and polluted sites; (ii) by 5 eurocent per kW for integrated plants installed to replace asbestos and eternity roofing, or (iii) by 10% for plants whose investment costs are represented, for at least 60%, by the cost of products realised within the European Union. The definition of "investment costs" includes all the costs (excluding employee costs) strictly necessary to

realise a photovoltaic plant in compliance with the good engineering and operating practices (*a regola d'arte*). These increases are not cumulative, and a plant can benefit only from one exclusively.

MD 5 May 2011 provides for the application of certain criteria when calculating the capacity of photovoltaic plants for the purpose of the applicable incentive, in an effort to prevent operators from partitioning a single photovoltaic plant to benefit from an incentive higher than that applicable to the plant considered as a whole. In fact, MD 5 May 2011 specifies that if two or more photovoltaic plants are realised by, or referable to, the same person, and are realised on the same parcel of land or on contiguous parcels of land, then all of such plants must be deemed as one single photovoltaic plant. MD 5 May 2011 also provides that, within 30 days from its entry into force, the GSE will have to issue additional rules and criteria to prevent photovoltaic plants from being partitioned for the purpose of receiving higher incentives.

MD 5 May 2011 limits the aggregate annual capacity of large plants eligible to access to the incentives under the Fourth Conto Energia during the Transitional Period. For each calendar semester of the Transitional Period, MD 5 May 2011 identifies the maximum amount that can be paid as incentives to large plants.

Incentives payable to small plants will not be restricted. Therefore, eligible small plants will be admitted to benefits under the Fourth Conto Energia without limit. This means that the caps will only apply to large plants.

The table below summarise the caps applicable under MD 5 May 2011 to photovoltaic plants categorised as large plants during the Transitional Period:

	2011	**2012**	
	2nd Semester	**1st Semester**	**2nd Semester**
Aggregate Incentive Cap (*millions of Euro*)	300	150	130
Target of installed capacity (*MW*)	1200	770	720

A specific exception is provided for plants to be admitted to the Fourth Conto Energia using funds allocated to the second semester of 2011. If the amount of the incentives to be paid to the plants that are commissioned by 31 August 2011 plus the amount of the incentives to be paid to the Registered Plants (as defined in Paragraph 7.6.7 below) for the second semester of 2011 is above the relevant semester cap (300 million of euro), then the amount exceeding the cap is funded using resources that are deducted from the cap allocated to the second semester of 2012 (130 million of euro).

MD 5 May 2011 sets forth an indicative budget in relation to each semester of the period 2013-2016.

Starting in 2013, the semester budget will not prevent admission to the Fourth Conto Energia to plants beyond each semester budget; instead, exceeding a semester budget

will result in a reduction of the incentive applicable in the following semester in accordance with a formula set forth in Annex 5 of MD 5 May 2011 .

The table below summarises the indicative budget applicable to photovoltaic plants in each semester of 2013 - 2016.

	2013		2014		2015		2016	
	1st Semester	2nd Semester	1st Semester	2nd Semester	1st Semester	2nd Semester	1st Semester	2nd Semester
Incentive Cap (*millions of Euro*)	240	240	200	200	155	155	86	86
Target of installed capacity (*MW*)	1115	1225	1130	1130	1140	1340	1040	1480

An application to seek admission to the Fourth Conto Energia must be filed with the GSE, within 15 days after the plant's commissioning date, along with the documents listed in Annex 3-C of MD 5 May 2011 . Failure to submit such application within this 15-day term will lead to loss of incentives in relation to the electricity produced from the commissioning date and up to the date of the application filed with the GSE.

In addition, the following provisions apply to large plants seeking admission to the Fourth Conto Energia, depending on whether their commissioning date is up to or after 31 August 2011.

Large plants commissioned during the Transitional Period (starting 1 September 2011 and up to 31 December 2012, inclusive), will be required to register to a national registry managed by the GSE; additionally, their admission to the Fourth Conto Energia will be conditional upon (i) having a "priority ranking" sufficiently high as to allow them to fall within the applicable incentive cap for the semester during which application is sought, and (ii) duly and timely filing with the GSE of the documentation certifying the completion of the works.

The plants that have applied for the registration are recorded in the register relating to the relevant semester on the basis of certain criteria (mainly chronological) which define their priority ranking, up to the applicable cap. To prepare this list, the GSE calculates the indicative annual cost of the incentives payable in relation to each plant. Such indicative annual cost is determined taking into account: (i) the amount of the applicable tariff, in case of Commissioned Plants, (ii) the amount of the tariff that should be applicable on the basis of the prospected commissioning date for the Registered Plants other than Commissioned Plants, and (iii) the annual mean productivity of the plant, as indicated in the technical sheet of the plant. The information under (iii) will be subject to verification to detect any non-realistic data.

The list of the plants that have obtained the registration for a semester (the "Registered Plants") and their priority ranking will be published by the GSE within 15 days from the end of each Registration Session. The status as Registered Plant cannot be transferred to third parties.

The GSE will also publish a list of the plants that have applied for the registration but cannot be enrolled in the register because the applicable cap has been already reached.

Large plants commissioned on or before 31 August 2011 are admitted to the Fourth Conto Energia directly (i.e., without the need to become Registered Plants), provided that – in accordance with the general rule - within 15 days from their commissioning date the documentation certifying the actual commissioning of the plant is sent to the GSE. However, on the basis of the foregoing, the prudent course of action would be to start the registration process for any large plant, so as to obtain a Priority Ranking in case the plant is commissioned after 31 August 2011. Should a Registered Plant instead be commissioned on or before 31 August 2011, it would be deleted from the register automatically by the GSE.

Except for any cancellation of Registered Plants commissioned by August 2011, the resources not spent in relation to a semester because of the forfeiture/waiver of the registration status by plants that had been originally recorded in the register relating to that semester, are allocated to the next semester.

If any Registered Plants are cancelled from the register, they will not be substituted by the plants with the immediately following Priority Ranking, except where a Registered Plant is cancelled from the register because it is commissioned by 31 August 2011.

Submission of the GSE of untrue documents and information or false declarations are punishable with the loss of the right to receive the incentive, the reimbursement of any incentive already obtained, and the prohibition from applying to any incentive system available to renewable energy plants for ten years from the date when the fact is ascertained.

The above sanctions apply: (i) to the natural or legal person that filed the application for the incentive, (ii) the legal representative who signed the application, (iii) the technical director of the plant, (iv) all the shareholders, in case of companies in the form of *società in nome collettivo*, (v) the unlimited/working shareholders, in case of companies in the form of *società in accomandita semplice*, and (vi) the directors who have the power to represent a company.

Thermodynamic Incentive Scheme

MD 11/04/2008 has introduced another incentive scheme dedicated to the thermodynamic solar source (the "Thermodynamic Incentive Scheme"). MD 11/04/2008 entered into force on 1 May 2008 and was implemented by the AEEG with Resolution No. 95/08.

For the purposes of the Thermodynamic Incentive Scheme, thermodynamic plants are thermoelectric plants in which heat is caught from the solar radiation and transformed into electricity at the end of a thermodynamic cycle. In case the plant is not fuelled solely by the solar radiation, the plant is classified as "hybrid" for the purposes of MD 11/04/2008, and is therefore eligible for the feed-in tariffs only in relation to the so-called "solar part".

Thermodynamic plants are generally made up of a solar collector (*captatore solare*), which receives the heat and transmits it, by means

of a heat transfer fluid, to the converter (*dispositivo di conversione in calore ad alta temperatura*) or the accumulation system (*sistema di accumulo*).

Thermodynamic plants can participate in the Thermodynamic Incentive Scheme if all of the conditions below are met:

- the plant must start / have started operations after 22 July 2008;
- the net production of electricity generated by the solar part ("SP") must be at least equal to the 15% of the total net production ("PNET");
- the plant must be equipped with an accumulation system having a nominal bunching capacity of at least 1.5 kWt for each $m^2$of cumulative surface;
- the cumulative surface must be at least 2500 m^2;
- the plant must not use any toxic substance as heat transfer fluid; and
- the plant must be connected to the power grid and must not share the connection point with any other plant.

The individual person/corporate body responsible for the construction and/or operation of the plant seeking eligibility to the Thermodynamic Incentive Scheme must comply with the requirements described above and follow the procedures laid down by Section 5 of AEEG Resolution No. 95/08, namely:

- the operator must file with the grid operator an application for the admission of a single thermodynamic plant to the incentives and another application for the connection to the power grid;
- the grid operator must communicate the connection point and carry out the connection works;
- once the plant is connected to the power grid, the operator must notify the completion of works to the GSE;
- within 60 days of the date the plant having made its first parallel, the operator must provide the GSE with the documentation listed in Annex I to MD 11/04/2008. Failure to comply with such deadline will prevent the operator from obtaining the incentives; and
- within 60 days of the receipt of the application mentioned at point (iv) above, the GSE informs the operator of the amount of the awarded Incentives.

Once the operator has been granted the incentives, it must comply with the obligations under AEEG Resolution No. 95/08 and, in particular, allow the GSE to carry out all the inspections and controls it may deem necessary.

The operators whose plants have been admitted to participate in the Thermodynamic Incentive Scheme receive, in addition to the market price or the regulatory withdrawal price paid by the GSE, an incentive. For hybrid plants, the amount of the incentive for the thermodynamic production varies according to the percentage of PNET that generated by sources other than solar thermodynamic ("non solar fraction", or "**FNS**"), so that the incentive decreases proportionally to an increase in FNS, as shown in the table below.

FNS	**Up to 0.15**	**Between 0.15 and 0.50**	**More than 0.50**
Incentive (€/kWh)	0.28	0.25	0.22

The operators perceive the incentives laid down by MD 11/04/2008 for a period of twenty-five years.

In particular, the thresholds listed in the table above apply exclusively to those plants which entered/will enter into operations between 22 July 2008 and 31 December 2012 and will be kept unchanged for the entire twenty-five year period For plants which will make their first parallel between 1 January 2013 and 31 December 2014, the above incentives will be reduced by 2% annually after 2012 and rounded to the third decimal place, without prejudice to the twenty-five years of duration of the incentive. Afterward 2014, the Ministry of Economic Development will issue one or more decrees every 2 years, setting out the new incentives for those plants which will enter into operations after 2014; in case of delay in the issuance of the decrees, the incentives scheduled for plants which will start operations in 2014 will continue to apply to plants which will make the first parallel after 2014 until the entry into force of said decrees.

According to Section 8 of AEEG Resolution No. 95/08, the GSE pays the incentive to the operators on a monthly basis.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

In October 2010, the GSE published the statistics on RES relating to year 2009.

The analysis completed by the GSE shows that, at the end of 2009:

- An aggregate RES capacity of 26.519 MW was installed nationwide, for an overall energy production of 69.330 GWh;
- The total number of RES plants reached 74.282;
- From 2008 to 2009, the installed RES capacity increased by 11.1%, while the RES production increased by about 19%;
- The contribution of renewable energy to the overall production was equal to 23.9%, as opposed to 18.2% of the previous year;
- the geographic distribution of renewable sources in Italy was the following:
  - The Region with the highest value of capacity installed was Lombardy, retaining 20.9% of the total, followed by Trentino Alto-Adige (12.1%) and Piemonte (9.9%);
  - In terms of production, the highest percentage was also retained by the Lombardy Region with 17.4% and by Trentino Alto-Adige with 14.6%;
  - As for the number of plants, Lombardy held the 15.2% of the total, Veneto the 9,6% and Emilia-Romagna 9.2%;

At the end of 2009, within the ranking of the EU15 countries[3] producing renewable energy, Italy held the fifth place, following Germany, Sweden, France and Spain.

[3] EU15 countries are: Luxembourg, Finland, Belgium, Greece, Sweden, Austria, Ireland, The Netherlands, Italy, France, Portugal, Denmark, the United Kingdom, Spain, and Germany.

CLIFFORD CHANCE	
Cristina Martorana Piazzetta M. Bossi 3, 20121 Milano Italy T +39 02 806 341 F +39 02 80634 200 E cristina.martorana@cliffordchance.com	**Umberto Penco Salvi** Piazzetta M. Bossi 3, 20121 Milano Italy T +39 02 806 341 F +39 02 80634 200 E umberto.pencosalvi@cliffordchance.com

Japan

Toshio Dokei
Yuko Tashiro

WHITE & CASE LLP

GENERAL

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

To ensure a stable and appropriate energy supply

In Japan, the energy self-sufficiency ratio[1] in 2008 was 7%, because of poor domestic natural resources. Around 93% of energy resources used for generating "primary energy" (including uranium for nuclear power) are imported from overseas.[2]

After the oil crises in 1973 and 1979, the Japanese government recognized the importance of improving energy conservation and reducing dependency on oil by promoting new energy sources that are not based on fossil fuels. The Japanese government enacted the Act concerning the Rational Use of Energy (Act No. 49 of 1979) (the "Energy Conservation Law") to promote technical development to improve energy efficiency. As a result of efforts by both the Japanese government and the private sector, Japan has improved its energy consumption efficiency by about 37% in the past thirty (30) years and has become the most efficient and advanced country in respect of energy efficiency in the world. However, the differences in energy efficiency between Japan and other major countries have slowly decreased in recent years.[3]

At the same time, the Japanese government adopted a policy to reduce oil dependence, including the enactment of the Act on the Promotion of Development and Introduction of Alternative Energy (Act No. 71 of 1980) (the "Promotion of Alternative Energy Law"). Although dependence on oil declined from 77% in 1973 to 41.9% in 2008 in respect of the primary energy supply, this percentage is still quite high in comparison with other countries. The total percentage dependence on fossil fuel energy, including oil, natural gas, LPG and coal, was around 83% in respect of the primary energy supply in 2008.[4]

In accordance with global economic development, especially new development in countries such as China and India, it is anticipated that demand for oil will continue to increase in the long term. However, natural fossil fuel resources, which are exploitable energy supply reserves, are limited. In addition, oil reserves are disproportionately located in the Middle East.[5] Since the Asian economic crisis in 1999, the price of crude oil remains high, and the natural resource market is not stable. The structure of the energy supply in Japan should be considered quite fragile. In order to seek a stable and appropriate energy supply, it is very important to promote the use of renewable energy, although energy conservation is also an effective measure.

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1 The "energy self-sufficiency ratio" refers to the ratio between domestic production and primary energy supply in Japan. Annual Report of Energy in Japan, 2010 (Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry of Japan).

2 For example: 99.6% of crude oil, 92.6% of natural gas and 99.3% of coal were imported from overseas in 2005.

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 2.1 times in 2007. Annual Report of Energy in Japan, 2008 (Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry of Japan) (hereinafter "Annual Report of Energy in 2008").

4 Annual Report of Energy in 2010.

5 Over 90% of crude oil imported into Japan is from the Middle East. Annual Report of Energy in 2008.

To reduce the environmental burden

The use of renewable energy is valuable not only for contributing to the improvement of the energy self-sufficiency ratio in Japan but also for reducing emissions of greenhouse gases to prevent global warming.

The issue of climate change is recognized to be one of greatest concern among worldwide environmental issues. Japan committed to reduce greenhouse gas emissions by 6% from 2008 to 2012, in comparison with the 1990 level under the Kyoto Protocol, which was adopted in 1997 and became effective in 2005.

The Japanese government proposed that, as a long-term target, the total amount of global greenhouse gas emissions should be reduced by half from the current level before 2050, with peak reductions to occur during the next 10 or 20 years. To achieve this target, the Japanese government believes that developed countries need to reduce their emissions by 70-80% of the current levels. Thus, the Cabinet decided that the amount of emissions in Japan would be reduced by 60-80% from the current level by 2050. The Cabinet also approved an action plan for a low-carbon society (the "Action Plan for Low-Carbon Society").[6] The Action Plan for Low-Carbon Society includes certain action plans: construction of a fair and effective global framework, Japan's cooperation to developing countries, innovative development of technologies, and implementation of existing advanced technologies, etc. This plan asserts that "zero-emission power generation", which is electricity generated from renewable energy and nuclear energy, must be enhanced by 40% in 2006 to 50% before 2020[7], because around 30% of greenhouse gases were emitted by the electricity sector in Japan. Master Plan of Energy which is adopted in June 2010 also asserts zero-emission power generation must be enhanced to 70% before 2030.[8] In addition, the Prime Minister announced that the Master Plan of Energy, which assumes 50% of electricity power will be generated by nuclear energy, would be changed for shifting renewable energy and realizing energy efficiency society, because of nuclear accident in Fukushima at the Earthquake in East Japan in May 2011.

The development and introduction of renewable energy is necessary and important to achieve Japan's target under the Kyoto Protocol and to realize a low-carbon society. Introducing renewable energy could also reduce other environmental burdens.

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

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) (the "Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers") 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 enforcement ordinance.[9]

The Enforcement Ordinance of the Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers (Ordinance No. 222, 27 August 2009) designates the resources of renewable energy as follows:[10]

6 The Cabinet approved the Action Plan for Low-Carbon Society at a meeting in July 2008.

7 The Action Plan for Low-Carbon Society was adopted in July 2008.

8 The Master Plan of Energy adopted in June 2010

9 Article 2(3) of the Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers.

10 Article 4 of the Enforcement Ordinance of the Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers.

- photovoltaic power;
- wind power;
- water power;
- geothermal heat;
- solar thermal power;
- heat in the atmosphere (except for (2))
- biomass (except for fossil fuels).

The bill of Act on Special Measures concerning Procurement of Renewable Energy by Operators of Electric Utilities ("Act on Special Measures concerning Renewable Energy") was submitted to the Parliament on 5 April 2011. This act will require any operators of electric utilities to purchase any electricity generated by "Renewable Energy" at the designated price in the designated period by the Minister of economy, trade and industry of Japan.

This act will define the resources of renewable energy as photovoltaic power, wind power, water power, geothermal heat and biomass and others to be designated by ordinance.

REGULATION

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

(1) the Act on Special Measures for the Promotion of New Energy Usage

Although technologies in relation to renewable energy have achieved levels sufficient for practical use, there are economic constraints to the current introduction of renewable energy.[11]

[11] The cost of renewable energy is higher than fossil fuel energy.

Renewable energy is still a small percentage (2.9% in 2008) of Japan's energy supply.[12] For introduction and dissemination of renewable energy, more progressive development of technologies is required. The Japanese government decided to promote diffusion of renewable energy at the Cabinet meeting in 1997[13] and enacted the Act on Special Measures for the Promotion of New Energy Usage (Act No. 37 of 1997) (the "Promotion of New Energy Law").

The Promotion of New Energy Law focuses on "New Energy," which is "renewable energy" generated from the sun, wind, biomass, geothermal heat, etc., and which is constantly replenished by processes derived from nature. Promotion is particularly essential to introduce energy to replace fossil fuels, because diffusion of renewable energy is currently insufficient, due mainly to economic constraints.[14] The Order for Enforcement of the Promotion of New Energy Law (ordinance No. 208, 20 June 1997) (Order for Enforcement of the Promotion New Energy Law) designated "new energy use, etc." as follows:[15]

- to produce fuel from 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);

[12] The Japanese government's target for the share of use of new energy in 2010 is 19,100,000kL (3.0%) under a decision of the Cabinet at the meeting held on 18 September 1998. The Japanese government's target for the share of renewable energy in primary energy supply in 2020 is 10% under a decision of the Cabinet at the meeting held on 12 March 2010.

[13] Decision of the Cabinet at a meeting held on 19 September 1997.

[14] Article 2 of the Promotion of New Energy Law.

[15] Article 1 of the Order of Enforcement of the Promotion of New Energy Law.

- to use biomass or fuel made from biomass to generate heat (excluding the items listed in item (iv);
- to use Solar thermal energy for heating water, heating and cooling space or other purposes;
- to use heat from sea water, river water or other water sources, utilizing refrigeration facilities;
- to use heat from snow or ice (excluding ice processed utilizing refrigeration equipment) for refrigeration, cooling space or other purposes;
- to use Biomass or fuel made from biomass to generate electric power;
- to use Geothermal energy to generate electric power (limited to electric power generation using ammonia-water, pentane or their liquids with a boiling point of below 100 degrees at atmospheric pressure);
- to use Wind energy to generate electric power;
- to use Hydraulic energy to generate electric power (limited to electric power generation using power generation facilities that are installed in a structure used for irrigation, water-utilization, sediment control or other purposes other than electric power generation, having output capacity of 1,000 kilowatts or less; and
- to generate electricity utilizing a solar cell.

The Promotion of New Energy Law and its related ordinances state the role of each sector, such as government, user of energy, supplier of energy, manufacturer or importer of facilities or equipment, and local government, to promote generally the introduction and development of new energy use as follows:[16]

The role of government:

- implementing measures for dissemination of new energy and measures for assistance in introduction for each local area;
- promoting measures to improve technologies for new energy, including reducing costs;
- establishing related programs and systems for smooth use of new energy;
- education; and
- promoting international cooperation in respect of new energy use, especially cooperation with developing countries.

The role of companies as users of new energy:

- making an effort to understand the features of new energy and to use new energy for consumption of necessary energy.

General electricity companies:

- making their best efforts to purchase electricity generated from new energy use and to consider stable connections with transmission lines and other related protection equipment, etc.

Heat suppliers:

- making their best efforts to purchase heat from new energy.

[16] Explanation of Policies for New Energy, New Energy Foundation (2009)

Gas operators:

- making their best efforts to diffuse co-generation by using natural gas and natural gas cars.

Manufacturers and importers of facilities or equipment for new energy use, including equipment for photovoltaic power generation, wind power generation and clean energy cars, etc.:

- making their best efforts positively to develop or improve technologies and consistently supply related facilities or equipment for use of new energy at reasonable cost.

(2) Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers

To ensure stable and appropriate energy supply by promoting usage of non-fossil fuel energy and inducing efficient usage of fossil fuel energy, the Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers requires Minister of Ministry of Economy, Trade and Industry of Japan ("METI") to stipulate (i) the basic principle concerning basic matters to be conducted by energy suppliers (ii) guidelines for determination of target and measures to achieve its target for each sector of energy suppliers for promoting usage of non-fossil energy and enhancing efficient usage of fuel energy.[17] In respect of renewable energy, the guidelines require (1) the general electricity suppliers to use the electricity generated from non-fossil energy over 50 % in their all output in 2020 and (2) oil manufacturers to produce the bio ethanol 0.5 million kl in 2017 by immingling ethanol into gasoline.

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

Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry of Japan ("METI") and Ministry of Environment ("MOE")

INCENTIVES

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

There is no general tax advantage given to renewable energy generation companies in Japan.[18] However, where small- or medium-size private business operators[19] introduce a new facility that is used for New Energy, 7% of costs can be deducted from the amount of corporate tax or the total introduction costs can be immediately amortized.[20]

The Japanese government grants subsidies to companies that introduce progressive facilities for new energy (prescribed as follows). The maximum value of the subsidy must be less than 1/3 of the total introduction costs of such new facility.

[17] Minister of METI provides as ministerial announcement (i) Basic Principle concerning basic matters to be conducted by energy suppliers for promoting usage of non-fossil energy and enhancing efficient usage of fuel energy (METI ministerial annoucement, 2010 No. 160) and guidelines for general electricity supplier, general gas supplier, oil manufacturer (METI ministerial annoucement, 2010 No. 278, 240, 241, 242 and 161).

[18] JPN70,000 per kW is given to residential photovoltaic systems that meet the requirements. For installation of residential photovoltaic systems, 10% of installation costs can be deducted from the income tax amount. A mortgage tax break also applies to new housing with residential loans.

[19] A small- or medium-size company means one whose capital amount is less than JPN100,000,000 or whose total number of employees is less than 1,000. The tax break does not apply to companies other than small- or medium-size companies, however total introduction costs of these companies can be immediately amortized.

[20] The facilities are announced by ministerial notification of the Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry of Japan.

- Photovoltaic power generation;
- Wind power generation;
- Using solar thermal power;
- Thermal energy;
- Natural gas co-generation;
- Fuel battery;
- Using heat from snow or ice;
- Biomass generation;
- Using heat from biomass;
- Production of biomass fuel;
- Hydro power generation; and
- Geothermal power generation.

A company must apply to the agency[21] with a plan of a facility in the designated form, and the Agency will examine the submitted documents and decide whether to grant a subsidy.

From 1997 to 2008, the Japanese government granted assistance to about 480 photovoltaic power generation projects and about 250 wind power generation projects.[22]

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

Currently, there are two purchase guarantee programs for electricity generated by renewable energy: (1) the Renewable Portfolio Standard ("RPS") program under the Act on Special Measures concerning New Energy Usage by Electric Utilities (Act No. 62 of 2002) (the "RPS Law") and (2) a new buyback program for photovoltaic generation, described below.

New buyback program

A new buyback program for photovoltaic generation was launched in November 2009 in Japan. Under this program, electric power companies must purchase the surplus electricity generated using photovoltaic power systems at a fixed price guaranteed for 10 years. The minimum price guaranteed for households is JPN42 per kWh less than 10kW, and the minimum price for others is JPN40 per kWh in 2011.

RPS program

The RPS program under the RPS Law in Japan requires that electricity companies use a specified amount of electricity generated from new energy. To meet their obligation, electricity companies (i) generate electricity at their plants by using new energy, (ii) purchase new energy electricity from third parties or (iii) purchase credits for new energy through a banking system.

Every four years, the Minister of MITI sets the target for the following eight years after consideration of the opinion of the investigation committee[23] and announces the target by ministerial ordinance.

The total target amount for new energy use from 2008 to 2015 is as per the following table.[24]

21 In relation to categories (1) to (7), a company must apply to the Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry of Japan. In relation to categories (8) to (12), the company must apply to the New Energy and Industrial Technology Development Organization.

22 Present Status and Promotion Measures for the introduction of Renewable Energy, 6 November 2009, Project Team of MITI).

23 Investigation Committee concerning General Energy Resource.

24 Ministerial notification of MITI (No. 279, 31 August 2009).

Fiscal year	2008	2009	2010	2011	2012	2013	2014	2015
Target amount	86.7	92.7	103.8	124.3	128.2	142.1	157.3	173.3

42 electric companies have an obligation to purchase new energy; these companies include 10 general electricity suppliers. All of these electric companies performed their purchase obligations in 2009.[25]

However, the FIT Project Team (defined below) pointed out that these targets are quite low and that each electric company can achieve its target by purchasing credits through the banking system. Thus, the Japanese government is examining other approaches, including Japan's FIT (described below), to increase new energy use.

Japan's FIT

The Japanese government currently investigates Japan's "FIT" (Feed in Tariff) under which electric companies have the obligation to purchase electricity generated by New Energy sources. METI established a "project team" to discuss what kind of system should be introduced to allow purchase of renewable energy generated ("FIT Project Team"). On August 2010, the FIT Project Team released its conclusion and presented an option for purchase guarantees. Based on this presented option of FIT Project Team, the bill of Act on Special Measures concerning Renewable Energy was submitted to the Parliament and is currently discussed in there.[26] If the Parliament passes the bill of Act on Special Measures concerning Renewable Energy, any operators of electric utilities can not refuse to purchase any electricity generated by "Renewable Energy"at the designated price in the designated period by the Minister of economy, trade and industry without justifiable reason.

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

Under the new buyback program for photovoltaic generation, the minimum price guaranteed for households is JPN42 per kWh less than 10kW, and the minimum price for others is JPN40 per kWh for 10 years. If the Parliament passes the bill of Act on Special Measures concerning Renewable Energy, the minimum price will be designated by the Minister of METI.

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

Renewable energy-based power plants have no priority for connection to the grid in Japan. All electricity sources are treated equally on a first-come, first-served basis. The FIT Project Team has pointed out that

[25] Annual Energy Report 2008.

[26] The bill Act on Special Measures concerning Renewable Energy is discussed in the Parliament at the time of writing this article.

transmission grid operators should take necessary measures to connect renewable energy-based power plants to their grid and that renewable energy-power plants should operate preferentially to other types of power plants. If the Parliament passes the bill of Act on Special Measures concerning Renewable Energy, general electricity suppliers will have the obligation to connect renewable energy-based power plants into their grid except for justifiable reason.

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

The Japanese government assists in the introduction of manufacturing equipment for bio ethanol and bio diesel from biomass, which are produced from waste.[27] Companies apply to the Japanese government with an implementation plan, and the Japanese government decides whether to grant subsidies. The maximum subsidy amount must be 1/2 of the cost of installation of manufacturing equipment for bio ethanol, bio ethanol blended-gasoline or bio diesel and installation of or improvement work on facilities to supply bio ethanol blended-gasoline at gas stations.

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

New Energy Use Assistance

The Japanese government has established assistance programs to assist companies that use new energy.[28] Companies must apply for this assistance program with a use plan for new energy; if the Ministry of MITI approves such use plan, the company will be granted (i) loan guarantees, (ii) interest free loans, and/or (iii) subsidies for 1/3 of the necessary costs under the approved plan, as described in Question 5.

Others

The Japanese government also assists or grants subsidies for examination or development of technologies in respect of renewable energy, especially solar power generation, wind power generation, biomass energy, geothermal energy. It also assists local governments in introducing solar power generation into public facilities including public schools, roads, railroads, ports or airports, etc.[29] by granting subsidies to the energy service companies that provide the services. The services are provided under a "shared savings agreement" in order to reduce greenhouse gas emissions from the public facilities owned by local governments. The central government examines whether the services include advanced technologies, determines the effectiveness of power reduction or the effectiveness of introducing the technologies to other similar facilities, and decides whether subsidies should be granted.[30]

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source to the total-country generation of electricity?

The percentage of electric power generation from renewable energy was 3.4% of total electric power generation in 2008.

27 Annual Report of Energy in 2008.

28 Explanation of Policies of New Energy, New Energy Foundation (2009)

29 The Annual Report of Energy 2008.

30 Explanation for application to Assistance for shared savings ESCO services (MOE, Global Environment Bureau, Climate Change Policies Division), April 2009

If hydraulic energy used to generate electric power is included in renewable energy, the percentage was 9.0% of total electric power generation in 2005.[31]

	2009	Percentage of primary energy supply
Solar Photovoltaics	2251GWh	1.4%
Wind power	2623GWh	
Generation from waste products and biomass	22388GWh	
Hydro	83295GWh	1.3%
Geothermal	2752 GWh	0.7%
Total	-	3.4 %

This table was made from information IEA" Renewables and Waste in Japan" and "Share of total primary energy supply in 2008.

WHITE & CASE LLP	
Toshio Dokei Marunouchi Trust Tower Main 26th Floor, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005 Japan T +81 3 6384 3231 F +81 3 3211 5252 E tdokei@whitecase.com	**Yuko Tashiro** Marunouchi Trust Tower Main 26th Floor, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005 Japan T +81 3 6384 3179 F +81 3 3211 5252 E ytashiro@whitecase.com

[31] "Measures to diffuse renewable energy to establish a low carbon society," Committee for investigation of measures to diffuse renewable energy to establish a low carbon society (10 February 2009).

Jordan

Kais K. Zayadin

ALI SHARIF ZU'BI ADVOCATES & LEGAL CONSULTANTS

GENERAL

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

The introduction of the Renewable Energy and Energy Efficiency Law No. 3 of 2010 (the "Renewable Energy Law") in January of this year, 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.

INCENTIVES

5. 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.

Sales Tax

Products that are used for renewable energy and energy conservation[1] are subject to 0% sales tax and no customs duties.

6. 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.

[1] Only the products listed in the Council of Ministers decision No. 898 dated 4 March 2008.

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

No minimum price guarantee is specifically listed in the Renewable Energy Law. However, the prior mentioned law states that when an entity applies for a license, it is to stipulate the price it intends to sell the energy for, provided that such price is within the average listed by the Jordanian Electricity Regulatory Commission's measurement reference document. However, the price stipulated in the Project Agreement, which is to be executed by the prospective licensee and the Electricity Regulatory Commission, will be the adopted price.

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

No such priority is provided in the Renewable Energy Law.

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

No.

10. 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

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country 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.

ALI SHARIF ZU'BI ADVOCATES & LEGAL CONSULTANTS

Kais K. Zayadin

PO Box 35267
Jebel Amman - First Circle
18 Al-Kulliyah Al-Ilmyah Al-Islamyah Street
Astra Building - 4th Floor
Amman 11180, Jordan

T +962 6 464 2908

F +962 6 463 4277

E kais.zayadin@zubilaw.com

Kyrgyzstan

Gulnara Kalikova
Magomed Saaduev

KALIKOVA & ASSOCIATES

GENERAL

1. What is the nature and importance of the 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 capacity to produce about 140 billion kWh per year. But 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.

Kyrgyz electric power grid consists of 15 HPPs with the 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.

Electric power sector produces about 3.9% of the gross domestic product (GDP) and 16% of the industrial production volume, 10% of the national budget revenues. Thus, electric energy sector has 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;
- 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).

REGULATION

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

Energy sector is regulated by the Government of the Kyrgyz Republic and special authorized state body for energy. Principal laws and regulations governing renewable energy are: (i) the Law on Renewable Energy; (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 National Energy Program of the Kyrgyz Republic for 2008-2010 and 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; (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 as a special authorized body for energy, including renewable energy; (iii) formed by Presidential Edict of 2 May 2008 UP No. 155, the Directorate of the project on development of small and medium energy sector in the Kyrgyz Republic (the "Directorate"). The Directorate is not a state body, but it is vested with the authority to attract investments to the new generating capacities and to develop non-traditional and alternative energy sources.

INCENTIVES

5. 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.

6. 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. 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.

7. 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. The national tariff for electricity in the Kyrgyz Republic is 0.7 per 1 kWh for population and KGS 1.32 per 1 kWh for other consumers (with the exchange rate of the National Bank of the Kyrgyz Republic as of 3 August 2011 being KGS 44.3893 per USD 1). Tariffs for electric and thermal power are set by the Ministry of Energy of the Kyrgyz Republic upon consent of the Parliament of the Kyrgyz Republic.

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

Kyrgyz law envisages guaranteed connection of small and medium HPPs to the grid.

9. 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 5 above).

10. 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.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country 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.

KALIKOVA & ASSOCIATES	
Gulnara Kalikova 71 Erkindik Boulevard, Bishkek, 720040, Kyrgyz Republic T +996 (312) 66-60-60 F +996 (312) 66-27-88 E gkalikova@k-a.kg	**Magomed Saaduev** 71 Erkindik Boulevard, Bishkek, 720040, Kyrgyz Republic T +996 (312) 66-60-60 F +996 (312) 66-27-88 E msaaduev@k-a.kg

Latvia

Iveta Ceple

LAWIN

GENERAL

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

Renewable energy resources have historically gained an important role in the balance of primary energy resources in Latvia. In 2008 the share of renewable energy sources in total gross final energy consumption in Latvia comprised 29.9%. 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, 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).

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 10% share of renewable energy in gross final consumption of energy in transport.

Inter alia, in 2010 in Latvia there were:

- 3 large hydro power plants with the total capacity of 1525,6 MW;
- 139 small hydro power plants with the total capacity of 25,8537 MW;
- 17 large wind power plants with the total capacity of 28,2 MW;
- 13 small wind power plants with the capacity of up to 0,25 MW with the total capacity of 2,706 MW;
- 13 biogas power plants with the total capacity of 14,791 MW;
- 4 biomass power plants with the total capacity of 2,449 MW.

In 2009 the amount of bio-fuel consumed in Latvia comprised 0.48% of the total amount of gasoline and diesel consumed for transport needs.

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, waste landfill site and sewage treatment plant gas and biogas, and biomass [biologically degradable fraction in products, industrial and household waste, agricultural (including substances of plant and animal origin), as well as forestry and similar sector production residual materials].

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 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";
- 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;

At the moment there is draft of the Law on Renewable Energy Resources under review in the Parliament of Latvia.

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

Energy sector, in general, is regulated by Public Utilities Commission which acts under subordination of the Minister for Economics.

INCENTIVES

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

The Law on Natural Resources Tax provides that:

- hydro power plants do not pay natural resources tax for the use of natural resource (water);
- 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:

- a reduced tax rate to certain oil products (gasoline, diesel, etc.), if a certain amount of rapeseed oil or bio-diesel obtained from rapeseed oil is added thereto;
- zero tax under specified conditions, for rapeseed oil, implemented or used as a petrol or fuel, and bio-diesel fully extracted from rapeseed oil. .

Electricity Tax Law states:

- Exemptions are applicable to electricity, produced:

1) from renewable energy resources;
2) in hydro electric 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.

6. 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 as follows:

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 not more than one generating unit is connected to one power distribution system transformer or distribution point	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 %

Producer generating electricity by means of renewable energy resources in Latvia theoretically may classify to two types of support:

1) Producer 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 (according to Cabinet of Ministers Regulations No.262);

However, for the purpose to evaluate whether such support is economically sound and in order to prevent 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 1 January 2013 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) Producer 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, the producers of renewable energy resources in practice face difficulties in qualifying for this support due to the following:

- mandatory procurement is not envisaged for a producer who uses the soft biomass. As of 1 November 2010 this support was applied only to RER producers, but Regulations No.221 was not sufficiently modified and formula for a producer who uses the soft biomass was not included therein. Therefore, such producer cannot obtain the right to sell the produced electricity to the public traded in the form of mandatory procurable amount of electricity;

- in order to obtain the rights to a fee for electric capacity installed, certain criteria are to be met, which in practice can only be met by a plant that has sufficient thermal capacity all year round. However, the cities of Latvia where such capacity would be necessary already have well-established heating systems operating on natural gas, for instance.

7. 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 to calculate (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.221 contain formulas, according to which to calculate (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.

8. Do the 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. However, the draft of the Law on Renewable Energy Resources, in its present wording states the obligation of transmission system operator to cover certain part of connection costs of the producer of renewable energy.

9. 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.

10. 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:

a) into land areas, necessary in order to achieve the purposes set for environmental protection, as well as

b) into buildings and equipment, necessary, in order to reduce or liquidate pollution and noise; and

c) investments, necessary, in order to adjust production technologies to the needs of environmental protection.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

Please find below the available statistical information from the Central Statistical Bureau of the Republic of Latvia.

Electricity generation (MWh)	2007	2008	2009
Total	**2,828**	**3,213**	**3,555**
Hydro	2,733	3,109	3,457
Wing power plants	53	59	50
Biomass (wood-pulp, would chip) power plants	5	5	4
Biogas power plants	37	40	44

	2007	2008	2009
The share of electricity produced from renewable energy resources in the total electricity consumption (%)	36.40	41.22	49.22

LAWIN

Iveta Ceple

Elizabetes 15,
Riga, LV-1010,
Latvia

T: +371 6781 48 48

F: +371 6781 48 49

E: iveta.ceple@lawin.lv

Lithuania

Dovile Greblikiene
Andrius Simkus

LIDEIKA, PETRAUSKAS, VALIUNAS IR PARTNERIAI LAWIN

GENERAL

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

Continual increase of the renewable energy share in Lithuania is one of the key objectives determined by national energy policy and one of the main strategic pillars established by the National Energy Strategy 2007, and furthermore elaborated by new draft of the Strategy highly focused on energy independence, 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 national energy sector. Together with nuclear development program renewable energy incentives are the groundwork for the upcoming decade to ensure the national energy balance to become 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 newly adopted Law on Renewable Energy, transposing the Directive 2009/28/EC, established minimum rates for renewable energy share to be reached by 2020 in each specific sector, and in particular – at least 10% of gross final energy consumption in transport sector, at least 20% in electricity sector, and at least 60% in district heating and 80% in household heating.

With regard to the above mentioned objectives, strategic guidelines currently in force aim at reaching up to 17% of renewable energy share in common national energy input during 2011, and specifically up to 10% of electricity generated using renewable energy sources.

In 2010 the total electricity consumption demand of 9.22 TWh was fulfilled by 5.70 TWh of local electricity generation and the remaining 3.52 TWh of imported electricity. While the biggest stake of local electricity generation in Lithuania depends on imported fossil fuels that equals up to 70.7% of local generation or 43.7% of total electricity consumption, the share of renewable energy sources is also constantly increasing and in 2010 covered up to 9.9% of total electricity consumption, that is resulting in almost 32% increase comparing to the 2009 data.

The major part of electricity using renewable energy sources in 2010 was produced by hydro power plants – up to 59.3%, leaving the remaining part for wind power plants – up to 24.2% and biomass power plants – up to 16.5%. Comparing to the same rates of 2009, the biggest progress was reached in developing wind and biomass power plants resulting in 38% and 36% increase of total electricity generation respectively.

Therefore it may be well declared that the biggest potential of renewable energy development in the electricity sector lies with

biomass and wind energy. It is expected that electricity generation using biomass with 33 MW of installed capacity at the end of 2010 could be increased up to seven times by 2020. Currently the fastest market expansion is focused on the wind energy facilities, given the established support schemes and private business initiatives. In the first quarter of 2011 there were approximately 179 MW of total installed capacity of wind power plants in Lithuania and it is well expected to increase this stake significantly up to 500 MW during the period of 2016-2020.

Under the Lithuanian legislation currently in force, only 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 85 smaller hydro power plants of total 26 MW installed capacity are operated in Lithuania. Irrespective of the said restraints reconstruction of older generation facilities and development of new projects are expected to trigger slight increase of the hydro energy share by 2020.

In district heating the share of alternative energy sources equalled around 20.2% in fuel balance for heat production in 2009, comparing to those remaining 79.8% of the fossil fuels share. However new regulatory and business initiatives aim at radical reallocation of these shares: targeting for up to 60% or even 85% of renewable energy sources in fuel balance for heat production. Given the absolute majority of this share is covered using biomass fired power plants, including wood and wood-waste, agricultural produce waste and biogas, 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 bio-fuels reached up to 4.3% in final gross gasoline and biodiesel consumption for transport in 2008 and is growing constantly. The main raw used for bio-fuels is rape and grain crops. The share of bio-fuels in the transport sector is expected to be increased up to 15% by 2020.

Development of the solar and geothermal power plants in Lithuania is still at the very early stage. Favourable support schemes for solar energy, including high level feed-in tariffs, could be well expected to trigger expanded installations of photovoltaic technologies both for domestic and industrial use. So far, by the end of 2010, first 0.03 MW of photovoltaic power plants were installed in Lithuania.

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 and declares as such "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 renewable energy sector in Lithuania is structured based on the recently adopted Law on Renewable Energy transposing the Directive 2009/28/EC into the national law, as well as on other laws adopted by the Parliament and promulgated by the President.

Under current legislative framework, the following acts adopted by the Parliament do form a core legal background for renewable energy in Lithuania:

- Law on Renewable Energy 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 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;

- National Energy Strategy 2007 establishes the core strategic guidelines and tasks for development of the national energy sector, including increase of the share of renewable energy sources in final gross consumption of energy. The National Energy Strategy adopts strategic energy guidelines for the 20 years period and is being reviewed every 5 years. By the end of 2011 the Parliament is expected to adopt a completely revised text of the Strategy;

- Law on Energy (adopted in 2002 as further amended) establishes objectives of the State energy sector regulation, including promotion of local and renewable energy sources. The competence of the Government, as well as competences of other public authorities acting within the energy sector is established;

- Law on Electricity (adopted in 2000 as further amended) establishes the principle of public service obligations in the electricity sector related to the public safety, environmental safety and renewable energy generation;

- Law on Heat Sector (adopted in 2003 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;

- Law on Biofuel, Biofuels for Transport and Bio-oils (adopted in 2000 as further amended) establishes a legal background for production and usage of biofuels and bio-oils. This law is considered for repeal after adoption of the Law on Renewable Energy.

Basic provisions established in the laws are further elaborated at more detailed procedural level by the secondary legislation acts adopted by the Government, the Ministry of Energy or other competent public authorities. After recent adoption of the Law on Renewable Energy the secondary legislation acts will be subject for revision and updates as planned by the end of 2011.

By July 2011 the core secondary legislation acts establishing the legal background for renewable energy are the following:

- National Strategy for 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 amongst others also establishes targeted annual rates of renewable energy share in final gross consumption of energy in electricity, district heating and transport sector. The Strategy is considered for update following the relevant provisions of the Law on Renewable Energy;

- Regulation on Promotion of Generation and Purchase of Electricity Generated using Renewable Energy Sources (adopted by the Government in 2001 as further amended) establishes the support schemes applied for electricity generated in wind, biomass, solar power plants, as well as hydro power plants not exceeding 10 MW of installed capacity. The Regulation is considered for thorough review following general support schemes established by the Law on Renewable Energy;

- Resolution on Establishment of the List of Public Service Obligations in the Electricity Sector (adopted by the Ministry of Energy in 2009 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;

- Regulation on Provision of Public Service Obligations (adopted by the Ministry of Energy in 2009 as further amended) establishes the legal principles and procedures for provision of public service obligations, including application of support schemes regarding the trade in electricity produced using renewable energy sources;

- Rules of Trade in Electricity (adopted by the Ministry of Energy in 2009) establish the principles and procedures for trade in electricity in wholesale market, including bilateral contracts, power exchange, balancing services and power reserve capacities;

- Regulation on Connection to the Power Grid of the Energy Objects of the Electricity Consumers and Producers (adopted by the Ministry of Energy in 2009) 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;

- 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;

- Rules of Issuance of Permissions for Activities in the Electricity Sector (adopted

by the Ministry of Economy in 2001 as further amended) establish procedural requirements concerning application for and issuance of permissions for activities in the electricity sector, including development of power plants and production of electricity;

- Resolution on Prices of Public Service Obligations in the Electricity Sector (adopted by the National Control Commission for Prices and Energy in 2002 as further amended) establish the State regulated prices of electricity, including the feed-in tariffs for electricity generated using renewable energy sources;

- Regulation on Purchase of Heat Energy Produced by the Independent Heat Producers to the Heat Supply Systems (adopted by the Government in 2003 as further amended) establishes the core legal principles for purchase of heat energy produced using renewable energy sources; and

- 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-fuels producers from the rape and grain crops.

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. Relevant 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 the following:

- Government – forms the energy policy of the State; submits the draft National Energy Strategy for reading and adoption in the Parliament; adopts the National Programme 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, 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 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 permissions for activities in the energy sector; regulates and controls implementation of public service obligations, including trade in electricity generated using 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 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 market-plus margin for electricity produced from renewable energy sources; adopts the rules of and announces quota auctions for development of renewable energy sources with guaranteed support schemes; issues licences 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.;

- Local Municipalities – within their competences established by laws regulate supply of heat energy to the end consumers, etc;

- State Enterprise Energy Agency – implements the programs for increased effectiveness in usage of energy resources; provides communication and information spread concerning effectiveness in usage and consumption of energy resources, development of renewable energy sources, etc.

INCENTIVES

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

The tax advantages in Lithuania may be designated for certain group of taxpayers, also including energy generation companies, solely on the basis of 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.

Additionally the 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.

It is also worth mentioning that consistently increasing environmental taxes, applied for industries and energy generation companies using the fossil fuels, will have an impact for growing competitiveness of renewable energy generation in the national energy market.

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

From 1 January 2010, after regulatory mechanisms for electricity market liberalization were introduced in Lithuania, including the

start of hourly trade in electricity, the electricity produced from renewable energy sources has to be traded under bilateral agreements between producers and suppliers or through the power exchange. From the said date no compulsory take-offs or the purchase guarantee for the electricity produced from renewable energy sources are further applied.

Nevertheless, the electricity producers, operating wind, biomass and solar power plants, as well as hydro power plants not exceeding 10 MW of installed capacity, are being compensated for the traded electricity up to the fixed price (feed-in tariff) established by the national regulatory authority or being additionally paid with the market-plus margin following the quota auction, as specified herein below.

This means, that in case the producer sells electricity to the supplier for the lower price than the minimum price level established under applicable legislation, the grid operator, to whose electricity grid the power plant of such producer is connected, shall compensate on the monthly basis the remaining margin between the contract price and the feed-in tariff or additionally pay the market-plus margin.

The costs incurred by the grid operators due to the said payments are designated as the 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.

It has to be also emphasized that the said compensation mechanism is not applied for electricity generated for own needs consumption by the producer or consumer, electricity produced in biomass power plants in which the biomass usage is less than 70% of total fuel balance, as well as in other power plants in which the renewable energy sources usage is less than 90% of total fuel balance.

The only exception of this scheme is specific guarantees for small-size producers with installed power generation capacities not exceeding 30 kW in total. All electricity generated by these producers and supplied to the electricity grid is being compulsory purchased by the energy company nominated by the Government, i.e. public supplier or supplier of last resort.

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

The Law on Renewable Energy, adopted in May 2011, introduced fundamentally reviewed framework for the promotion of energy from renewable sources. 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 two pillars – fixed price guarantee (feed-in tariff) and market-plus guarantee, being applied alternatively.

As for the first alternative, the feed-in tariffs are applied to renewable energy companies having valid permission for development of renewable power generation capacities or permission 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 recent regulatory changes.

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 unchanged for the entire support period by 2020.

Renewable energy companies granted with support schemes before adoption of the Law on Renewable Energy enjoy the following feed-in tariffs for entire quantities of the electricity produced in:

- Hydro energy power plants up to 10 MW of installed capacity – 0,2 LTL/kWh (approx. 0,0579 EUR/kWh);
- Wind energy power plants – 0,3 LTL/kWh (approx. 0,0868 EUR/kWh);
- Biomass power plants – 0,3 LTL/kWh (approx. 0,0868 EUR/kWh); and
- Solar (photo) energy power plants – up to 100 kW of installed capacity: 1,63 LTL/kWh (approx. 0,4720 EUR/kWh); from 100 kW up to 1 MW of installed capacity: 1,56 LTL/kWh (approx. 0,4518 EUR/kWh); and from 1 MW of installed capacity: 1,51 LTL/kWh (approx. 0,4373 EUR/kWh).

Additionally the feed-in tariffs will be 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.

For the second alternative, the market-based 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 market-plus model was recently 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 355 MW for biomass power plants.

Renewable energy companies may apply for capacity quotas with the State guaranteed support scheme through the auctions organised and announced by the national regulatory authority – the National Control Commission for Prices and Energy. The auctions will be organized for each region of electricity network defined by grid operators.

All perspective renewable energy developers participating in the auction are required to declare the market-plus margin to be added to the general market price established by the National Control Commission for Prices and Energy. The winning bidder is the one with the least market-plus margin required.

Such market-plus 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 market-plus margin declared by the winning bidder is guaranteed unchanged by the State for 12-year support period.

The auction model for allocation of capacity quotas and support scheme was introduced by the Law on Renewable Energy, and therefore the second half of 2011 is a transitory period for finalizing the secondary legislation acts, including the auction regulations, and announcement of initial quota auctions.

It has to be noted that 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 has to be traded under bilateral agreement or through the power exchange with no minimum price guarantees.

8. Do the 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 permission for development of renewable energy capacities and may be extended on case by case basis following the terms and conditions established by the law.

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.

Comparing to other energy generation capacities, the 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 the power plants of the installed capacity exceeding 30 kW. The grid connection fee discount is estimated on the basis of the contract price of the procured contractor for the connection works. The power plants not exceeding 30 kW of installed capacity are connected to the power grid free of charge. 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.

9. 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.

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

Under the 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. For the period of 2007-2013 the total sum of 165 million LTL (approx. 47.8 million EUR) from the EU structural funds is awarded for the construction projects of new biomass and cogeneration power plants at the financing intensity up to 50% of the total project value. Respectively, the total sum of 450 million LTL (approx. 130.3 million EUR) is awarded for the development of biodegradable waste management infrastructure.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

The share of electricity generated using renewable energy sources in Lithuania was equal to 15.96% in total generation of electricity (or 9.89% in gross final consumption of electricity) in 2010. This share divides for 9.47% (or 5.86% in gross consumption) covered by hydro power plants, 3.86% (or 2.4%) by wind power plants and 2.63% (or 1.63%) by biomass power plants.

LIDEIKA, PETRAUSKAS, VALIUNAS IR PARTNERIAI LAWIN	
Dovile Greblikiene	**Andrius Simkus**
Jogailos g. 9/1, LT-01116 Vilnius, Lithuania	Jogailos g. 9/1, LT-01116 Vilnius, Lithuania
T +370 5 268 1875	T +370 5 268 1875
F +370 5 212 5591	F +370 5 212 5591
E dovile.greblikiene@lawin.lt	E andrius.simkus@lawin.lt

Macedonia

Dori Kimova

KIMOVA LAW OFFICE

GENERAL

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

Pursuant to the new Energy Law which was enacted by the Parliament of Republic Macedonia in February, 2011 the encouragement of the consumption of Renewable Energy Sources is set out as one of the targets that are to be provided by the Law. According to this Law the Government of the Republic of Macedonia is to create policy of consumption of the Renewable Energy Sources by establishing Strategy on Renewable Energy Sources. This Strategy is suggested by the Ministry of Economy and enacted by the Government of Republic Macedonia each 5 years, and it refers to 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 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 evaluated that the planned annual dynamics are not realized, the Ministry should propose to the Government of Republic of Macedonia additional actions and adequate modifications to the Action plan.

The Government of Republic of Macedonia, by passing a decision, 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 wastewater and biomass purification plants.

REGULATION

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 secondary legislation 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 Regulatory Commission for Energy.

INCENTIVES

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

The tax advantages are set out by the Energy law as one of the measures for supporting the implementation of the Strategy on Renewable Energy Sources, but, since this law is new, drafting of the respective amendments to the relevant laws is necessary this to apply in practice. It is still pending procedure.

6. 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 state owned company, is obliged to purchase the total quantity of electricity generated by the Renewable Energy Sources which is delivered by the privileged producers.

7. 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 Regulatory Commission for Energy.

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

The Energy Regulatory Commission of the Republic of Macedonia may ask from the relevant Operator to 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.

9. 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.

10. 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, increase of the prices which consumers are paying for consumption of the Renewable Energy Sources .

Energy law also provides that the implementation of these measures could be financially supported by the State.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

According to the data contained in the Strategy on Renewable Energy Sources, which was enacted by the government of Republic in Macedonia in November, 2010, in 2005 the total amount of energy generated from Renewable Energy Sources in the total generation of electricity was 13,8. The exploitation of Renewable Energy Sources in Macedonia in 2005 was 3016 GWh. Thus, the biomass was used as a final source in the amount of 1767 GWh with a participation of 59% of the total use of Renewable Energy Sources in Macedonia. Hydropower energy, participated with 1,144 GWh in 2005, which represents a relative share of 38%. The ratio of the production by the major HPP versus the small HPP in 2005 was 94% to 6%, respectively. The geothermal energy participated with 105 GWh or 3% in 2005. In 2005 the solar energy was also used in a modest amount (about 0.2% of the total utilization of Renewable Energy Sources), but it hasn't been statistically recorded.

KIMOVA LAW OFFICE

Dori Kimova

Vasil Glavinov 3/1-1
1000 Skopje
Republic of Macedonia

T +389 2 3 132 114

F +389 2 3211 383

E dori.kimova@kimova.com.mk

Montenegro

Sasa Vujacic
Milorad Janjevic

LAW OFFICE VUJACIC

GENERAL

1. What is the nature and importance of the 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, 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 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 point, Ministry of Economy, competent for the energy framework, has initiated various studies and projects in cooperation with and financed by different international institution 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.

The 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 act are in the phase of preparation, or in the process of adoption.

The plan for 2010 and 2011 was to adopt 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 major challenge, as well as creation of the positive environment for development and investments in this area or promotion of the renewable energy sources as most attractive one, 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 follow: 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, sewage treatment plant gas energy.

REGULATION

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

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 Stretegy 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 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);
- Rulebook on the methodology for calculating the purchase price of electricity from wind power ("Official Gazette of Montenegro", no 27/10 from May 2010);
- Regulation on the wind power plants ("Official Gazette of Montenegro", no 67/09 from September 2009)

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, as:

The Program of development and use of renewable energy sources, which will define the dynamic of development of the 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;

Regulation on the tariff system for determining the incentive prices of electricity from renewable energy sources and high efficiency cogeneration;

Decree on the manner of exercising the rights and status of privileged producer of electricity;

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.

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.

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 the 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 Ministry of Economy, and 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 of area of the renewable energy sources.

Some of the most important competencies of the Ministry of Economy concerning the area of renewable energy sources are establishment of the legal, institutional and regulatory framework; supervisory role, inspection authorities and responsibility for facilitating the procedures for new subjects in this sector, while Energy Regulatory Agency has competencies such as: supervision over the work of energy market subjects, issuing licences, authorizations, establishing prices and tariffs prescribed by the Law, promoting competition within the sector.

INCENTIVES

5. 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.

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

Beside 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, 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 implemented measures aimed at increasing a contribution of electricity generated from renewable energy sources to the total electricity generation.

A purchase guarantee for the renewable energy companies is also given by the Regulation for the wind energy plants adopted by the Government, where there is an obligation to the state to purchase all energy generated from these companies.

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

The types of facilities for generation of electricity from renewable sources or in high-efficiency generation and their classification in groups shall be specified by the Ministry.

Upon obtaining an opinion from the Agency, the Government shall set in the previously mentioned tariff system purchase prices for energy that may be different for different types or groups of facilities, as well as for different types of renewable sources.

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

An energy undertaking if generated electricity from the renewable energy resources, and if satisfied some other requirements provided by the Law may obtained the status of privileged generator.

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.

9. 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 smaller, 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.

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

General obligation of the Ministry, by the Law, is to facilitate easier licensing procedures for renewable energy sources, and 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

11. What is the percentage of electricity generated, based on each type of renewable energy source in the total generation of electricity at country scale?

It is estimated that the total hydro potential in Montenegro is approximately 9846 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 neighbours, 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 at country scale.

LAW OFFICE VUJACIC	
Sasa Vujacic 93 Moskovska Street 81000 Podgorica, Montenegro T +382 20 229 725 F +382 20 229 730 E sasa.vujacic@lawoffice-vujacic.com	**Milorad Janjevic** 93 Moskovska Street 81000 Podgorica, Montenegro T +382 20 229 725 F +382 20 229 730 E milorad.janjevic@lawoffice-vujacic.com

Pakistan

Aliya Yusuf
Alyzeh Zahid

ORR, DIGNAM & CO.

GENERAL

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

1.1 Importance of renewable energy in Pakistan

As a developing country with significant population growth, the demand for electricity in Pakistan has been increasing rapidly and unless new units come on stream, the shortfall in capacity is likely to increase significantly. Although, historically, the major proportion of Pakistan's energy requirements were met by hydro electric power (which in 1985 represented about 67%[1] of the total installed energy capacity), with the introduction of significant thermal power plants (particularly in the 1990s), the balance has now changed so that in 2009-2010, hydro electric power represented only 30.36%[2] of the total installed energy capacity.

Despite this lack of investment in hydro electric power generation, the Government and Regulators recognize the importance of renewable sources of energy for the power sector and so have taken measures to encourage the development of renewable energy in Pakistan. Most significant of these are the constitution of the Alternative Energy Development Board ("AEDB") and the issuance of the Policy for Development of Renewable Energy for Power Generation ("Policy"), designed to facilitate the development of Pakistan's renewable energy sector.

1.2 The renewable energy potential available in Pakistan

Although the potential for renewable energy is recognized in Pakistan, including in the context of the need to reduce Pakistan's dependence on imports of fuel for power generation and social and environmental concerns, other than the existing public sector hydro power projects, renewable energy does not currently form a very significant part of the power generation mix which is why the Policy was developed and issued in 2006. Although the Policy covers wind, solar photovoltaic, hydro electric power (of less than 50 MW) and biomass, since the creation and the coming into force of the Policy, private sector investment interest for new projects appears (at least for larger projects) to have been focused primarily on wind power projects. In fact, the AEDB, in December 2010, signed an MOU with the China Three Gorges Corp. ("CTGC") for the development of 2000MW wind power and 300 MW solar power plants in the Sindh and Punjab Provinces of Pakistan.[3] In June of this year, the financial closing of a 49.5 MW wind power project of FFC Energy Ltd. located at Jhampir, Thatta in Sindh also took place.[4]

Such increased interest in wind energy is apparently because the coastal belt of Pakistan is reported to have a wind corridor that is 60 km wide (from Gharo to Kati Bandar) and 180 km long (upto Hyderabad) and has wind sites available in the coastal area of Balochistan province and some in its northern areas with a collective total exploitable potential of 50,000

1 NEPRA State of Industry Report 2010 ("NEPRA Report").
2 Source: NEPRA Report.
3 www.aedb.org.
4 www.aedb.org.

MW. The potential for hydro electric power is also significant and there has been some private sector interest in such projects[5]. However, currently the private sector stake in hydro electric power is negligible and accounts for only 111 MW of Pakistan's total installed hydro power capacity, which is 6.555 MW.[6]

The Policy itself also specifically highlights the potential for various types of renewable energy in Pakistan as follows.

- **Hydro electric power:** "*Hydro electric potential, which has not been fully investigated, is conservatively estimated to be 45,000 MW*".[7]
- **Wind Energy:** "*commercially exploitable wind resources*" exists in many parts of the country especially southern Sindh province and the southern coastal areas of Balochistan.
- **Solar and Photovoltaic:** Most parts of Pakistan, particularly Balochistan, Sindh and Southern Punjab, receive abundant solar irradiation and according to official sources, approximately 3000 hours of sunshine a year, which is amongst the highest insolation averages in the world.
- **Biomass Energy:** Pakistan's large agricultural and livestock sectors combined with the massive quantities of solid municipal waste generated on a daily basis in Pakistan's urban areas, may be used to generate biomass and methane gas, both of which are valuable forms of renewable energy.[8]

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

2.1. Scope of Policy framework

Most forms of renewable energy are governed by the Policy, but hydro electric power projects with a capacity of more than 50 MW and less developed technologies (including those based on municipal waste and landfill methane recovery) are not covered by the Policy. The Policy is expressed to "*envisage mainstreaming of renewable energy in the development plans of the country*" and its four key strategic objectives are identified as energy security, economic benefit, social equity and environmental protection. The Policy acknowledges that its goals and development strategy are evolving and indicates that, as a first step, it would cover:

- Increase in the deployment of renewable energy technologies.
- Increase in the power supplies to meet increasing national demand.
- Investment friendly incentives which would facilitate the renewable energy markets and nurture the industry and "*generally lower RE*[9] *costs and prices through competition in an increasingly deregulated power sector*".
- Measures to support private sector investment.

Additionally, the AEDB has indicated on its website that the Asian Development Bank (ADB), at the request of the Government of Pakistan, has agreed to provide guarantees equivalent in aggregate up to $200 million to assist the mobilizing of commercial debt from domestic and/or international lenders in order to facilitate the financing of wind and other RE power plants, which would otherwise be too costly or simply would not be available due

5 Source: NEPRA Report.

6 Source: NEPRA Report.

7 The installed hydroelectric capacity was measured recently as 6,555 MW which is roughly 30.36% of Pakistan's total installed energy capacity. Source: NEPRA Report.

8 Pakistan has begun to employ these forms of renewable energy in its sugar mill industry but no other significant use has been reported thus far.

9 Renewable energy.

to current market concerns regarding 'off-take' risks associated with the power sector in Pakistan.[10]

In view of its evolving nature, the Policy adopts a phased approach with separate provisions for the short, medium and long term. In regard to the short term phase for which specific incentives were announced and the medium and long term phases, the Policy provides as follows:

- Medium Term: This Policy phase would provide for a comprehensive framework with an emphasis on the systematic implementation of the renewable energy technologies and the scaling up of capacity deployment. The Policy also states that there will be a greater emphasis on competition within the renewable energy market and on the presence of reduced subsidies and risk cover in comparison to the liberal incentives and guarantees provided under the short term phase.

- Long Term: This Policy phase would apply at a time when renewable energy would be fully mainstreamed and integrated within Pakistan's energy sector. Renewable energy producers would be gradually exposed to competition from alternative sources including competition from conventional sources. Renewable energy producers would, at that stage, be operating in a market where they would be free to choose between all available supply options (utilities) competing against each other without discrimination and/or hidden subsidies. Energy prices would also be reflective of actual technology costs and benefits.

Whilst no specific incentives are provided for the long term, a draft medium term policy ("DM Policy") has been developed. The DM Policy (which is expected to cover the period 2010-2015), *inter alia*, has a wider scope encompassing most types of alternative and renewable energy sources (excluding hydel projects of above 50 MW), enhancing financial mechanisms and also addressing areas such as rural energy services and bio-fuels. In terms of incentives, *inter alia*, the DM Policy incorporates most of the incentives for the short term existing under the Policy. An informal enquiry with the AEDB has indicated that the Policy would continue to prevail until the DM Policy (the draft of which is in its final stages) comes into effect. The text of the revised draft of the DM Policy indicates that existing projects, including those which are scheduled to achieve financial closure under the Policy, would have the option to operate under the framework of the DM Policy or to continue with the terms offered under the previous policy (the Policy). Therefore, this Chapter is written on the assumption that the incentives provided under the Policy would be available for projects initiated under the Policy but which achieve financial closure within the term of the DM Policy.

The Policy for Power Generation Projects ("2002 Policy") is also important from the perspective of renewable energy as, in addition to thermal projects, it covers large scale hydro electric power projects of over 50 MW. One of the key objectives of the 2002 Policy is expressed to be to encourage and ensure the exploitation of indigenous resources including renewable energy resources such as hydro electric power.[11]

[10] www.aedb.org

[11] There is also a 'Hydropower Development Plan-Vision 2025' ("HP Plan") which has been prepared by Water and Power Development Authority ("WAPDA") to meet upcoming power deficits through additional hydro power generation. This envisages specific potential projects but this is not binding.

2.2. Basic Regulatory Structure

The Policy and the 2002 Policy were issued under the auspices of the Ministry of Water and Power ("MWP"), which is the Government ministry with administrative charge over the power sector in Pakistan. This administrative duty has, in the case of matters relating to the Policy, been vested in the Alternative Energy Development Board ("AEDB") (see further Section III(ii) below) and for matters covered by the 2002 Policy, in the Private Power Infrastructure Board ("PPIB"). The regulation of the power sector however falls within the responsibility of NEPRA as an independent regulator set up under the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 ("NEPRA Act").

AEDB was originally set up in 2003 and currently exists under the Alternative Energy Development Board Act, 2010[12] ("AEDB Act") and continues to be the body with primary administrative responsibility for renewable energy sources.

PPIB, also set up by MWP, as indicated above, administers matters relating to thermal and large scale hydro electric power projects under the various energy policies including the 2002 Policy.

NEPRA was established under the NEPRA Act and, as indicated above, is the principal power sector regulator responsible for the fixing of tariffs, issuing of licences and prescribing safety and other procedures.

Power projects, particularly, in the hydro power sector are also subject to regulation by the Provincial Governments.

[12] Having been published for general information in the Gazette of Pakistan, Extraordinary, Part I on 25 May 2010 as the AEDB Act.

2.3. Definitions

As is apparent from the preceding section, the distinction in terms of policy is not strictly between renewable energy sources and non-renewable energy sources but between matters governed by the 2002 Policy (thermal and large hydro electric power projects) and the Policy (wind, hydro electric power of less than 50 MW, solar photovoltaic and biomass) and the different administrators (respectively PPIB and AEDB) and both are regulated through NEPRA. The NEPRA laws and regulations do not draw any distinction between renewable and non-renewable energy sources, though details of the sources must be disclosed as part of the tariff and licensing procedures and will be relevant to that extent (for which see Section III(i) below).

The AEDB Act does however specifically define the term '*alternative or renewable energy*' as "*energy that is produced by alternative or renewable resources as compared to the conventional or that are replenished naturally, which do not deplete when consumed and are non-polluting and environment friendly*", but this definition is essentially for the purposes outlining and delimiting its responsibilities.

REGULATION

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

i) NEPRA Act

As indicated above, this is the legislation by which NEPRA was established and given responsibility as the primary regulator for the electricity sector and the authority charged with the exclusive power to grant licenses. It also provides generation, transmission and distribution and gives it power to prescribe and enforce standards for investment programmes, performance standards and related matters and for determining tariffs.

Licensing

A license is required from NEPRA for any "*generation*" activities and "*generation*" is defined to mean the "*ownership, operation, management or control of generation facilities for delivery or sale of electric power and not solely for consumption by the person owning, operating, managing and controlling those facilities*". A generation license is therefore a necessary pre-requisite for the ownership or operation of an electricity generation facility.

In its capacity as the licensing authority, NEPRA has also implemented the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000 ("Generation Licensing Rules"). These provide, amongst other things, that any license to undertake power generation granted by NEPRA will specifically set out the location, size, technology, interconnection arrangements and other details specific to the generation facilities and separately set out the net capacity of the licensee's facilities after it has been determined to the satisfaction of and in the manner specified by NEPRA.

NEPRA may order a public hearing to be held in relation to a license application and may refuse to issue a license where the site, technology, design, fuel, tariff or other relevant matters pertaining to the generation facility proposed in the application for the license are found to be unsuitable on environmental grounds or do not satisfy the least cost option criteria. Typically, in such cases NEPRA sets out alternative solutions and, if desired by the applicant, allows them a reasonable opportunity to amend their application in accordance with these solutions. Further, NEPRA may, for good cause, impose additional conditions on a licensee. NEPRA also determines the license fees.

NEPRA has issued various licenses for wind and hydro electric power generation including the Green Power and Zorlu wind power projects, both of which are expected to come on-stream in the near term. The Zorlu Project has already commissioned one turbine and sells the electricity generated to the local distribution company.

Tariff

In the context of Tariffs, NEPRA has implemented the National Electric Power Regulatory Authority (Tariff Standards and Procedure) Rules, 1998 ("Tariff Rules"). Under the Tariff Rules, tariffs are defined to include the rates, charges, terms and conditions for the generation of electric power by a licensee.

Tariffs are determined, modified or revised in accordance with the requirements set out in the Tariff Rules, which, *inter alia*, allow licensees to recover all relevant costs incurred to meet the demonstrated need of their customers. Further, under the Tariff Rules, tariffs should be calculated by including a depreciation charge and should allow licensees a rate of return which promotes continued reasonable investment in equipment and facilities. The Tariff Rules provide that tariffs should reflect marginal cost principles to the extent feasible, take into account Government subsidies and encourage competition.

Performance

NEPRA has recently notified the National Electric Power Regulatory Authority Performance Standards (Generation) Rules, 2009 ("Performance Rules"). Under the Performance Rules, in order to maintain performance standards, electricity generation facilities are required, amongst other things, to ensure that the voltage and frequency of electricity supplied to recipients is within the normal operational limits set out under the Generation Licensing Rules. Various forms of data and reports are required to be provided to NEPRA.

ii) The AEDB Act and the 2008 Rules

As highlighted above, the AEDB subsists under the AEDB Act. The AEDB Act provides that the AEDB will be an autonomous body comprising of the (i) Chairman appointed by the Government of Pakistan (ii) the Members of AEDB who include the secretaries of various government departments and (iii) six other members from the private sector approved by the Prime Minister on the recommendation of the AEDB Board, of which three members shall be experts on alternative energy and(iv) the Chief Executive Officer of AEDB and (v) the Chief Secretaries of the provincial governments of the country or their nominees, who will not be below the rank of Provincial Secretary. . The AEDB Act charges AEDB with the responsibility for facilitating the development of national strategy, policies and plans for utilization of alternative and renewable energy resources and to act as a forum for evaluating, monitoring and certifying alternative or renewable energy products and projects. AEDB is also to act as a coordinating agency for commercial application of alternative or renewable technology. The AEDB Act also enables the AEDB to set up alternative and renewable energy projects on its own or through joint ventures or partnerships with various public or private entities to create awareness and promote the need to take such initiatives for the development of renewable energy for the benefit of the people of Pakistan.

The AEDB is also authorized to delegate part of its functions and obligations to one or more organizations, which in turn, are answerable to AEDB. It also acts as coordinating agency for the purpose of ensuring the commercial application of alternative or renewable energy sources pursuant to the AEDB Act.

iii) Policy

This document highlights policy objectives in relation to mainstreaming renewable energy development in the country and sets out specific incentives for the short term.

iv) 2002 Policy

This document highlights the policy for investment in thermal and large hydro electric power projects. It also expresses an aim to raise awareness and facilitate the exploitation of indigenous resources including renewable energy resources with an emphasis on safeguarding the environment. It also specifically highlights an aim to implement hydro electric power projects in the power sector on a 'Build-Own-Operate-Transfer' basis (with thermal projects being established on a 'Build-Own-Operate' basis).

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

i) MWP, AEDB and PPIB

Primary administrative control of the water and power sector is vested in the MWP and is exercised in the context of power generation by PPIB (for thermal projects and hydro electric power projects of more than 50 MW) and AEDB (for small hydro electric power, wind, solar and biomass). Each of these offers a '*one window*' facility designed to establish, promote and facilitate private investment projects in the areas for which they are responsible.

The provincial governments also have regulatory power over projects situated in their province and, in the case of hydro electric power projects, may enter into a concession agreement as well as a water use agreement with the power producer.

ii) NEPRA

As indicated above, NEPRA is exclusively responsible for regulating the provision of "*electric power services*", which is defined to mean the "*generation, transmission or distribution of electric power and all other services incidental thereto*". As indicated above, pursuant to the NEPRA Act, NEPRA has the sole power to grant licences for generation, transmission and distribution of electric power along with the exclusive power to determine tariff rates, charges and other terms and conditions for the supply of electric power services by generation, transmission and distribution companies.

iii) Ministry of Environment/EPA Provincial EPAs

Pakistan has issued a National Environmental Policy under which the Government intends to promote energy efficiency and the use of renewable forms of energy sources and makes a statement to the effect that it intends to implement a national energy policy for Pakistan. Pursuant to this a National Energy Conservation Centre was constituted and the National Energy Conservation Policy 2006 issued.

Under the Pakistan Environmental Protection Act, 1997, hydro electric power generation projects with a capacity of less than 50 MW and waste-to-energy generation projects are required to carry out and file with the relevant authorities an initial environmental examination and projects on a larger scale including hydro electric power projects with a capacity of over 50 MW are generally required to carry out and file environmental impact assessments in pursuance of the National Environmental Quality Standard Regulations.

INCENTIVES

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

Under the Policy, some of the short term incentives include:

- exemption from customs duty or sales tax on machinery equipment and spare parts intended for the initial installation or for modernization, maintenance, replacement or expansion after commissioning of projects;
- exemption from income tax;
- exemption from turnover rate tax and withholding tax on imports pertaining to power generation utilizing renewable energy resources; and
- a security package for grid-connected renewable energy independent power projects which contain stability clauses protecting against changes in the tax and duty regimes of Pakistan.

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

Yes. Under the Policy, it is mandatory for the power distribution utilities to buy all the electricity offered to them by renewable energy projects established in accordance with the Policy in that it provides that "*[e]lectricity shall be purchased from RE power producers at a voltage of 220 kV at the outgoing bus bar of the power station if the power station is located within 70 km of an*

existing 220 kV transmission line, or at 132 kV if it is within 50 km of an existing 132 kV transmission line, or at 11 kV if it is within 5 km of an existing 11 kV transmission line, or at 400 V if it is within 1km of a 400 V distribution feeder. The minimum average power to be supplied in each case would be 1,250 Kw/KM, 250 kW/km, 100 kW/km, and 20 kW/km, respectively..."

In the case of large hydro electric power projects, the security package documents including the off take agreement do provide that the power purchaser will purchase all power generated.

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

There is no guaranteed minimum purchase price *per se,* but the draft security package documents are structured in a way that there is a guaranteed return on equity. In the case of hydro electric power projects under the 2002 Policy this is through a Minimum Monthly Energy Payment concept.

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

Not *per se,* but in terms of the standard draft security package, they should qualify for priority connection to the power grid.

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

No incentives as such are currently offered for the domestic manufacture of materials under the Policy although in the context of the Policy, the need for development of local manufacturing is highlighted. Further, it is relevant that under the Generation Rules, there is an obligation on a licensee to ensure economic procurement of all purchases made or agreed to be made by the licensee for the procurement, construction or installation of the generation or interconnection facilities or for its operation and maintenance on prudent and commercially reasonable terms and conditions. There are similar obligations in connection with financing arrangements.

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

i) Policy

The Policy contains other incentives for the short term, which include, in addition to those highlighted in the previous section:

- Permission for power generation companies to issue corporate registered bonds;
- Permission to issue shares at discounted prices;
- Permission for foreign banks to underwrite the issue of shares and bonds to the extent authorized under the laws of Pakistan;
- Renewable energy power producers are also allowed to enter into direct and/or bilateral sales contracts with end-use customers to sell all or part of the power generated by them to their direct customers and the rest to the utility for general distribution. For direct sales, they would be required to pay 'wheeling' charges for the use of the transmission and/or distribution grid network used to transport the power from the plant to the purchaser; and
- Independent Power Producers, based on variable renewable energy resources such as wind and water flows, would be made immune to factors which are beyond their control and at the same time are to be

rewarded if they perform better than is reasonably expected.

ii) 2002 Policy

The 2002 Policy contains other incentives, separate from those already abovementioned. These incentives are set out as under:

- Permission for power generation companies to issue corporate registered bonds;
- Permission to issue shares at discounted prices to enable venture capitalists to be provided higher rates of return proportionate to the risk; and
- Permission for foreign banks to underwrite the issue of shares and bonds by the private power companies to the extent allowed under the laws of Pakistan.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

No recent official statistics setting out the respective shares of wind, solar photovoltaic and biomass electricity generation in the total electricity generation for Pakistan have been found, but the share of all these renewable energy sources other than hydro power is generally understood to be very small.

In the case of hydro electric power generation, the NEPRA Report indicates that in 2009-2010, the percentage share of hydro electric power generation to total electricity generation in the country was 28.70% with most of the installed hydel power capacity of the country being owned by the Public Sector and the Private Sector accounting for a mere 111 MW.[13]

ORR, DIGNAM & CO.

Aliya Yusuf

Building No. 1B,
State Life Square,
I. I. Chundrigar Road
Karachi-74000
Pakistan

T +92213 2415384

F +92213 2418924

E Aliya.Yusuf@orrdignam.com

Alyzeh Zahid

Building No. 1B,
State Life Square,
I. I. Chundrigar Road
Karachi-74000
Pakistan

T +92213 2415384

F +92213 2418924

E Alyzeh.Zahid@orrdignam.com

[13] As mentioned in Section 1.2 above, the total installed generation capacity for hydro electric power for the year 2009-2010 is measured to be 6555MW. Source: NEPRA Report

Poland

Tomasz Chmal
Alina Szarlak
Katarzyna Kahl

WHITE & CASE

GENERAL

1. What is the nature and importance of the 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 the 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 November 10, 2009, is in line with the European legislation. One of its main objectives is to increase the use of renewable energy sources, including biofuels. The Polish Energy Policy furthermore presents the approach that use of renewable energy sources will be a stabilizing factor of the national energy security.

The main objectives in the field of the renewable energy sources include:

- increase of the share of the renewable energy in the final energy consumption up to 15 % by 2020 and further increase in the following years;
- achieving of a 10% share of biofuels in the transport fuel market by 2020 and increase of the deployment of second generation biofuels; and
- protection of 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 aiming 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 the specific kinds of energy (electric energy, heat, cooling, bio- components) as well as into 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 release from excise tax of the energy generated by renewable sources;
- direct support of the construction of the new renewable energy sources and power distribution grids, using respective European funds and means cumulated in the environmental protection funds, including the substitution fees; and
- development of industries manufacturing appliances and installations for the renewable energy sector.

The Polish regulations guarantee incentives for the use of energy from renewable sources at least until the end of 2017.

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

According to the Polish Energy Law of 10 April 1997[1] (the "Energy Law"), renewable sources of energy are those using wind power, solar power, geothermal 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 in Poland is mainly regulated by the Energy Law as well as by subordinate legislation issued by the authorities competent pursuant to the Energy Law[2]. The renewable energy support system of certificates of origin and the obligations related to the purchase of electricity and heat generated in a renewable energy source are determined in the Ordinance of the Minister of Economy of 14 August 2008[3] (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 4 May 2007[4] (the "System Ordinance").

Pursuant to the Energy Law, economic activity in the field of generation of energy (including generation of electricity from renewable energy sources) is subject to obtaining a concession. Concessions are granted 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 with such 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: enterprise's annual revenues (only those revenues connected with the activity covered by the concession) multiplied by 0.0006.

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

The President of the Energy Regulatory Authority (the "President of the ERA"), the 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 the energy enterprises based on the Polish Energy Law and the state energy policy, which aims to balance the interest of the energy enterprises and customers. The President of the ERA is also the concession-granting authority.

INCENTIVES

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

Electric energy generated from renewable energy sources is subject to exemption from excise tax on the basis of documents confirming the cancellation of certificate of

1 Journal of Laws of 2006, No. 89, item 626, uniform text.

2 The Polish Ministry of Economy intends to replace the existing regulations pertaining to renewable energy with a new law which will implement the EC Directive no. 2009/28/WE. The Ministry does not plan to depart from the existing renewable energy support system (green certificates). It is planned, however, to modify this system by diversifying the support depending on the type of renewable energy source and the technology applied as well as to guarantee the support for a period determined in advance.

3 Journal of Laws of 2008, No. 156, item 969.

4 Journal of Laws of 2007, No, 93, item 623, as amended.

origin (i.e., a certificate confirming that energy was generated in a renewable energy source). For details pertaining to certificates of origin please see Section 6 below.). Upon submission of the 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 tax enjoy an 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.

The Polish law also provides for tax incentives for the use of biofuels. Reduced excise tax rates apply to biofuels used as self- contained fuels as well as to the biofuels mixed with fossil fuels. The reduced excise tax rates applies to bio-ethanol and its derivatives and esters. As bio-ethanol and its derivatives are mixed with gasoline whereas esters are mixed with diesel oil, in accordance with the quality requirements, such mixtures must contain at least 2% share of biofuels in order to be qualified as biofuel mixtures and not as fossil fuels.

6. 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 obliged 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 obliged 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 elected 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 the vertically integrated energy company and are engaged in the sale of energy to the end customers that do not benefit from TPA ("third party access")[5]. 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 ERO. In 2010 that price was 195.32 PLN/MWh, in 2009 – 197.21 PLN/MWh, in 2008 – 155.44 PLN/MWh, and in 2007 – 128.80 PLN/MWh.[6]

Certificates of Origin

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

[5] 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.

[6] Source: Energy Regulation Office – www.ure.gov.pl

for renewable energy producers in the form of certificates of origin – also called "**green certificates**".

The obligation to purchase green certificates applies to: (i) all energy enterprises that trade in electricity and sell electricity to end customers connected to the grid in Poland, (ii) end customers that participate in the commodity exchange, and (iii) brokerage houses (together referred to as the "Obliged Energy Companies" – "OEC"). The OEC are required either to:

- acquire green certificates and present them to the President of the ERO for cancellation, or
- pay a substitute fee.

Certificates of origin are issued by the President of the ERA by decision upon a motion of an energy enterprise generating electricity using renewable energy sources (the "Renewable Energy Producer" − "REP"), submitted via the competent electricity system operator[7] within 14 days from receipt of such motion. A certificate of origin confirms that electricity has been produced from a renewable source.

The property rights arising from a certificate of origin constitute an exchangeable commodity and exist from the moment the certificate of origin is registered upon notice of the President of the ERA with the Register of Certificates of Origin (the "Register"). Those rights are traded on the Polish Power Exchange (Gielda Energii).

Upon a motion of the OEC, the Polish Power Exchange is required to issue a document confirming the property rights arising from the company's certificates of origin and the amount of electricity those rights pertain to.

Upon a motion of the OEC (the holder of the property rights arising from the certificate of origin) the President of the ERA will entirely or partially cancel a certificate of origin by decision. 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, the entity which maintains the Register, about the certificates of origin issued and cancelled.

The property rights arising from a green certificate expire upon cancellation by the President of the ERA. Thus, 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 2009 may be submitted for cancellation in 2011).

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, in the power company's total annual sales of electricity to final customers is no less than:

[7] The electricity system operator is a distribution system operator where the REP is connected.

7.0 % - in 2008;

8.7 % - in 2009;

10.4 % - in 2010;

10.4 % - in 2011;

10.4 % - in 2012;

10.9 % - in 2013;

11.4 % - in 2014;

11.9 % - in 2015;

12.4 % - in 2016; and

12.9 % - in 2017.

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 ERO 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) amounted to **PLN 267.95** in 2010 (in 2009 it amounted to PLN 258.89).

The substitute fees must be paid to the National Fund for Environmental Protection and Water Management by 31 March each year.

Please note that the Ordinance provides for a green certificates support mechanism until 2017 as until that date the mandatory targets for purchase of green certificates are determined.

The draft of a new ordinance available on the website of the Polish Ministry of Economy[8] provides for a green certificates support mechanism until 2020. Thus, in 2020 the envisaged required total amount of share of electricity resulting from the green certificates in the power company's total annual sales of electricity to final customers is no less than 14.4%. Please note, however, that the new ordinance has not been adopted yet and thus may be subject to further changes.

Fines

Non-compliance with the obligations pertaining to the acquisition of the required amount of green certificates or to paying 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:

$$\mathbf{Ko = 1.3 \times (Oz - Ozz)}$$

where:

Ko – means minimum amount of fine, expressed in PLN,

[8] www.mg.gov.pl

Oz – means substitute fee, calculated in accordance with the formula presented under 3.3. above,

Ozz – substitute fee actually paid, expressed in PLN

Please note that since the green certificates related obligations can be fulfilled by the OEC either by purchasing the required amount of green certificates or by payment of the substitute fee, only non-fulfillment of neither of those alternatives constitutes grounds for imposing a fine by the President of the ERA.

The same fine will be imposed by the President of the ERA on the last resort suppliers (or entities performing the tasks of last resort suppliers) for non-compliance with the mandatory purchase obligation referred to above.

7. 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.

In practice, the amount of the substitute fee has the decisive impact on the cap for the price of green certificates (such amount is the maximum price a sensible entrepreneur would pay for the green certificates).

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

Although the renewable energy power plants do not enjoy priority in connection to the grid, they enjoy priority in transmission and distribution of electric energy. The electricity system operator is obliged to grant priority in transmission and distribution of electric energy generated in renewable energy sources. Furthermore, the renewable energy based power plants have de facto a priority in connection to the grid in light of the current Polish and European legislation aiming at the increase of the deployment of renewable energy. In addition, in March 2010 the amendments to the Energy Law came into force which, inter alia, aim to eliminate obstacles in connecting renewable energy power plants to the grid (wind farms in particular).

The energy company engaged in transmission or distribution of energy is obliged to execute an agreement on connecting the interested entities to the grid if the interested entity fulfills the conditions the technical and economical for such connection. If a given energy company refuses to execute such agreement, it is obliged to inform the President of the ERA of the refusal in writing, giving grounds for such refusal.

9. 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 by the Operational Program Infrastructure and Environment- Action No. 10.3- development of industry for the renewable energy sources. This is one of the actions aiming at the financing of projects comprising the construction and development of facilities manufacturing equipment for the generation of energy from renewable energy sources.

In addition, further actions aiming to create incentives for the renewable energy industry are contemplated by the Polish authorities since the development of industries manufacturing appliances and installations for the renewable energy sector is part of the Polish Energy Policy. The Polish Ministry of

Economy adopted an executive actions program within the framework of the Polish Energy Policy. One of the actions intended for 2012 is the temporary tax release for entrepreneurs developing new investments in the field of manufacturing of equipment for the renewable energy sector.

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

The Polish law provides for incentives in particular for smaller renewable energy based power plants. The energy enterprises engaged in 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 expenditure born for the realization of the grid connection). Until 31 December 2010 this reduction of the connection fee will also apply to larger renewable energy based power plants.

Investors planning to implement renewable energy related projects can apply for financial means from European funds, as well as from national funds aiming at the environmental protection. In particular, within the framework of the Operational Program Infrastructure and Environment certain funds are available. In addition there is a possibility to apply for funds from 16 regional operational programs. Also the National Fund for Environmental Protection and Water Management offers financial means for development of the renewable energy related projects.

Until 31 December 2012 entrepreneurs interested in the construction and operation of renewable energy based power plants can also apply for public support in accordance with the Ordinance of the Minister of Environment dated 16 January 2008.[9] Such support can be granted, in particular, by subsidies, preferential loans, preferential bank credits, partial cancellation of the preferential loans or bank credits aid on condition that the application for such support was submitted prior to the commencement of the investment.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

The table below presents the generation of electricity (MWh) by each type of renewable energy sources and the certificates of origin in Poland in 2005 - 2010 (status as of 25 January 2011).[10]

[9] Journal of Laws of 2008, No. 14, item 89.

[10] Source- Energy Regulatory Authority, also available at the website of the Polish Wind Energy Association *"www.psew.pl"*.

Type of renewable energy source	Energy generated [MWh]					
	2005	**2006**	**2007**	**2008**	**2009**	**2010**
Biogas based power plants	104 465,2	116 691,8	161 767,9	220 882,9	295 311	315 543
Biomass based power plants	467 975,6	503 846,2	545 764,9	560 967,4	601 088	664 497
Wind based power plants	135 291,6	257 037,4	472 116,4	805 939,4	1 035 019	1 484 929
Water based power plants	2 175 559,1	2 029 635,6	2 252 659,3	2 152 821,7	2 375 778	2 633 162
Co-combustion	877 009,3	1 314 336,6	1 797 217,0	2 751 954,1	4 286 488	4 174 499
Total	3 760 301,0	4 221 547,7	5 229 525,7	6 268 345,6	8 593 786	9 272 630
	(5 150 certificates of origin)	(4 223 certificates of origin)	(5 739 certificates of origin)	(6931 certificates of origin)	(8533 certificates of origin)	(9016 certificates of origin)

Below we present the share of generation of electricity by particular types of renewable energy based power plants in the national consumption of electricity for 2010 (the national consumption of electricity is calculated as the sum of the national generation of electricity, including the production of electricity for own needs and import of electricity, minus export). In 2010 the national consumption of energy amounted to 155 TWh (4.21 % higher than it was in 2009, i.e., 148.7 TWh), whereas the total amount of energy generated in Poland was 156.3 TWh (ca. 3.6 % higher than in 2009, i.e., 150.9 TWh.[11]

Biogas based power plants:	ca. 0.2 % (316 GWh / 155 TWh)
Biomass based power plants:	ca. 0.4 % (664 GWh / 155 TWh)
Wind based power plants:	ca. 0.96 % 1,485 GWh /155 TWh)
Water based power plants:	1.7 % (2,633 GWh / 155 TWh)
Co- combustion based power plants:	2.7 % (4,174 GWh / 155 TWh)
Total:	6 % (9,273 GWh / 155 TWh)

[11] Source: PSE Operator S.A.

WHITE & CASE		
Tomasz Chmal	**Alina Szarlak**	**Katarzyna Kahl**
Kancelaria Prawna sp.k.ul Marszalkowska 142 Warszawa	Kancelaria Prawna sp.k.ul. Marszalkowska 142 Warszawa	Kancelaria Prawna sp.k.ul. Marszalkowska 142 Warszawa
T +48-22-5050-187	T +48-22-5050-100	T +48-22-5050-174
F +48-22-5050-400	F +48-22-5050-400	F +48-22-5050-400
E tchmal@whitecase.com	E aszarlak@whitecase.com	E kkahl@whitecase.com

Romania

Delia Pachiu

WHITE & CASE

GENERAL

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

In line with the European trend, on the Romanian market, renewable energy is gaining credibility among private investors as having the potential to become the next big industry. Although recent forecasts have shown that the current economic crisis has dampened the initial optimism concerning Romania's long-term economic development, including on the level of present and future energy consumption, Romania still retains 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).

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.

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 has led to the establishment in 2003 of a 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.

The enactment of the Law No. 220 from 27 October 2008 on Establishing a System for the Promotion of electricity produced from Renewable Energy Sources (the "Law No. 220/2008") was the turning point in the Romanian legislative framework.

On 12 July 2010, major amendments have been brought to the Law No. 220/2008 in order to partially transpose into the national legislation the Directive 2009/28/EC. The most relevant amendments refer to the increase of the mandatory annual quotas, the extension of the duration of the support scheme, the increase of the number of green certificates to be obtained by energy producers and the increase of the penalty to be paid by suppliers for each green certificate not acquired.

Several incentives provided by Law No. 220/2008, as amended, could be considered state aid measures and for this reason are not yet applicable. The support scheme has been notified to the European Commission in June 2011 and it has been approved by the European Commission on 13 July 2011 The European Commission found the proposed scheme in line with EU state aid rules, in particular, because it creates clear incentives for an increase use of renewable energy, while containing safeguards to limit distortions of competition. (Source: European Commission – Press Release 13 July 2011). Currently, the participants to the E-RES market wait for the issuance of the secondary legislation necessary to implement the Law No. 220/2008, following the European Commission approval.

Following the correspondence with the European Commission during the pre-notification phase it appeared the necessity to amend some of the current provisions of the Law No. 220/2008, mainly to avoid over-compensation. The Romanian Energy Regulatory Authority ("ANRE") has recently published a draft of a legislative proposal for the amendment of several provisions of Law No. 220/2008. Among the proposed amendments it worth mentioning the following: (i) a definition of over-compensation has been introduced by reference to a 10% internal rate of return above the value considered for the respective technology; (ii) the number of green certificates has been reduced for certain technologies (i.e. geo-thermal, biomass, biogas); (iii) the number of green certificates to be given to a RES producer may be adjusted proportionally with the value of any other state aid received by such producer calculated by reference to the portion of the state aid in the total value of the investment; (iv) investments over 125 MW per plant needs to be notified to the European Commission through the intermediation of ANRE; the receiving of the related approval is a condition precedent for the qualification as priority production and for the entitlement to receive green certificates; (v) during the application of the support scheme, ANRE has the right to reduce the period of its applicability or the number of green certificates allocated to a certain technology in order to avoid over-compensation; such reduced periods/numbers of green certificates shall only apply to new producers authorized following the approval of the related amendment to the support scheme.

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, organized as an independent public legal body of national interest under the 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 funds outside the state budget, through revenues 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 has also responsibilities in defining Romania's energy policy.

INCENTIVES

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

Although several tax incentives were provided in the past by the Romanian legislation to companies investing in E-RES (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 have been repealed in July 2010.

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

Through a Government Decision passed in December 2009, 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 each year until 2020, the mandatory quotas for E-RES the suppliers have to comply with, are set up by Law No. 220/2008 (i.e for 2010 the quota is of 8.30%, for 2011 is of 10%, for 2012 is of 12% while for 2013 is of 14%). For 2010 the mandatory quota has been adjusted by ANRE to 1.56689% of electrical energy provided to end consumers.

In case the suppliers will not reach the annual mandatory quota, they are obliged to pay to the Transmission System Operator an amount of €110 (increased in July 2010 from€ 70) for each green certificate they failed to buy.

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

E-RES producers which obtain green certificates based on the quantity of E-RES 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.

E-RES producers sell the electricity on the wholesale electricity market at the market price. The electricity price is established on each market based on competition considering the sale and purchase offers.

Green certificates are traded separately on a green certificates market. 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). 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.

Starting with 2011 the values mentioned above are annually indexed by ANRE based on inflation index registered in December of the previous year, calculated at the UE 27 level as 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 2011 the indexed values published by ANRE are minimum trading value of €27.567 (RON118.33) and maximum trading value of €56.155 (RON241.04).

The trading value of a green certificate is freely established based on competition mechanism (sale and purchase offers) on the two mentioned markets but within the minimum and maximum limits established by law.

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 and 2010. Following Romania's affiliation to the European Green Certificate System, the E-RES producers may trade green certificates on the European Green Certificates Market. Until the national targets are reached, the green certificates may be traded only on the internal green certificates markets.

For each MWh delivered to the electricity grid, wind energy producers will receive two green certificates until 2017 and one green certificate as of 2018, while solar energy producers will receive six green certificates.

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

E-RES producers are granted priority access to the electric transportation and distribution grid to the extent that the National Energetic System's safety is not affected. Furthermore, the grid operators shall ensure the transmission and dispatch of the E-RES on a priority basis, the producers having the possibility to change the notifications during the operation day. However, in the recent published draft legislative proposal to amend the provisions of Law No. 220/2008 there are several amendments according to which the priority access to the grid will be eliminated and replaced with a guaranteed access to the electrical grid for the producers benefiting of the support scheme and which are selling their energy on the electricity market.

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

The 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 E-RES.

However, the Romanian market benefits from various incentives that are aimed at fostering investments (which are continually adapted to EC requirements) among which 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.

10. 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 may 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.

The entire Romanian territory is eligible for accessing financing from the above mentioned EU funds. The access to EU funds is regulated in the EU legislation, comprising general and certain specific regulations, as well as guidelines setting forth the rules in programming, managing, controlling and evaluating each initiative eligible under each EU fund. In addition to the EU legislation, the Romanian Government has enacted provisions for the management of the structural instruments.

The financing focuses mainly on small and medium-sized enterprises, however, large companies are also eligible in case they comply with the requirements of the specific financing instrument. The eligible activities for receiving financing from EU funds include acquisition of fixed assets (buildings, equipment) or of intangible assets (patents, trademarks and know-how); research and development; standardization and certification of companies.

In Romania there are six Sectoral Operational Programmes (SOPs) (Competitiveness; Development of Human Resources; Environment; Transport; Development of Administrative Capacity; and Technical Assistance) and one Regional Operational Program, through which structural funds are generally absorbed.

In general, for the production of electricity from renewable sources a Romanian investor may apply for structural funds from SOP Increase of Economic Competitiveness ("IEC"), Priority Axis 4 – Increasing energy efficiency and security of supply, in the context of combating climate change, Key Area of Intervention 4.2 – Valorisation of renewable energy sources (RES) for producing green energy, Operation: Support of investments in the modernisation and realisation of new electricity and thermal energy production capacities through valorisation of renewable energy sources.

In order to access such EU funds, the investor should comply with the specific requirements for the domain in question.

Such EU funds are not accessible to individuals, non-governmental organizations (NGOs) or to companies' associations. The

energy produced should be supplied in the transportation and distribution network to the end users or should be used by the economic agent, beneficiary of the fund.

SOP IEC is managed by the Management Authority for SOP IEC within the Ministry of Economy, Trade and Business Environment, and the implementation of the Priority Axis 4 shall be made by the Intermediary Organism for Energy functioning within the General Department for Energy, Oil and Gas of the Ministry of Economy, Trade and Business Environment.

As a general rule, the beneficiary has a maximum of three years to spend the funds, or otherwise risk automatic decommissioning of the financing. The system of financial support is based on the reimbursement of expenses incurred (no advance payments).

Annually specific amounts are allocated for each operation programme and priority axis. For example, for 2010, for SOP IEC financing wind farm projects there have been allocated RON420 million (representing approximately € 100 million).

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country 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 an 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.

Latest available official figures indicate that in June 2011 the share of renewable energy sources in the total gross internal electricity consumption was of approx. 32% out of which 30,1% hydro and 2,5% wind (Source: Transelectrica web-site).

In the near future, these figures are expected to register relevant changes in terms of wind energy as Transelectrica announced that connection contracts have been concluded for new wind power plants having capacities of 8255 MW and technical connection approvals have been granted for another 6909 MW. (Source: Translectrica web-site).

WHITE & CASE

Delia Pachiu

45 Nicolae Filipescu Street
020961 Bucharest,
Romania
T +40 (31) 224 8416
F +40 (31) 224 8401
E dpachiu@whitecase.com

Russia

Adam Smith

WHITE & CASE LLC

GENERAL

1. What is the nature and importance of the 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. This is mostly driven by Russia's interest in contributing to international efforts to address climate change.

In 2009 the Russian Government also 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 2010 – 1.5% of the total volume of generated electricity; in 2015 – 2.5%, and in 2020 – 4.5%. In addition, the Russian Government's Energy Strategy for the period up to 2030[2] (adopted in 2009) also addresses the development of renewable energy sources and energy-saving technologies.

In addition, in December 2010, the International Finance Corporation (IFC) officially launched its 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 though assistance in the establishment of a favourable regulatory regime, development of national potential and expanding access to financing.[3]

Hydropower potential

Hydropower is one of Russia's greatest energy resources. 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, at about 165 billion KWh/yr.[4] Hydro-electric plants account for 21% of Russia's total electric power production. Most of Russia's potential hydropower resources are located in Central and Eastern Siberia and in the Russian Far East. The North Caucasus and western Urals are also understood to have considerable hydropower potential.

Russian and foreign companies are now heavily exploring investment opportunities in the hydropower sector. For example, in October 2010, Rushydro, the state-controlled hydropower generator, approved an investment program for the period 2011-2013 in an amount of RUB 308 billion (RUB 109 billion for 2011). Rushydro is planning to complete a number of projects within the framework of this program, including the construction of the Boguchanskaya, Ust-Srednekanskaya, Irganaiskaya and Gotsatlinskaya hydro-electric

1 Government Decree No. 1-r, dated 8 January 2009;

2 Government Decree No. 1715-r, dated 13 November 2009;

3 IFC official press release, dated 9 December 2010;

4 Ibid. http://www.eng.rushydro.ru/industry/history;

plants, as well as certain small-scale hydro-electric plants, including the Chibit, Fiagdonskaya, Verknebalkarskaya and Zaragizhskaya plants.

Wind power potential

Russia has extensive wind resources, in particular along the Pacific and Arctic coasts and in the southern steppes, although in 2010 total installed wind power capacity was only about 16.5 MW.[5] Currently reported wind power projects in Russia include the construction of a wind power plant on Russkiy Island, near Vladivostok, the planned construction by Rushydro of a new wind farm in the Ura Bay, on the Barents Sea coast, and planned investment by Siemens in the construction of a number of wind power plants, in particular in the Republic of Kalmykia.[6] In addition, suitable sites have recently been identified for the country's largest planned wind facility near the city of Yeisk (Krasnodar region), on the shore of the Sea of Azov. The project is expected to begin operations with a capacity of 50 MW, rising eventually to 100 MW.[7]

Biofuels potential

Russia has approximately 22% of the world's forests located on its territory. Forests cover approximately 40% of the entire landmass of Russia. Currently, biomass products (waste, wood pulp and wood pellets) are only being exploited for energy to a limited extent. The potential of forest biomass has been estimated at 373.6 million tonnes of equivalent fuel.[8] Current biomass power plants include about 90 MW of generating capacity fuelled from refuse, and about another 600 MW burning peat.[9] It has been reported that the Ministry of Energy proposes to prioritise the use of bio resources for electric power generation.[10] Moreover, in June 2011, the Ministry of Energy and the Ministry of Agriculture agreed to develop a national program to support biofuel production in Russia.

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. Such projects are mostly supported by regional governments and financed by foreign investors. In particular, the Federal Forestry Agency has recently developed a list of priority projects for biofuel production in Russia. There are currently twenty investors from various regions in Russia that intend to establish biofuel production in the near future. 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.[11] Some of these projects are already in operation, including pellet production facilities in Tver Region with a capacity of 60,000 tonnes/year, and facilities in Omsk Region with a capacity of 20,000 tonnes/year, both operating since 2010.[12]

In addition, it is reported that in June 2011 the Ministry of Energy and the Chinese National Bioenergy Company signed an agreement to establish a joint venture to build power plants in rural areas of Russia using various types of biomass and biogas to generate electric power and heat.[13] There are also a number of

5 http://www.eprussia.ru/news/base/2011/59583.htm

6 http://www.rg.ru/2009/10/02/reg-jugrossii/veter-anons.html

7 http://www.renewableenergyworld.com/rea/news/print/article/2010/12/country-profile-russia

8 Article: *The use of renewable energy sources in RF may begin in April* published by Itar-Tass, 26 February 2010.

9 EBRD Renewable development initiative: Russia (country profile, 2009).

10 Article: *The use of renewable energy sources in RF may begin in April* published by Itar-Tass, 26 February 2010.

11 Article: *20 priority projects in forestry sector for biofuel production in Russia* published by IA Inforbio, May 2011.

12 Ibid.

13 http://russia-briefing.com/news/russia-and-china-to-create-green-energy-joint-venture.html/

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) to be constructed at Onega in the northern Arkhangelsk region has recently been approved.[14]

Geothermal power potential

Geothermal energy is used in Russia both for heat supply and electricity generation. Geothermal resources in Russia are located primarily in Kamchatka, the Kuril Islands, the Northern Caucasus and Kaliningrad region, having an estimated combined potential of up to 2000 MW of geothermal power generation.[15] Currently there is understood to be somewhere between 92-129 MW of geothermal power generation capacity in operation.[16] 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.[17] In June 2011, Rushydro announced that it had signed a cooperation agreement with Reykjavík Geothermal to build geothermal power plants in Russia with total installed capacity of up to 100 MW.[18]

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 has a total theoretical potential of 2,213 TWh/year, and is reported to be planning to establish an overall solar capacity of 150 MW by 2020.[19] 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.[20] It is also planned that a 1.2 GW solar power plant will be put into operation in the Omsk region in Western Siberia by 2012. In 2010 it was reported that LLC Hevel, a joint venture of Russian high-tech companies Renova and Rosnano, announced a plan to build a 12.3 MW solar power station in Kislovodosk[21]. In addition, 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.[22]

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 26 March 2003 No. 35-FZ (the "Electricity Law")[23]. Renewable energy sources so defined include:

14 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

15 http://www.geo-energy.org/pdf/reports/GEA_International_Market_Report_Final_May_2010.pdf

16 EBRD Renewable development initiative: Russia (country profile, 2009)

17 Report on Geothermal Energy Projects in Russia published in Bulletin of Russian Academy of Physical Science, No. 1 2009

18 Rushydro official press release, dated 15 June 2011

19 Article: *Sunless Russia seeks more solar energy* published in International Business Times, 8 October 2010

20 http://rusecounion.ru/ang_renew_91110

21 Article: *Russia to build its first solar power station* published by RIA Novosti, dated 3 November 2010

22 Hevel official press-release, dated 16 June 2011

23 Article 3 of the Electricity Law

- 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 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 generally governed by the Electricity Law, which sets out the main provisions for the trade in power generated through 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 electricity market, the Market Council.[24]

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 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.
- 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

[24] 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").

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.

- 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.

- Regulations on the qualification of generating facilities using renewable energy sources and the maintenance of the register of qualifying facilities, approved by the supervisory council of the Market Council on 3 October 2008 (the "Regulations on Qualification").

- 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 capacity not exceeding 25 MW and qualified as facilities using renewable energy sources, dated 20 October 2010 (the "Compensation Rules").

Also certain further legislation relevant to renewable energy is understood to be planned. In particular, a draft law on the use of alternative motor fuels has been prepared and submitted to the State Duma[25] for review. In addition, the Ministry of Agriculture and the Ministry of Energy, in the framework of International Economic Forum in Saint-Petersburg in June 2011, referred to a proposal for a law for the development of bioenergy in Russia.[26]

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.

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. Are tax advantages available to renewable energy generation companies?

As of 2010, 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 of 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 ½ to ¾ of the Russian Central Bank's refinancing rate (being, since 3 May 2011, 8.25%).

[25] The Lower House of the Russian Parliamentary

[26] Article: *The Ministry of Agriculture and the Ministry of Energy cooperate in the sphere of bio-fuel* published by Bio Energy, June 2011

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

The Electricity Law makes general provision for such guarantees[27], but not their actual implementation, which would require additional subordinate legislation. In particular, the Electricity Law requires that network companies should buy power generated from renewable energy sources for the purposes of compensating for line losses. However, the Electricity Law was recently amended with a view to supporting renewable generation through *capacity* (as opposed to power) purchase obligations.[28]

These obligations would benefit generating facilities qualifying as facilities using renewable energy sources. For this purpose, the Market Council treats a facility as operating on a basis of renewable energy sources if such facility:

- uses only renewable energy sources for generating purposes;
- is in operation;
- is connected to the grid and equipped with metering equipment as required by Russian law; and
- is included in the general scheme of location of generating facilities operating on a basis of renewable energy sources on the territory of Russia approved by the Ministry of Energy.

7. 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 makes general provision for an uplift on the wholesale market price for power to be applied to power generated by qualifying facilities. However, the corresponding implementing resolution has not yet been adopted by the Russian Government, and the government has commented that it may not be possible to introduce this mechanism at present due to current technical and other constraints.[29]

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

Power plants using renewable energy do not enjoy priority in connection, although there is provision for them to be granted subsidy from the federal budget towards connection costs. To date the Russian Government has not adopted the corresponding implementing resolution.

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

Russian legislation does not currently provide such incentives.

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

In addition to the measures already mentioned, the Policy Guidelines and Energy Strategy[30] 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.

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27 Article 32(3) and 33(3) of the Electricity Law

28 Federal Law No. 401, dated 28 December 2010 and Explanatory note to the proposal of this Law

29 Explanatory note to Federal Law No. 401, dated 28 December 2010.

30 Part III of the Policy Guidelines, Article 10 of Energy Strategy

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country 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.[31] Likewise, the percentage of power generated from renewable sources did not exceed 1% (8.5 billion KWH) of the total volume of generation.[32] We are not aware of any officially published statistics breaking down this aggregate figure by specific types of renewable energy source at a country scale.

As already noted, however, large-scale hydroelectric stations make a significant contribution to Russia's power generation capacity and production (at approximately 21% and 20%, respectively).

WHITE & CASE LLC

Adam Smith

4 Romanov Pereulok
125009 Moscow,
Russia

T +7 495 787 3002

F +7 495 787 3001

E adam.smith@whitecase.com

31 Part II of the Policy Guidelines

32 Ibid.

Slovakia

Zoran Draskovic
Marek Staron

WHITE & CASE s.r.o.

GENERAL

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

The energy mix of Slovakia has traditionally been dominated by conventional sources (in particular the nuclear and thermal energy), the only renewable source of any importance being the hydro power. Nevertheless, over the last few years the renewable sources have been gradually gaining on 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 was 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 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 "Ministry of Economy") in October 2010[2] implies that a major part of the increase in

[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").

[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").

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). The 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 the electricity generation in a sizeable manner (approximately 15 to 20%, depending on the 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 the 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 the 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. The 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 the electricity generation from biomass is represented by biogas plants. A few smaller ones 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 490 MW as of July 2011 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 aiming 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 100 kW located on the surface of buildings) as of July 2011.

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

[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.

connection of wind farms to the network. Following the considerable increase in the installed capacity of solar power plants (with the 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 the geothermal energy. It is currently used at a local level in several locations within Slovakia mainly for the production for 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).

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

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. and Act No. 136/2011 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.

6 Act No. 276/2001 Coll. on regulation in network industries, as amended (the "Network Industries Act").

7 Act No. 656/2004 Coll. on energy, as amended (the "Energy Act").

8 Decree of RONI No. 225/2011 Coll. establishing the price regulation in the electricity sector. This new price regulation decree, applicable for the first time to the price regulation proceedings for 2012, replaces decree of RONI No. 2/2008 as amended by decrees Nos. 7/2008, 2/2009, 7/2009, 2/2010 and 7/2011.

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 State Energy Inspection.

The Ministry of Economy bears the main responsibility for the formulation of the renewable energy policy. It effectively regulates the construction of new renewable energy facilities through issuing certificates on 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 the 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 the 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 from renewable energy sources in facilities with the total installed output of 1 MW and more (i.e. from small hydropower plants, wind power plants, solar plants, geothermal energy plants, biogas plants or biomass plants) are issued by RONI. Apart from that, RONI is also responsible for the price regulation of electricity generated from renewable sources and it 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).

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 consent of SEPS is required before the Ministry of Economy issues the 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.

INCENTIVES

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

No tax incentives are currently available. However, the 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.

[9] The Energy Policy is approved by the Government of the Slovak Republic based on a proposal prepared by the Ministry of Economy.

6. 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, whether directly or through a local distribution system. 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 the 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 20%. All facilities which qualify for this support will enjoy the right to the guaranteed off-take for 15 years from the year of their commissioning, reconstruction or upgrade (the cost of reconstruction or upgrade must exceed 50% of cost of a comparable new investment, except for hydro power plants with the installed capacity below 2 MW). Where the total installed capacity of energy facilities of an electricity producer is lower than 1 MW, the right to the guaranteed off-take will apply during the whole lifetime of the energy facility.

7. 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).

Under Decree of RONI No. 225/2011 Coll. which replaced the previous price regulation decrees of RONI, 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 and is expected to reach EUR 55.75/MWh in 2011 (as cited by RONI in a presentation on the price regulation in 2011 at a conference on solar energy held on 8 October 2010, available at http://www.siea.sk/materials/files/poradenstvo/aktuality/seminar_fotovoltika_elosys_2010/cenova_regulacia_URSO_elosys_2010.pdf).

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 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 from1 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

To the extent the construction of a new facility was supported from schemes financed from the state budget, the regulated tariffs will be reduced (unless such support is used to carry out measures aimed at achieving compliance with the applicable emission limits) as follows:

- support up to and including 30% of the total acquisition costs, by 4 %,
- support up to and including 40% of the total acquisition costs, by 8 %,
- support up to and including 50% of the total acquisition costs, by 12 %, and
- support of more than 50% of the total acquisition costs, by 16 %.

In order to ensure 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 90% of the regulated tariffs applicable in a given year. As of 1 February 2011, the Renewable Energy Act provides that 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 the total installed capacity of up to and including 10 MW;
- electricity corresponding to the proportionate amount of electricity produced in a facility of an electricity producer with the total installed capacity of more than 10 MW, with the proportion being calculated as the ratio of 10 MW to the total installed capacity;
- the total amount of electricity produced in a facility of an electricity producer, which uses wind energy as a source, with the 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 the total installed capacity of more than 15 MW, with the proportion being calculated as the ratio of 15 MW to the total installed capacity;
- all electricity from renewable energy sources produced by cogeneration with the total installed capacity of more than 10 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 the 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.

A further restriction applies with regard to the electricity produced in biomass or bioliquids combustion and co-combustion facilities. In such case, the electricity producer will be able to claim the additional payment only if the electricity is produced by

cogeneration of electricity and heat and if biomass and bioliquids complies with the prescribed quality requirements and parameters. Certain further restrictions apply to the generation of electricity by combustion of biogas.

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

Yes, the renewable energy based power plants enjoy the 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 the 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.

The 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 the 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. The grid connection costs and costs of extension of the distribution system will be borne by the producer of electricity from renewable sources and the relevant distribution system operator in the ratio 90:10.

9. 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.

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

Renewable energy based power plants with the total installed capacity of less than 1 MW (solar power plants have the benefit of this support measure only if their installed capacity is less than 100 kW) are also supported by way of assumption of the responsibility for imbalances caused by the electricity producer (solar power plants have the benefit of this support measure only if their installed capacity is less than 100 kW).[1] 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 1 MW. 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

[1] 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.

the period between 2007 and 2013 being the Operational Program Competitiveness and Economic Growth managed by the Ministry of Economy.[2] Under this program, the support can be provided to projects involving the construction, upgrade and reconstruction of small water power plants with the maximum installed capacity up to 10 MW, power plants using biomass or biogas with the minimum installed capacity of 50kW and 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.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

	Gross Electricity Production in 2008 (in GWh)	% of Gross Electricity Production in 2008
Total	28,962	100
Renewable Energy Sources		
Hydro All Plants	4,223	14.58
of which: hydro 1 MW (net of pumping)	58	0.20
hydro 1-10 MW (net of pumping)	108	0.37
hydro 10+ MW (net of pumping)	3,874	13.38
pumped storage[3]	202	0.70
Geothermal	-	-
Solar	-	-
Wind	7	0.02
Municipal Solid Wastes (Renew)	22	0.08
Wood/Wood Wastes/Other Solid Wastes	480	1.66
Sewage Sludge Gas	12	0.04
Other Biogas	3	0.01

Source: The data on gross electricity production in GWh are cited according to the publication Energy 2008, published by the Statistical Office of the Slovak Republic in December 2009.

2 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.

3. Under the Renewable Energy Act, electricity produced in pumped storage hydropower plants is not counted towards electricity produced from renewable energy sources.

WHITE & CASE s.r.o.	
Zoran Draskovic	**Marek Staron**
Hlavné námestie 5 811 01 Bratislava Slovak Republic	Hlavné námestie 5 811 01 Bratislava Slovak Republic
T +421 2 5441 5100	T +421 2 5920 6312
F +421 2 5441 6100	F +421 2 5441 6100
E zdraskovic@whitecase.com	E mstaron@whitecase.com

South Africa

Shamilah Grimwood
Zahra Omar

WHITE & CASE

GENERAL

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

South Africa has one of the highest per capita greenhouse gas emission rates in the world due to its dependence on energy generated from coal, currently approximately 10 tonnes per capita. Coal-fired electrical energy comprises approximately 86% of South Africa's total electricity generation mix.

South Africa is a signatory to the United Nations Framework Convention on Climate Change 1992 (the "UNFCCC") and has been classified as a Non-Annex developing country in terms of the Kyoto Protocol, accordingly, South Africa is not bound by any mandatory targets for reducing greenhouse gas emissions. Nevertheless at the 2009 Copenhagen conference of the parties ("COP 2009"), South Africa committed to reduce its greenhouse gas emissions by 34% by 2020 and by 42% by 2025. The seventeenth conference of the parties or COP 17 is scheduled to be held in Durban, South Africa, in November this year.

In 2003, the then Department of Minerals and Energy published the White Paper on Renewable Energy (the "Renewable Energy White Paper") on South Africa's renewable energy policy. The Renewable Energy White Paper proposes the introduction of fiscal and financial support mechanisms to promote the uptake of renewable energy generation technologies and sets a target of 10,000,000 MWh or approximately 4% for the renewable energy portion of the total electrical energy demand projected for 2013 (to be generated mainly from biomass, wind, solar and small-scale hydro). This 10,000,000 MWh target is currently under review by the Department of Energy and is expected to be increased quite significantly.

In May 2011, the Minister of Energy issued a draft Integrated Resource Plan for the period 2010 to 2030 which she has recommended for adoption by the government (the "IRP 2010-2030"). The IRP 2010-2030 assesses South Africa's electrical energy needs for the next twenty years, specifically allocating 41.5% of South Africa's total electricity generation capacity for renewable energy technologies by 2030. Significantly, IRP 2010-2030 confirms South Africa's base case commitment to feed-in tariffs for up to 1,025 MW of renewable energy generation capacity by 2015.

In March and October 2009, the National Energy Regulator of South Africa (the "NERSA"), which is responsible for giving effect to national policy and approving electricity tariffs, published guidelines for a renewable energy feed-in tariff programme, proposing feed-in tariffs for electricity generated from new generation capacity utilising qualifying renewable energy technologies or REFITs (the "2009 REFIT Guidelines"). The 2009 REFIT Guidelines further recommended a phased programme for the licensing of renewable energy generators and the nomination of the incumbent national electricity utility, Eskom Holdings SOC Limited ("Eskom"), as the renewable energy purchasing agency or REPA in line with the national executive's earlier policy directives on a single buyer market. The recommended qualifying renewable energy technologies are landfill gas power plants, small hydro power plants (less than 10MW), wind power plants, concentrating solar power plants (CSP), large scale photovoltaic (PV) systems, biogas, and biomass.

In September 2010 the Department of Energy issued a request for information to potential developers of renewable energy projects to participate in the REFIT programme as announced by the NERSA. Over 380 responses were received by the Department of Energy by the December 2010 cut-off providing information on over 20 GW of renewable energy generation capacity with wind power projects and solar photovoltaic projects taking up over two-thirds of the responses (in GW).

Controversially, in March 2011, the NERSA issued a consultation paper announcing its intention to review the 2009 REFIT Guidelines and in particular the REFITs. The consultation paper proposes significant reductions in the REFITs, in the range of 7% to 41%, and provides for the REPA to be a national organ of state to be identified by a determination to be made by the Minister of Energy. In addition, media releases by the Department of Energy in June and July 2011 indicate a possible reversal of government policy on the use of feed-in tariffs in South Africa and the status of the 2009 REFIT Guidelines and the NERSA tariff review is uncertain. According to these media releases, the anticipated tender programme for renewable energy generators will require bidders to compete on renewable energy tariffs on the basis that fixed or feed-in tariffs will not be available for this tender programme.

[* *US$ 1 : South African Rand 6.77*]

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, "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 on renewable energy is in a state of flux and significant changes are underway. These changes reflect the government's evolving policy on the managed liberalisation of the electricity supply sector to provide for the staged introduction of independent power producers 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 NERSA which is responsible for giving effect to national energy policy and planning and approving electricity tariffs, and Eskom which has been designated by the national executive as the current single buyer of electricity.

A critical element of this regulatory restructuring is the proposed establishment of an independent system and market operator (the "ISMO"). A draft bill on the establishment of the ISMO was released for public comment in May 2011. In terms of the draft bill the transmission business within Eskom and related assets will be transferred to the ISMO, leaving Eskom with its existing generation and distribution portfolio, and the

ISMO will be exclusively empowered as the single wholesale buyer and re-seller of electricity. The ISMO and Eskom will be held by separate shareholding ministries, the Ministry of Energy in the case of the ISMO and the Ministry of Public Enterprises in the case of Eskom. If this draft bill is enacted and brought into effect, the ISMO will replace Eskom as the single buyer of electricity and become a key role player in the renewable energy market.

Currently, the key regulatory instruments are:

- the Renewable Energy White Paper which sets forth national policy on renewable energy;

- the Electricity Regulation Act, 2006, which:

  - empowers the Minister of Energy to undertake integrated resource planning on electricity generation, transmission and distribution capacity and maintain the integrated resource plan (the "IRP");

  - empowers the NERSA to issue rules designed to implement the national government's electricity policies and the IRP; and

  - appoints the NERSA as the economic regulator of the electricity supply industry with responsibility for licensing electricity generation, transmission, distribution and trading; and

- the regulations and rules made by the Minister of Energy and the NERSA, respectively, under the Electricity Regulation Act, 2006, including:

  - the IRP 2010-2030 which sets forth the national energy generation plan including the renewable energy generation plan; and

  - the regulations on new generation capacity of May 2011, which replaced the regulations on new generation capacity of August 2010, (the "New Generation Capacity Regulations").

The Electricity Regulation Act, 2006 empowers the Minister of Energy in consultation with the NERSA to determine whether new generation capacity is needed to ensure the continued uninterrupted supply of electricity in South Africa, the types of technology and primary energy sources to be utilised for such new generation capacity, whether such capacity should be provided by state-owned utilities or independent power producers ("IPPs") and whether such new generation capacity and related electricity will be subject to any "must buy" obligations on the part of any state-owned utility. The New Generation Capacity Regulations regulate the procedures to be implemented in relation to the procurement of new generation capacity which includes the requirement for feasibility studies for yet uncommitted generation capacity in the IRP. These feasibility studies entail a public sector comparator analysis for comparing IPP and state owned utility "own-build" options in respect of new generation capacity based on value for money considerations.

Although enacted in 2008, only minor portions of the National Energy Act, 2008 have come into effect. This Act is principally concerned with the establishment of mechanisms on the collection, collation and analysis of energy data, integrated energy planning (upstream and downstream and taking into account all sectors of economy) and the establishment of the South African National Energy Development Institute which will be responsible for energy research and development and devising measures for improving energy efficiency.

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

The key role players in this regulatory restructuring are:

- the Minister of Energy who is responsible for coordinating national energy policy and planning through the preparation and updating of the IRP;
- the NERSA which is responsible for giving effect to national energy policy and planning, the IRP and approving electricity tariffs;
- Eskom in its capacity as the single buyer of electricity and the owner and operator of the transmission system; and
- following the enactment and coming into effect of the ISMO bill, the ISMO, which will replace Eskom as the single buyer of electricity and the owner and operator of the transmission system.

INCENTIVES

5. 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 2.5 cents per kWh (or 37 US cents/kWh*) is imposed on non-renewable energy generators, such as Eskom. At the time this tax was introduced it was justified on the basis that it would be applied to fund renewable energy developments. However, currently, there is no legislated provision for the funds derived from this tax or any portion thereof to be ring-fenced and applied to fund renewable energy developments.
- 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.
- To incentivise the uptake of Clean Development Mechanism ("CDM") projects in South Africa, the proceeds received on the disposal of the carbon credits derived from projects that qualify as CDM projects in terms of the Kyoto protocol (commonly referred to as CERs) will be exempt from normal tax and capital gains tax.

Following South Africa's commitments at the COP 2009, the National Treasury published a discussion paper for public comment in December 2010 on additional carbon taxes recommending an emissions tax on measured carbon dioxide emissions in the range of R75 (or US$ 11) to R200 (or US$ 30) per tonne of carbon dioxide emissions using 2005 prices as a base, in preference to an upstream tax on fossil fuel inputs or a downstream tax on the outputs generated from fossil fuels. The detailed features of, and the timeline for the introduction of, the carbon tax is expected to be announced in the fiscal year commencing April 2012.

[* *US$ 1 : South African Rand 6.77*]

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

Under the Electricity Regulation Act, 2006 read with the New Generation Regulations, the Minister of Energy may issue a determination for the procurement of new generation capacity from IPPs and designating the buyer of the electricity generated from such new generated capacity. Such determination is expressed in the Electricity Regulation Act, 2006 to be binding on the seller and buyer of the electricity from new generation capacity procured under the Electricity Regulation Act, 2006.

For the time being, Eskom as the incumbent state-owned utility is likely to be designated by the Ministerial determination as the sole buyer of electricity under all IPP programmes procured by the Department of Energy on behalf of Minister of Energy including IPP programmes in respect of renewable energy generation. Following the enactment and coming into effect of the ISMO bill, and the completion of the asset transfer arrangements thereunder, the ISMO will replace Eskom as the single wholesale buyer and re-seller of available capacity and electricity supplied by IPPs under programmes initiated by the Department of Energy.

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

The NERSA's 2009 REFIT Guidelines proposes fixed or feed-in tariffs for qualifying renewable energy projects. The REFITs published in these guidelines are currently under review. The NERSA consultation paper of March 2011 proposes the following REFITs in place of the REFITs published by the NERSA in 2009:

- wind power plants: 14 US cents* / kWh
- landfill gas power plants: 8 US cents* / kWh
- small hydro power plants (less than 10MW): 10 US cents* / kWh
- CSP trough without storage: 29 US cents* / kWh
- CSP trough with storage: 27 US cents* / kWh
- CSP tower with storage: 21 US cents* / kWh
- Photovoltaic: 34 US cents* / kWh
- Biomass: 16 US cents* / kWh
- Biogas: 12 US cents* / kWh

subject to annual adjustment for inflation applying the South African consumer price index.

However, as mentioned above, media releases by the Department of Energy in June and July 2011 indicate a possible reversal of government policy on the use of feed-in tariffs in South Africa and the Department's anticipated tender programme for renewable energy generators will instead require bidders to bid and compete on renewable energy tariffs as fixed tariffs will not be available for this tender programme.

[* *US$ 1 : South African Rand 6.77*]

8. Do the 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 Electricity Regulation Act, 2006, any transmission and distribution licensee must to the extent provided for in its license 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.

Ultimately what may discourage investment in the renewable energy sector are commercially prohibitive connection and use of system costs to the extent that these costs cannot be passed through to the buyer under power purchase arrangements. Embedded generators (namely, those connected to a distribution network) are directly liable for deep connection costs, being the upstream costs of connecting these generators to the network, even though the benefits of the deep connection works to connect these generators may have beneficial impacts for other customers.

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

No.

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

The primary incentive is the premium incorporated in the REFITs, if these are retained. As noted above the REFIT range is between 8 to 34 US cents* / kWh, which compares favourably with the Eskom average electricity tariff of approximately 31.9 cents per kWh or approximately 5 US cents* / kWh (2009/2010: average across residential, industrial and local authority usage).

In addition, renewable energy generators are exempt from liability in respect of the environmental levy / carbon tax on renewable energy generation.

Certain tax incentives have been introduced to stimulate the growth of renewable energy projects in South Africa (*see Question 5 above*).

[* *US$ 1 : South African Rand 6.77*]

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

South Africa's generation mix (by installed capacity) is made up of coal (± 86%), nuclear (± 4.3%), hydropower including pumped storage and conventional (± 4.5%), liquid fuels / gas (± 5%) and wind (± 0.1%).

The percentage of electricity currently generated from renewable energy sources as a proportion of the total electricity generation mix is less than 0.1% (excluding hydro-power). This is electricity generation is from wind power.

Under the IRP 2010-2030 it is forecast that by 2030 renewable energy will contribute 18,925 MW out of the total annual energy forecast of 45,637, i.e. approximately 41.5%. The IRP 2010-2030 provides that the 18,925 MW will be allocated between the following type of renewable energy sources:

- Wind – 9200 MW or 48.61%
- CSP – 1200 MW or 6.34%
- Landfill, hydro – 125 MW or 0.66%
- Solar PV – 8400 MW or 44.39%

WHITE & CASE	
Shamilah Grimwood 54 Melville Road Illovo, Johannesburg, 2196 Sandton 2146 South Africa T +27 (11) 884 7689 F +27 (11) 884 7229 E sgrimwood@whitecase.com	**Zahra Omar** 54 Melville Road Illovo, Johannesburg, 2196 Sandton 2146 South Africa T +27 (11) 884 7689 F +27 (11) 884 7229 E zomar@whitecase.com

Turkey

Av. Dr. Çağdaş Evrim Ergün
Av. Göknil Emdi

ÇAKMAK AVUKATLIK BÜROSU

GENERAL

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

Turkey has a large potential for renewable energies. Turkey has an annual biomass potential of approximately 32 mtoe; a gross annual hydro potential of 433,000 GWh, which is almost 1% of the total world potential; wind power capacity of approximately around 10,000 MW; solar energy potential which is estimated to be 26.4 million toes (thermal) and 8.8 million toes (electricity); and geothermal potential of approximately 38,000 MW.[1] Therefore, the promotion of renewable energy resources in the generation of electrical energy is particularly important for Turkey because of, among other reasons, reducing the dependence on energy imports, strengthening the security of the energy supply, protecting the environment, and creating job opportunities.

As of July 2011, the Energy Market Regulatory Authority ("EMRA") has issued 148 wind power, 796 hydropower, 14 geothermal and 16 biomass licenses to power plant projects in Turkey. There are also 455 wind power license applications currently pending before EMRA.

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

The renewable energy resources covered by the Turkish Renewable Energy Law No. 5346[2] (the "Renewable Energy Law") are wind, solar, geothermal, biomass, biogas (including landfill gas), wave, stream, tidal, river and arc type hydroelectric generation facilities, and the 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 Turkey has been amended with Law No. 6084, which entered into force on 8 January 2011(the "2011 Amendment"), and with the entry into force of this law, the long awaited amendments to Turkey's renewable regime has finally become law as explained below.

Although geothermal energy is also covered by the Renewable Energy Law, there is a separate law specific to geothermal energy, namely the Geothermal Energy and Natural Minerals Law No. 5686.[3]

The Electricity Market Law No. 4628[4] (the "EML"), also includes several provisions which are generally or specifically applicable to renewable energy sources.

The Electricity Market Licensing Regulation[5] also sets forth a number of provisions aimed at

1 Mustafa Balat, *The Use of Renewable Energy Sources for Energy in Turkey and Potential Trends, Energy Exploration & Exploitation*, August 2004, vol. 22, no. 4, pp. 241-257.

2 Published in the Official Gazette No. 25819 dated 18 May 2005.

3 Published in the Official Gazette No. 26551 dated 13 June 2007.

4 Published in the Official Gazette No. 24335 dated 3 March 2001.

5 Published in the Official Gazette No. 24836 dated 4 August 2002.

promoting the utilization of renewable energy resources in the generation of electrical energy.

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

EMRA is the competent administrative authority responsible for regulation and supervision of the electricity market. The EML authorizes EMRA 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.

INCENTIVES

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

No specific tax advantage is applicable to renewable energy companies.

6. 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 the electricity generated by renewable energy companies. It provides that electricity retail sellers are required to purchase a certain percentage of the amount of electricity that they sold in the previous year from the entities holding a renewable energy resources ("RER") Certificate. Such purchase guarantee is applicable for the first 10 years of operation of all RER certificate holders.

Before the 2011 Amendment, the retail sale license holders were subject to the purchase obligation. The 2011 Amendment, however, uses the expression of "suppliers that supply electricity to end consumers" instead of retail sale license holders. Accordingly, since the Electricity Market Law defines the term "supplier" as covering cover generation companies, auto-producers, and auto-producer group companies and wholesale companies in addition to retail sellers, the new law may be interpreted as widening the scope of the entities subject to the purchase obligation, to the extent that they sell electricity to "consumers", i.e., those users that purchase electricity for their own use.

Before the Amendment, retail sellers were required to sign bilateral energy purchase agreements. The 2011 Amendment, however, sets 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 RER certificate holders will participate, rather than executing separate bilateral agreements for each sale transaction between each supplier and RER certificate holder.

According to the 2011 Amendment, the Market Financial Settlement Centre ("MFSC") shall determine (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 shall be determined and announced for each respective invoice period.

The purchase obligation ratio of each supplier shall be 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 shall be calculated by multiplication of the purchase obligation ratio of each supplier with the total price to be paid to the RER

Certificate holders and notified to the parties and invoiced to the related supplier by MFSC. The price collected by MFSC shall be paid pro rata to the related RER certificate holders. A Regulation governing the principles and procedures of this implementation has also been issued by EMRA on 21 July 2011. The RER certificate holders are eligible to participate in this program on an annual basis; *i.e.*, once participated they cannot leave the program during the year and participation in the program is allowed only at the beginning of each calendar year. RER certificate holders are not required to participate in the program. Those who do not wish to participate in the program sell electricity to the liberal 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.

7. 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. Prior to the 2011 Amendment, the minimum price was the average wholesale price in the previous year announced by EMRA. However, such average price could not be lower than 5-5.5 Euro Cent/kWh range.

The new minimum price guarantee amounts brought with the 2011 Amendment are more generous, especially for geothermal, solar and biomass.

Set forth below are the new fixed guaranteed prices under the 2011 Amendment:

	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. Note that the guaranteed prices before the Amendment were based on "euro cents/KWh" and are now based on "US dollar cents/KWh".

These figures are envisaged to apply only for the power plants which shall be commissioned on or before 31 December 2015. The fixed guaranteed prices and the terms applicable for the power plants to be commissioned after 31 December 2015 shall be regulated by Council of Ministers' Decrees, but such prices shall not exceed the above-stated prices.

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

Article 38 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.

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

The 2011 Amendment includes a domestic production incentive for projects commissioned by 31 December 2015 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 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 the renewable energy producers to be commissioned after 31 December 2015. A regulation has been issued by the Ministry of Energy and Natural Resources (MENR) regarding the procedures and principles for definition of the scope of domestic production, its standards, certification and related inspection procedures on 19 June 2011.

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

Article 12(4) 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 one percent of the license acquisition fee and are exempted from the annual license fee payment requirement 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 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 Renewable Energy 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. A 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 2015.

The 2011 Amendment also envisages the following incentives for the 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 the 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 the renewable energy producers.

- EMRA has issued a regulation regarding the procedures for application, permitting, inspection, technical and financial matters for renewable energy based generation facilities within the scope of Article 3(3) of the Electricity Market Law (i.e., renewable energy based generation facilities with a minimum established power of 500 KW and micro cogeneration facilities exempt from the obligation to obtain a license and establish a special purpose company) on 21 July 2011. Individuals and legal entities generating electricity within the scope of this article shall 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

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

There is no official data published by the Ministry of Energy and Natural Resources for 2011 with respect to the electricity generated based on each type of renewable energy source. However, pursuant to the 2010 data published by the Ministry of Energy and Natural Resources and the Turkish Electricity Transmission Company, the electricity generated based on each type of renewable energy source and the installed capacities are as follows:

1. Total Installed Capacity of Turkey for 2010 (MW):

Thermal	32,317
Wind	1,320
Hydraulic	15,831
Geothermal	94
TOTAL	49,562

2. Total Electricity Generation Based on Each Type of Renewable Energy Source for 2010:

	Hydraulic	**Wind + Geothermal**
Electricity Generation (GWh)	51,795.5	3,584.6

3. Installed Capacity Scenario for the following years (MW):

	2011	2012	2013	2014	2015	2016	2017	2018
Geothermal	85	85	85	85	85	85	85	85
Biogas	60	60	60	60	60	60	60	60
Hydraulic	18058	19877	19877	19877	19877	21077	21077	21077
Wind	1012	1012	1012	1012	1012	1012	1012	1012

4. Electricity Generation Scenario for the following years (GWh):

	2011	2012	2013	2014	2015	2016	2017	2018
Geothermal	587	587	587	587	587	587	587	587
Biogas	399	429	429	429	429	429	429	429
Hydraulic	59657	65882	68787	68738	68699	72577	72577	72577
Wind	3176	3663	3663	3663	3663	3663	3663	3663

ÇAKMAK AVUKATLIK BÜROSU

Av. Dr. Çağdaş Evrim Ergün

Piyade Sokak Portakal Çiçeği Apt. No:18/3 Çankaya, Ankara
Türkiye
T +90 312 442 46 80
F +90 312 442 46 90
E c.ergun@cakmak.av.tr

Av. Göknil Emdi

Piyade Sokak Portakal Çiçeği Apt. No:18/3 Çankaya, Ankara
Türkiye
T +90 312 442 46 80
F +90 312 442 46 90
E g.emdi@cakmak.av.tr

United Arab Emirates

Deema Ghosheh
Saul Daniel

WHITE & CASE LLP

GENERAL

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

The UAE has only recently been involved in renewable energy but is pursuing ground breaking renewable energy and energy efficiency programs. Under Abu Dhabi Law No. 22 of 2007, the Abu Dhabi Future Energy Company ("ADFEC") was formed as a wholly-owned entity of the Mubadala Development Company, the business development arm of the Abu Dhabi government. ADFEC is mandated to develop and execute the Masdar Initiative ("Masdar") which is the primary vehicle by which the Abu Dhabi government is engaging in the renewable energy sector. Specifically ADFEC, working through Masdar, is responsible for investing in and managing commercial and industrial projects in nearly all fields of renewable energy.

ADFEC core components include:

Masdar Institute: a graduate-level research - driven institute in Abu Dhabi specializing in advanced energy and sustainability-related technologies.

Masdar Research Network: a unique collaborative global research network driving advances in sustainable energy and environmental solutions, together with six leading universities and scientific research institutes from Asia, Europe, and North America.

Innovation & Investment Unit: a finance and development unit to fund innovation, demonstration projects and external investment in promising new energy or sustainability-related technologies and companies (such as through the $250 million Masdar Clean Tech Fund).

Special Projects Unit: a strategic development unit focused on large-scale, capital-intensive projects able to significantly advance the Masdar Initiative as well as kickstart sizeable new businesses in alternative energy, via a combination of Abu Dhabi based production ventures and international acquisitions.

Carbon Management Unit: a regional pioneer in the development of carbon projects under the Kyoto Protocol's Clean Development Mechanism, building a broad portfolio of assets involved in carbon capture, sequestration and carbon credit trading and further enhancing Abu Dhabi's record of environmental stewardship.

Special Economic Zone: an integrated, synergistic community housing the Institute campus, research labs, commercial offices and support facilities in an iconic "green" science park, combined with an associated manufacturing zone for the commercialization and production of new advanced-energy technologies, products and services.

Masdar City has also been appointed as host to the headquarters of the newly founded International Renewable Energy Agency (IRENA).

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

Not applicable.

REGULATION

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

Abu Dhabi Law No. 22 of 2007 under which ADFEC was formed and is mandated to develop and execute the Masdar Initiative which is the primary vehicle by which the Abu Dhabi government is engaging in the renewable energy sector.

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

Abu Dhabi Future Energy Company.

INCENTIVES

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

No tax is applicable in the U.A.E.

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

No such purchase guarantee is available.

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

No such price guarantee is available.

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

No such priority is available.

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

No such incentive is available.

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

Masdar City is the world's first carbon neutral, zero-waste city. Currently under construction, it is a Free Zone cleantech cluster which will host academics, researchers, students, entrepreneurs and financers as well as more than 1,500 companies who will have offices, research centers and operations within the city walls. They will benefit from 100 percent foreign ownership, zero taxes, zero import tariffs, zero restrictions on capital movement and among the strongest intellectual property protection in the region.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

Not available.

WHITE & CASE LLP	
Deema Ghosheh 16th Floor, C1 Tower Six Tower Complex Bainuna Street, Al Abu Dhabi United Arab Emirates T +971 2 495 0 131 F +971 2 495 0 150 E dghosheh@whitecase.com	**Saul Daniel** 16th Floor, C1 Tower Six Tower Complex Bainuna Street, Al Abu Dhabi United Arab Emirates T +971 2 495 0 123 F +971 2 495 0 150 E sdaniel@whitecase.com

United Kingdom

Tallat Hussain
Tamiko Mackison

WHITE & CASE LLP

GENERAL

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

The use and generation of renewable energy is considered to be of paramount importance in the UK's current struggle against climate change and greening the UK economy.

It is recognized that the shift to a low-carbon, 'green economy' will require the adoption and implementation of comprehensive environmental objectives and effective policy measures supporting them, including:

- The Climate Change Act, which establishes a reduction of UK 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).
- 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 (announced in the 2011 Budget),
- Electricity market reform
- the UK Green Deal (for domestic energy efficiency), and
- Government support for carbon capture and storage technology development (currently anticipated at up to £1 billion).

In fact, the UK seeks to be the first country in the world to create a bank dedicated to the green economy. The Green Investment Bank (GIB) was established to aid sectors such as offshore wind, non-domestic energy efficiency and waste (including energy-from-waste), with a potential to grow beyond these to other renewable power sources.[1]

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 the reduction of greenhouse gas emissions. The UK is considered to have significant potential for wind energy (hosting one of the world's largest offshore wind farms), and one of the greatest potential wave energy resources.

Recently, four major pieces of policy have determined the UK Government's approach to renewable energy: the Stern Report on 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) and 'Smarter Grids: The Opportunity' (2009). The Renewable Energy Strategy[2], which addresses the UK's

[1] In the 2011 Budget, the UK Government announced that the initial capitalisation of the GIB will be £3 billion and that it will begin operation in 2012-13. (Speech by Nick Clegg to the Climate Change Capital Advisory Group: see "*www.climatechangecapital.com/media/209268/deputy%20prime%20ministers%20speech.pdf)".*

[2] This reflects the UK's commitments under the 2009 European Community Renewable Energy Directive,

obligations toward the EU achieving its 20% renewables target by 2020, sets a target of 15% of the UK's energy supply coming from renewable sources by 2020. To achieve this, the government is targeting approximately 30% renewable sources for electricity generation, 11% for heat and 10% for transportation.[3] The Low Carbon Transition White Paper commits to greenhouse gas emission cuts of 18% on 2008 levels by 2020 by, amongst other things, substantially increasing the requirement for electricity suppliers to sell renewable electricity.

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).[4] The use and generation of renewable power, along with energy efficiency, is considered essential for achieving this goal. One of the tools to effect this policy is the system of a 'carbon budget', which allows for only a certain amount of greenhouse gases to be released by the UK over a certain period. This means that an increase in emissions in one industry will require a mirrored decrease in emissions in another.

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 the availability of new technologies (such as emerging renewable technologies).[5] The Energy Act promotes the UK's long-term energy and climate change strategy (along with the Climate Change Act 2008 and Planning Act 2008, which is discussed further below).

The UK Renewables Obligation, which is translated into secondary legislation in the form of the Renewable Obligation Order (discussed further below), is considered the main support for renewable power generation in the UK, providing, amongst other things, a financial incentive for the generation of energy from renewable sources.[6] It is credited with increasing the volume of renewable power generated in the UK since its inception.

The Energy Bill, which provides for energy efficiency in homes and businesses, is designed to secure low-carbon energy supplies and a fair playing field for energy companies, had Committee sessions in May of this year and seeks to achieve Royal Asset this summer in order to be in force by the end of 2012.

which requires Member States to ensure they each have a 2020 energy consumption target in line with the European Community's target of 20% renewable energy sources by 2020 and that the share of energy from renewable sources in the transport sector contributes at least 10 % of final energy consumption in that sector by 2020. 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.

3 See also *"www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/renewable/policy"*.

4 Section 1(1), Climate Change Act 2008, Ch. 27, Part 1.

5 See also *"www.decc.gov.uk/en/content/cms/legislation/energy_act_08"*.

6 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"*.

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; and
- other 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[7].

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").[8]

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 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'[9] 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 its is diverse, safe, secure and affordable and incentivising low carbon investment and deployment;

7 Section 82(7), Energy Act 2004 Part 2, Ch. 1.

8 Utilities Act 2000, Ch. 27, Part V (amending the Electricity Act 1989).

9 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 instalments on their energy bills subsequently.

- 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[10].

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[11] 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). We are coming up to the end of the first carbon budget which was set for 2008 – 2012.[12] The Committee on Climate Change, an independent body established by and advising the Government on carbon budgets, reducing emissions and researching into climate change, stated in a letter dated March 2011 that the first carbon budget was likely achievable, owing to the recession and subsequent decrease in emissions[13]. The Act also confers powers to establish trading schemes for the purpose of limiting greenhouse gas emissions or encouraging activities that reduce such emissions, and addresses adaptation to climate change impacts, all of which rely greatly on the contribution of renewable power[14];

- the Energy Act 2008[15], which drives forward the use of new technologies (such as carbon capture and storage and emerging renewable technologies), increase the ways in which the UK generates electricity, helps the electricity industry lower its carbon emissions, 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 latter by the Renewable Heat Incentive (Amendment to the Energy Act 2008) Regulations 2011)[16];

- the Planning Act 2008[17], which makes provisions for infrastructure in Renewable Energy Zones (being areas outside the UK's territorial sea to be exploited for energy production)[18];

10 See "*www.decc.gov.uk/en/content/cms/about/our_goals/our_goals.aspx*".

11 Brought into force by the Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order 2009 No. 1258.

12 Brought into force by the Carbon Budgets Order 2009 (SI 2009/1259) and the Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order 2009 (SI 2009/1258).

13 See "*http://hmccc.s3.amazonaws.com/Letter_Lord%20Turner_Chris%20Huhne%20MP_220311.pdf*".

14 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).

15 Brought into force by the Energy Act 2008 (Commencement No. 1 and Saving) Order 2009 No. 45 (C. 4).

16 Related legislation includes: Feed-in Tariffs (Specified Maximum Capacity and Functions) (Amendment) Order 2011 (SI 2011/1181); Energy Act 2008 (Commencement No 5) Order 2010 (SI 2010/1888); Energy Act 2008 (Consequential Modifications) (Offshore Environmental Protection) Order 2010 (SI 2010/1513).

17 Brought into force by the Planning Act 2008 (Commencement No. 1) (England) Order 2009 No. 1303 (C. 70).

18 As defined in section 84(4), Energy Act 2004, Part 2, Ch. 2.

- the Planning and Energy Act 2008[19], 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; and

- the Utilities Act 2000[20], 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[21].

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

The principal regulatory body in respect of renewable power is the Office of the Gas and Electricity Markets ("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[22]:

- 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:

- the Renewables Obligation Smart Meters[23];

- Offshore Electricity Transmission for renewable and non-renewable sources[24];

- the administration of Government environmental programmes (e.g. the Renewables Obligation, Climate Change Levy exemptions and the Carbon Emission Reduction Target[25], 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 Renewable Heat Incentive (discussed further below)[26].

19 See *"www.opsi.gov.uk"*.

20 Brought into force by the Utilities Act 2000 (Commencement No. 1 and Saving) Order 2000 No. 2412 (C. 67).

21 Related legislation includes: Electricity and Gas (Carbon Emissions Reduction) (Amendment) Order 2010 (SI 2010/1958); Electricity and Gas (Community Energy Saving Programme) Order 2009 (SI 2009/1905); Electricity from Non-Fossil Fuel Sources Arrangements (England and Wales) Order 2006 (SI 2006/2388); Electricity and Gas (Energy Efficiency Obligations) Order 2004 (SI 2004/3392); Electricity from Non-Fossil Fuel Sources (Locational Flexibility) Order 2001 (SI 2001/3914); Electricity from Non-Fossil Fuel Sources Saving Arrangements (Amendment) Order 2001 (SI 2001/3268).

22 Ofgem also administers the NIRO.

23 See *"www.ofgem.gov.uk/e-serve"*.

24 See *"www.ofgem.gov.uk/Networks"*.

25 See *"www.ofgem.gov.uk/Sustainability"*.

26 See *"www.ofgem.gov.uk"*.

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.

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
- currently aiding a project to encourage manufacturers of wind turbines to use the UK's potential and another project to develop an offshore electricity grid.[27]

INCENTIVES

5. 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.[28] 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").[29]

On 1 April 2010, the Government introduced the concept of 'feed-in tariffs' ("FITs") for micro-generation. These are payments to producers of renewable electricity up to 5MW, 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[30]. The FITs scheme supports renewable energy projects which involve new anaerobic digestion, hydro, solar photovoltaic and wind energy. A pilot programme is also being set up, whereby the first 30,000 micro combined heat and power installations with an electrical capacity of 2 kW or less are supported by FITs.

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

27 See "*www.decc.gov.uk/en/content/cms/meeting_energy/renewable_ener/ored/ored.aspx*".

28 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"*.

29 Part V, Sections 48 and 49 of the CCL.

30 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).

Spending Review. This addressed issues such as tariff levels, eligible technologies and administrative and regulatory arrangements, and the result of the review is due to be released at the end of 2011. At this point it is not clear what will be the likely outcome of this.[31]

6. 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.

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

There is currently no minimum price guarantee by legislation regarding electricity from renewable energy sources.

8. Do the 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 27 million homes by 2019, which will be key enablers of the smart grid. In addition, Ofgem is providing £500m over the next five years to support smart grid trials, and DECC will provide £2.8m for smaller smart grid demonstration projects.[32]

9. 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.[33] In the 2010 UK Budget, manufacturers of offshore wind turbines looking to locate new facilities in the UK will receive £60 million for supporting infrastructure such as the development of ports.[34]

The Government introduced the Enhanced Capital Allowances (ECA) scheme in 2001 to encourage businesses to invest in low carbon, energy-saving equipment[35]. The scheme provides a tax incentive to

31 See *"www.decc.gov.uk/en/content/cms/meeting_energy/renewable_ener/feedin_tariff/fits_review"*.

32 See *"www.decc.gov.uk/en/content/cms/meeting_energy/network/strategy/strategy.aspx"*.

33 See *"www.hm-treasury.gov.uk"*.

34 *ibid.*

35 See *"www./eca.gov.uk/"*.

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. According to the 2011 Budget, the list of designated energy-saving technologies qualifying for enhanced capital allowances will be updated during summer 2011, subject to agreement with the European Commission[36] .

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

The UK Renewables Obligation ("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.[37] The Renewables Obligation Order ("ROO") 2002 was designed to incentivize the deployment of large-scale renewable electricity generation. Under the ROO 2002, UK electricity suppliers must source an increasing proportion of their electricity from renewable sources and a renewables obligation certificate ("ROC") is issued for each MWh.[38] Electricity suppliers must demonstrate compliance with their target each year (1 April to 31 March) by either (or a combination of):

a) surrendering equivalent ROCs to Ofgem for each MWh of its obligation; or

b) making a "buy-out" payment to Ofgem for each MWh of its obligation.[39]

ROCs are effectively guarantees of the amount of electricity, in megawatt hours, having been produced by renewable sources and ROCs are themselves tradable certificates. The value at which ROCs have been traded has provided a financial incentive for energy generation companies to use renewable sources. Since the introduction of the Order in 2002, growth in renewable electricity generation has more than doubled in the UK.[40] The financial benefit to be gained by trading ROCs is considered to have motivated renewable source energy generation companies. The ROO 2009 creates banding (differentiated levels of support for different technologies according to a number of factors including their level of development) for renewable sources in order to incentivize less economic sources of renewable energy generation (e.g., less developed technologies with higher generation costs).[41] There have been several reports and consultation on the RO, including an Arup report on support levels for renewable electricity technologies during 2013-17 under the Renewables Obligation in

36 2010 Energy Technology Criteria List: *"www.eca.gov.uk/NR/rdonlyres/80D2C784-D67A-4745-AC34-6513F1847E39/0/ENERGYTECHNOLOGYCRITERIALISTJuly2010FINAL.pdf"*.

37 For ease of reference the dates for England and Wales are used. The Renewables Obligation Orders for England & Wales and Scotland were introduced in April 2002. In Northern Ireland, it was introduced in April 2005. For further information see "*www.decc.gov.uk*".

38 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"*.

39 The buy-out price for 1 April 2011 to 31 March 2012 is £38.69 per MWh.

40 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"*.

41 The Renewables Obligation Order 2009 SI 2009 No. 785. The 2010 Amendment to this order extended the RO to 2037, providing additional support for offshore wind projects and making provisions for the transition of certain categories of generator to the Feed-In Tariffs scheme.

June of this year, and the Government's response to the consultation on changes to the RO has now been published. Currently, a consultation is taking place on the banding proposals and new bands are scheduled to come into effect in 2013.

In March 2011, the UK Government introduced the Renewable Heat Incentive (RHI), which gives payments to entities that self-generate renewable heat[42]. There is no upper limit to the size of equipment eligible under the RHI for heat generation[43]. The scheme for Renewable Heat Premium Payments was due to start from July 2011 but is yet to be implemented.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

Total electricity generation from renewables in the UK in 2010 amounted to 25,734 GWh, representing a 19% increase on 2008 volumes[44]. The main contributors to this substantial increase were:

- 7,137 GWh from onshore wind;
- 3,046 GWh from offshore wind;
- 1,406 GWh from plant biomass;
- 5,037 GWh from landfill gas;
- 2,506 GWh from co-firing with fossil fuels;
- 1,594 GWh from municipal solid waste combustion; and
- 3,092 GWh from large scale hydroelectricity.

Following on from the previous year, wind was the leading technology in 2010 for electricity generation from renewable sources. 40% of renewables generation in the UK came from this source, and 14% came from hydroelectricity. Biomass was also a significant contributor, as the combined generation from a range of sources thereof accounted for 46% of generation from renewables, two fifths of which was owing to landfill gas.[45]

[42] 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.

[43] The details of the RHI are still subject to change until it is finalized.

[44] See *"www.decc.gov.uk/assets/decc/11/stats/publications/energytrends/articles/2082-renewable-energy-2010-trends-article.pdf"*, 'Special feature – Renewable energy in 2010'.

[45] *ibid.*

WHITE & CASE LLP	
Tallat Hussain 5 Old Broad Street London EC2N 1DW United Kingdom T +44 20 7532 2376 F +44 20 7532 1001 E thussain@whitecase.com	**Tamiko Mackison** 5 Old Broad Street London EC2N 1DW United Kingdom T +44 20 7532 1336 F +44 20 7532 1001 E tmackison@whitecase.com

Uruguay

Gonzalo Secco
Viviana Berkman

FERRERE

GENERAL

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

Introduction

Renewable energy has acquired an important role in Uruguay over the last years. And it will become more significant in the years to come as Uruguayan authorities are actively promoting energy generation from renewable sources. Uruguayan government plans that in 2015 about 50% of electric energy supply should come from renewable sources.[1]

The main sources of energy generation in the country are derived from petroleum and hydraulic power. In dry years, the generation of hydraulic power diminishes substantially and renders necessary resorting to thermal power stations operating with fossil fuels (fuel oil or natural gas), which has significant generation costs.

Moreover, as described below, Uruguay's hydroelectric potential is almost completely exploited; the remainder is suitable only for small-sized projects. For this reason, the so called non-traditional renewable sources (wind power, mini-hydro, solar and biomass) are becoming more relevant as they appear to be the solution to Uruguay's current energy limitations. Authorities plan that in 2015 at least 15% of electric energy should come from non-traditional renewable sources.[2]

The present research will focus on these non-traditional renewable sources, rather than big-scale hydro electrical generation, due to the importance that the former are acquiring in the country.

Uruguay's Energy Outlook

Uruguay has four hydraulic power stations (1538 MW) and four thermal power stations (875 MW). Additionally, it has recently incorporated 40 MW of wind generation (20 from a state-owned wind farm and 20 from two private farms) and 187 MW of biomass from private generators.

There are no hydrocarbon reserves certified in the country (even though on-shore and off-shore exploration activities are being performed) and there are very few coal reserves, which have low heating value and high ash content. Although the installed hydroelectric generation capacity is greater than the usual maximum simultaneous demand of the system, the random variability of the water flow determines the necessity of having thermal back ups[3].

During occasional dry periods, where the water flow is significantly reduced, sometimes even nil, thermal generators are operated at full.

For these reasons, during periods of peak demand, the country is obliged to import energy from its neighbours Argentina and Brazil, which is acquired at very high costs.

In some years (for example in 2003) electric energy demand was covered without input of thermoelectric generation. However, during the driest season, from 2004 to 2006 there was very little input of hydraulic energy and the

1 See "http://www.dne.gub.uy".

2 "Políticas Energéticas del Gobierno 2005 – 2030" in "http://www.dne.gub.uy".

3 General Information about Uruguay, the Energy Sector and UTE, 2003.

component of national thermoelectric energy has been practically present all that time.

The competent authority in energy matters is the Ministry of Industry, Energy and Mining (hereinafter "MIEM"). According to this agency, Uruguay has good capacity for renewable energies; mainly wind power, mini-hydro, solar and biomass related to agricultural and forestry industry.

In 2009 MIEM presented a study on Energy Outlook ("Uruguay Energy Outlook, 2009"[4]). According to same, Uruguay presents the following characteristics:

- Strong dependence on oil (use of petroleum doubles the world average);
- Relatively small presence of native sources (including big hydraulic power stations) in the global energy matrix (25% to 40% if we consider consumption of global energy, not only electric generation);
- Several energy supply crisis in recent years (high dependence on regional suppliers); and
- Historical lack of energy efficiency culture.

In this study, MIEM presented the following information on the availability of energy sources:

- Hydroelectric potential almost completely exploited. The remaining is suitable for small sized projects;
- No local fossil fuel or natural gas resources exploited yet; and
- Low availability of natural gas in the region.

For the aforementioned reasons, the government has repeatedly expressed its interest in exploiting non-traditional renewable energies and has articulated its strategic guidelines to be energetically independent within regional integration, with economically, environmentally and socially sustainable policies.

Uruguay's main renewable sources

Hydroelectric

As mentioned, Uruguay's hydroelectric potential has already been almost completely exploited. The remaining is suitable only for small sized projects. However, people in Uruguay are not used to producing energy through small size hydro generation plants, by contrast of what occurs in its neighbour Brazil.

As mentioned, there are there four hydro electrical plants, which generate in total 1538 MW.

Wind power

As regards to wind power, nowadays the state-owned electric utility (hereinafter "UTE") generates 20 MW and buys 20 MW to private generators.. An expansion of 10 MW of one of the private farms is currently in process. Additionally, there are other projects in development with power purchase agreements signed with UTE for a total of 216 MW. Part of these (66MW) are expected to enter into service on 2013 and the rest (150MW) are expected for 2014-2015.

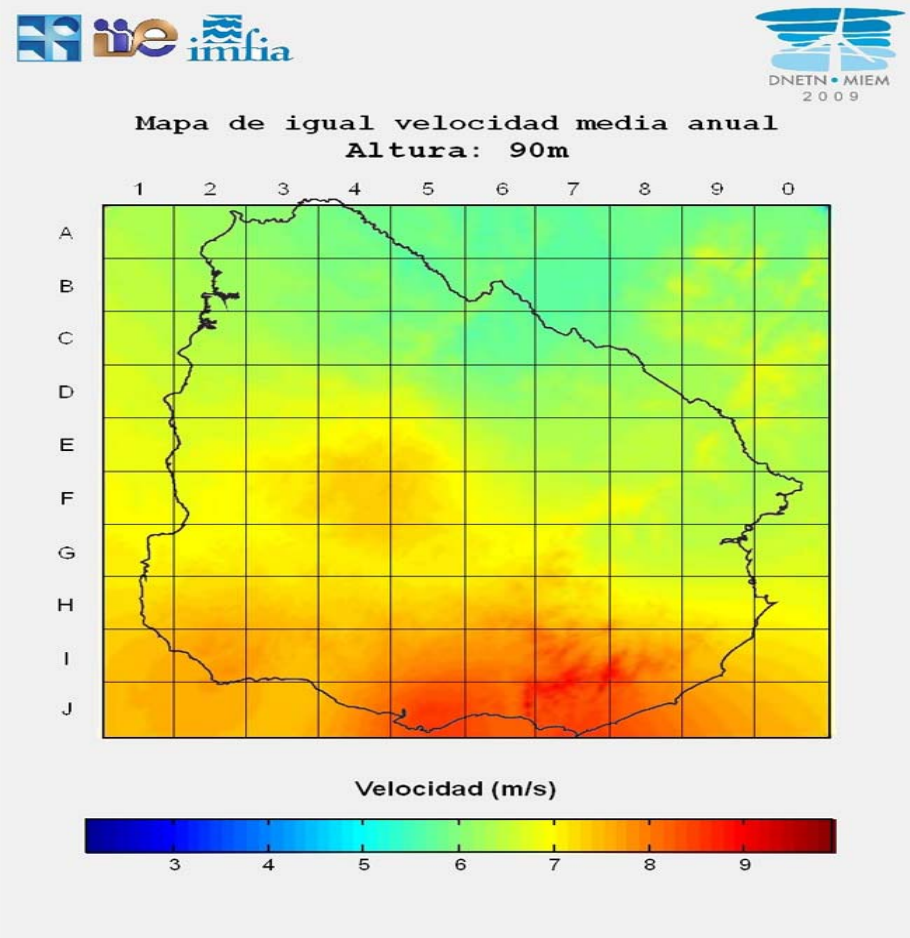
A new round for the award of up to additional 150MW from private generators is currently underway.

UTE itself plans to develop 100MW in the form of a lease agreement with a private supplierand another 100MW in the forma of some type of association with the private sector, different from the PPA structure followed so far. UTE expects to have these two projects for a total of 200MW in place by 2015.

This makes a total of wind energy ranging from 500 to 600MW by 2015.

[4] See "http://www.dne.gub.uy".

Uruguay has high velocity winds, favourable for generating electrical energy via wind power. Surveys have been made throughout national territory and the results are available on a wind map prepared by government authorities and the University of the Republic in 2009[5]. Since then, the measurements obtained from sites all over the country, managed by UTE, have confirmed the good potential of winds in Uruguay.



Source: "http://www.energiaeolica.gub.uy".

[5] See *"www.energiaeolica.gub.uy"*.

Biomass

Biomass has been acquiring relevance lately. Nowadays, there are 187 MW of installed power coming from biomass sources. The plan is for this figure to continue increasing.

UTE has executed other agreements with private generators installed in national territory for a total of 35 MW.

The government's objective of incorporating another 200 MW of biomass for the year 2015 has already been announced.

For these purpose, by the end of 2010, national authorities issued Decree Nr. 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. This special regime provides 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.

According to a MIEM report, in Uruguay it is possible to generate biomass from the following resources:

- Energy forestry: production of wood for generation of power.
- Forestry residues in land: available waste in the forested area with a non-energetic purpose, e.g., sawing or paper. These residues can be generated at different forestry, thinning, pruning or harvest instances.
- Industrial forestry residues: saw dust from saw mill residues, veneer plants, pulp mills, black liquor, etc.
- Other biomass: rise husks, etc. MIEM estimates the following[6]:
- From projections of country availability of residue generated at saw mills; it will be possible to obtain electric energy power potential of over 200 MW as of 2013.
- From projections of availability of residue in land associated with industrial enterprises under project, there is an electric energy generation potential of over 100 MW as of 2012.
- From estimating the production of black liquor in pulp mills, considering generation units at 80% capacity, it is estimated that there is an approximate electric energy generation potential of 260 MW of installed power, where 50% will be consumed by the plants.

Solar

There is still no significant solar, thermal or photovoltaic energy, except for some punctual experiences, but authorities are trying to promote its use. On 31 May 2011, the government launched 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.

Law No. 18,585, issued September 2009, promotes generation of thermal solar energy. This law stipulates that construction permits for health centers, hotels and sports clubs whose hot water consumption exceeds 20% of its total energy consumption, must foresee facilities for future incorporation of solar equipment for heating water.

[6] Marco de referencia del decreto de promoción de la generación de energía eléctrica a partir de fuentes autóctonas "http://www.dne.gub.uy".

In 2011, the only permits that will be authorized for these constructions are those including solar equipment covering 50% of heated water use. And, in 2012, new or old pools to be heated must have solar equipment for this purpose.

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

Uruguay presents a modern regulation on renewable energies, which encourages and provides benefits to the production of renewable energy.

Renewable energy is defined by Law No. 18.597 as follows: *"autochthonous renewable sources such as wind, thermal-solar, photovoltaic, geothermal and tidal energy and energy derived from the use of different types of biomass"*. This law refers to energy efficiency and declares the production of renewable energy as of national interest.

The energy efficiency ("EE") law states that the following is part of the EE program: "for energy users to substitute in final use, traditional source energy for unconventional renewable energy enabling spreading the energy matrix and the reduction of polluting gas emissions."

According to this September 2009 rule, MIEM must prepare the National EE Plan, which must pick up programs for the promotion of efficient use of energy. Several authorities have informed that within the framework of these programs there are financing options for renewable energy generation projects.

Decree No. 77/006 (March 2006) was the first specific rule issued in the country for effective incorporation of private generation of electricity from wind energy, biomass and min-hydro sources. As indicated below, this rule resulted in a call for bids by the state-owned electric company UTE and the subsequent execution of electric energy purchase agreements.

This rule is specifically geared towards:

- diversifying the national energy matrix, which diminishes having to depend on sources whose availability and prices have a negative impact on the country;
- using autochthonous resources, tending to reduce need of foreign currency;
- promoting the development of local manufacturing and employment associated to equipment and services that have possibilities of progressing in the international market;
- contributing to preserving the local and global environment through emission reduction;
- taking specific action in wind energy, biomass and mini hydro sources, as integral part of a set of energy policy instructions launched by MIEM; and
- supporting installation of small independent generators through purchase of energy through long-term firm contracts.

As to the effects on the market, the Decree tried to contribute promoting the participation of small independent energy producers, assuring the investment made through a long-term electricity contract (up to 20 years). In this regard, the new instrument supplements other measures for incorporating power, as the ones associated to another action of the Executive Branch adopted in the last quarter of 2009 (Decree 389/005).

Along the same lines, Decree 173/010, issued on June 2010, marks a great progress in the field of micro generation.[7]

[7] See "http://www.dne.gub.uy"

The objective of this Decree is to diversify power generation, both in primary sources and supplier agents through generators connected to the low voltage 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 to the low voltage network.

REGULATION

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

Uruguay has a general electric regulatory framework issued in 1997 and regulated in overall in subsequent years.

As of the end of 2005, new regulations have been passed especially directed towards non-traditional renewable energy.

Main characteristics of the national electric system

To understand the market of renewable energies in Uruguay, it is important to describe briefly how the electric system works.

Uruguay experienced from the beginning of this century an early process of State participation in areas and activities of importance for society.[8] In 1912 a law was passed creating UTE, the National Power Utility, with the main objective of providing electricity for lighting, power and traction as a monopoly.

Law No. 16,832 dated June 1997 set out a new regulatory framework for the national electric system, which includes among other aspects:

Freedom of generation, import, export and commercialization of electric energy.

Maintenance of the public service nature of transmission, transformation and distribution of electric energy insofar assigned totally or partially to third parties in a regular and permanent fashion; activities that will be incumbent upon the Government through the state-owned electric company ("UTE") or private persons, licensees of the services.

The Creation of a Wholesale Electric Energy Market ("MMEE") with shared use of the transmission system, in addition to a system of free access and capable of supplying to Distributors and Big Consumers.

In this framework, a private energy generator (whether of renewable or non-renewable energy) may perform the following actions:

- execute free competition agreements supplying energy to the Distributor (currently only UTE) and to Big Consumers;
- freely execute without tender a contract for the supply of electric energy to UTE;
- sell energy in the spot market. This market is defined by article 7 of Decree 276/002 as: *"the sphere where short-term energy transactions are arranged, in order to reconcile surplus and shortages as a result of the dispatch and the transaction, contractual commitments and actual consumption."*; and
- export electric energy abroad.

The main laws and regulations on renewable energy are the following.

Decree No. 389/005, October 2005. States that UTE should promote execution of agreements to purchase electric power from generators of 50MW of installed power.

[8] "General Information about Uruguay, the Energy Sector and UTE Company, 2003"

Decree No. 77/006, March 2006. Orders UTE to execute agreements to purchase up to 60 MW of electric power deriving from wind power, biomass and mini-hydro sources.

Law No. 18,046, October 2006. Allows UTE to buy electric energy from generators without public tender.

Law No. 18,195, October 2006. Regulates the production, commercialization and use of agro fuels.

Law No. 18,362, October 2008. Creates easements in favor of those producing wind power. In order to acquire this right it will be necessary to expedite certain processes with the Ministry of Energy.

Law No. 18,585, September 2009. Regulates and declares as of national interest the research, development and formation in the use of solar thermal energy, but it states nothing on the generation of photovoltaic solar energy.

Decree No. 354/009, August 2009. Exonerates generation of renewable power from certain taxes up to 90% in some cases. Including very broad import, income and net worth tax exemptions, among others.

Decree No. 403/009, September 2009. Orders UTE to execute agreements to purchase up to 150 MW of electric power deriving from wind power. This regulation was complemented by Decree 41/010, issued on February 2010.

Law No. 18,597, September 2009. Declares the production of renewable energy as of national interest. This law entrusts the Ministry of Energy with the drafting of a national plan for the efficient use of power. It creates mechanisms to finance those who use power in an efficient manner and gives 'certificates of efficiency' to certain projects that act in accordance with the purpose of the law.

Decree 173/010, 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 367/010, December 2010. Orders UTE to execute special purchase agreements (PPAs) with electricity suppliers producing in national territory from biomass source.

Decree 159/011, May 2011. Complements Decree 403/009, calling for a new round of incorporation of wind power energy (additional 150MW to complete 300 MW together with PPAs coming out of Decree 403/009), through the signing of power purchase agreements with private generators.

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

MIEM (Ministry of Industry, Energy and Mining) and *DNE* (National Energy Direction). This Ministry belongs to the Government's Executive Branch. Through DNE, the MIEM's main role is to design, conduct and evaluate the policies on electric power issues. It also in charge of regulating and coordinating the activities or the other relevant participants.

National energy companies. ANCAP and UTE. These companies are relevant instruments in the execution of the policies on energy established by the Executive Branch.

However, only UTE is a relevant agency in the renewable energy sector. ANCAP (Administración Nacional de Combustibles Alcohol y Portland) is the company in charge of exploiting and administrating the monopoly of alcohol and national fuel, and of importing, refining and commercializing oil and oil products and manufacturing Portland and cement (General Information about Uruguay, the Energy Sector and UTE Company, 2003).

UTE (Administración Nacional de Usinas y Transmisiones Eléctricas). This is the national electricity utility. Activities of transmitting, transforming and distributing electric energy insofar totally or partially allocated to third parties in a regular and permanent fashion, considered a public service provided by the government and incumbent upon UTE.

URSEA (Unidad Reguladora de Servicios de Energía y Agua). This is the energy services' regulator including electricity, gas and liquid fuels, drinking water and sanitation in Uruguay, created by Law No. 17.598 dated 13 December 2002. Its objective is to protect consumers' rights, controlling compliance with applicable regulations and assuring 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 industry areas where it is authorized by law and to regulate monopolies, setting out minimum quality levels and proposing prices based on efficient costs.

ADME (Administración del Mercado Eléctrico). This is the Electric Market Administration, which operates the National Load Dispaching Center *(DNC)*. Its main role is to administrate the electric energy wholesale market.

INCENTIVES

5. 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, import taxes and duties for certain goods, among others.

In particular, additionally, certain activities related to renewable energies are especially promoted with a supplementary regime to the latter embodied in Decree 354/09. This regime focuses on income tax exemption as follows:

⇒ 90% of taxable net income between 7/1/09 and 12/31/17,

⇒ 60% between 1/1/18 y el 12/31/20, and

⇒ 40% between 1/1/21 and 12/31/23.

The following activities are exempt under decree 354/009:

- The generation of electric energy from non-traditional renewable sources.
- The generation of electric energy through co-generation.
- The production of energy from renewable sources.
- The transformation of solar energy into thermal energy.

Additionally, please note that Law 18.597 sets out that the Executive Branch will ensure that the tax structure will promote the sustainable and efficient use of energy resources.

6. 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 77/006, 397/007, 403/009, 173/010, 367/010 and 159/2011 stated that UTE would buy to the generator all the energy produced during the

period of the agreement while no uptime is required.

Another issue to consider is that the unitary cost of renewable energies is comparatively much lower than those 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 biomass generation, recent rules established a unitary cost of zero for long term contracts with UTE, therefore confirming the above.

7. 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 (adjusted annually) is established. Decrees 77/006, 397/007, 403/009, 173/010, 367/010 and 159/2011 state that UTE will pay the generator the amount offered, during all the period of the agreement. In consequence, a minimum price is assured within those agreements.

These prices are higher than the price UTE sells to large consumers, but lower than the average price sold in the spot market at date.

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

There is no specific preference in terms of connection to the grid.

The capacity of transmission lines could be a limitation in certain points of the grid if more than one project were to compete with each other. However, it is likely that said competition occurs between two renewable-source projects, rather than a traditional versus a renewable source project.

It should be noted that all private projects have to borne the costs associated with the connection to the grid.

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

Yes. Decree 354/009 expressly sets out tax benefits to national manufacturing of machinery and equipment for the generation of electric power from non-traditional renewable sources, the generation of electric energy through co-generation, the production of energy from renewable sources and the transformation of solar energy into thermal energy.

There are also tax benefits for the conversion of equipment and/or incorporation of processes for the efficient use of energy and to services rendered by energy service companies.

Additionally, rules regulating tenders called by UTE for purchase of electric energy from generators located in national territory or a non-traditional renewable source, set out that investment components of national origin would be preferentially considered upon awarding the bids.

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

Uruguay is member of Kyoto's 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.

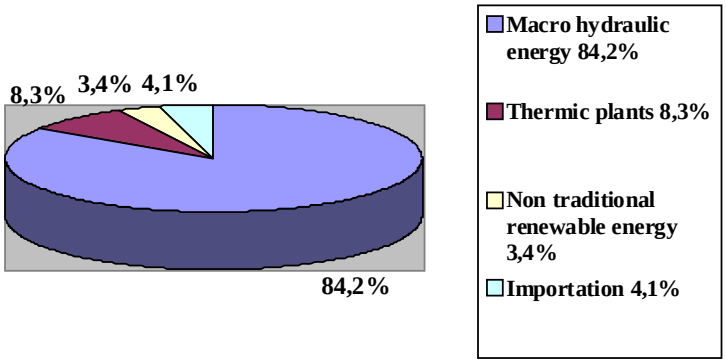
The acquisition of Emission Reduction Certificates in the scope of the Clean Development Mechanism is another important incentive for the production of renewable energy.

According to the bidding conditions of UTE's 2010 last tender, the Generator must obtain Emission Reduction Certificates. Outcome of their commercialization shall be equally shared between UTE and the Generator.

STATISTICS

11. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity at country scale?

The following pie chart shows the percentages of the total electricity consumption in the country for each type of source, corresponding to full year 2010.



Source: Electric Market Administration (ADME)[9]

FERRERE	
Gonzalo Secco	**Viviana Berkman**
Luis A. de Herrera 1248 World Trade Center, Torre B Montevideo, Uruguay	Luis A. de Herrera 1248 World Trade Center, Torre B Montevideo, Uruguay
T +5982 623 0000	T +5982 623 0000
F +5982 628 2100	F +5982 628 2100
E gsecco@ferrere.com	E vberkman@ferrere.com

[9] See "http://www.adme.com.uy/mmee/pdf/informes/anual/InfAnual2010V2.pdf"