

GLOBAL RENEWABLE ENERGY Guide

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2015



GLOBAL
RENEWABLE
ENERGY
Guide

2015

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FOREWORD

ÇAKMAK PUBLISHING is pleased to publish this 2015 edition of the *Global Renewable Energy Guide*, which has been published annually since 2010.

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

The publication maintains a Q&A format with a common questionnaire set by the editors and answered by leading practitioners from 32 jurisdictions around the world.

The following are notable observations from this 2015 edition of the *Guide* regarding the regulatory regime and available incentives for renewable energies in the 32 jurisdictions explored:

- Most of the countries, 20 out of 32, have an independent regulatory authority to supervise and regulate the electricity sector, including renewable energies, while the remaining 12 countries opt for regulation of the electricity sector by a Ministry.
- Most of the countries, 25 out of 32, provide for tax advantages for the generation of electricity from certain or all types of renewable energy sources.
- Purchase guarantees (feed-in tariffs) or similar support mechanisms are available in most of the countries, 24 out of 32.
- The ratio of ensuring a minimum price for the electricity generated by renewable energy companies is high as well (22 countries out of 32 countries).
- In 19 out of the 32 countries, priority for connection to and/or usage of the transmission and/or distribution system is provided for renewable energy companies.
- 9 out of the 32 countries provide for additional incentives for the domestic manufacturing of equipment and materials.

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

Av. Mesut Çakmak
Av. Dr. Çağdaş Evrim Ergün
Editors
Ankara, October 2015

BELARUS



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GENERAL

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

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

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

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

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

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

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

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

Some programs have the dedicated orientation.

Hydropower. The State program for construction in 2011 - 2015 hydroelectric power in the Republic of Belarus is approved.

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

Biogas. As a result of the Program of construction of energy sources, working on biogas for 2010 - 2015 years implementation 38 biogas plants aggregate electric capacity of 37,9 MW will be put into operation in the country. This makes it possible to produce annually about 314 million kWh of electricity and to replace imported natural gas in the volume of more than 105 thousand tons of equivalent fuel.

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

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

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

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

- solar energy;
- wind energy.

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

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

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

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

REGULATION

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

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

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

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

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

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

Issues related to the order of keeping of the State Cadastre of Renewable Energy Sources are regulated by the Regulation of the Council of Ministers of 24.06.2011 No. 836, and the

Regulation of the Ministry of Natural Resources and Environmental Protection of 29.08.2011 No. 29. Also, the Regulation of the Council of Ministers No. 836 establishes the procedure for confirming the origin of energy produced from RES.

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

On August 21, 2015 the Edict of the President of 18.05.2015 N 209 “On Usage of Renewable Energy Sources” (hereinafter – the “Edict N 209”) enters into force which makes significant changes in RES sphere of the Republic of Belarus. The Edict N 209 stipulates that creation of new facilities on usage of renewable energy will be made with the limits of special quota. For the purposes of the Edict N 209 quota is a total electric power of RES facilities, created in the Republic of Belarus, which is established per types of RES. RES quota will not be applied for companies which produce energy for internal need and for companies which construct RES facilities on the basis of investment agreements concluded with the Republic of Belarus before May 20, 2015.

The Edict N 209 also includes some changes related to ratios for electricity produced from the RES (please see clause 9).

Supplementary legal acts are expected to be adopted after the Edict N 209 enters into force.

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

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

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

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

- to establish the procedure for confirming the origin of the energy produced from RES;
- to establish the procedure for conducting the State Cadastre of Renewable Energy Sources and its data use;
- to coordinate the state bodies work;
- to approve state programs;
- to determine the procedure on establishment and allocation of quotas for RES facilities (after entering into force of the Edict N 209).

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

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

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

The Ministry of Natural Resources and Environment of the Republic of Belarus is responsible for development and maintenance of the State Cadastre of Renewable Energy

Sources, issues certificates confirming the origin of energy, and participates in the development of state programs in the field of renewable energy sources. In addition, the Ministry identifies places suitable for plants location and informs local executive and administrative bodies on the results.

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

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

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

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

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

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

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

State Cadastre of Renewable Energy Sources should be available on the official web-site of Ministry on Natural Resources and Environment (link: http://www.minpriroda.gov.by/ru/new_url_19948904-ru/). Unfortunately, as of the date of this publication, the State Cadastre of Renewable Energy Sources database is not accessible online.

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

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

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

The certificate confirms:

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

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

A certificate on the origin of energy from RES (clause 5 above) is required in case the producer of energy will connect to the state electric network.

In case the producer of energy uses the energy itself or transfers it through the private electric networks, the certificate on the origin of energy is not needed.

There are no other licence exemptions for obtaining of certificate on the origin of energy.

INCENTIVES

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

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

- 1) Installation of RES use shall be exempt from value added tax when import

into the territory of the Republic of Belarus (article 96).

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

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

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

- for wastewater discharge into water objects made by heat power stations using non-conventional and renewable energy sources – 0.2.

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

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

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

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

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

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

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

The amounts of the ratios for electricity produced from the RES were changed in May 2014. As for today the ratios are

	Multiplying ratios	Stimulating ratios
Wing energy	1.3	0.85
Natural water flows	1.1	0.85
Wood fuel and other biomass	1.3	0.85
Biogas	1.3	0.85
Sun	2.7	0.85
Geothermal and other energy sources not belonging to non-renewable	1.3	0.85

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

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

It is important to note that after the Edict N 209 enters into force (August 21, 2015) the approach on determination of RES ratios will be changed. Thus, such ratios will be depend not only on the type of RES, but on electric power of facility, factual term of operation of facilities and other parameters of facilities.

After the Edict N 209 enters into force the application of abovementioned RES ratio will depend on exceeding /non-exceeding of terms of creation of RES facilities declared by producer of RES energy. Currently supplementary legal act are not adopted. Therefore more detailed information will be accessible later.

The Edict N 209 also grants producers of RES energy the right to decrease the ratios at their own initiative if such producers intend to create RES facilities within the limits of established quotas.

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

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

However the procedure has not been completed. New participant of the Kyoto Protocol shall be ratified by all other participants. At the moment of the Kyoto Protocol expiration in 2012 (first-round) only few participants have agreed membership of Belarus.

On the conference held in 2011 in Durban the Kyoto Protocol has been prolonged. The Republic of Belarus has declared on the reduction of greenhouse gases emission for 5-10% in comparison with 1990 for the second-round of Kyoto Protocol.

So, Belarus is the Annex I Party but do not have first-round Kyoto targets. At that meeting with all targets of first-round is the mandatory requirement for participation in the second-round. Therefore today Belarus is still not a participant of the Annex B. The deals with carbon credits under international climate agreements may not been made by Belarus.

The Edict of the President of the Republic of Belarus dated 08.12.2010 No. 625 “On some issues of reduction of greenhouse gases” provides with the possibility to make paid transfer of reduction of greenhouse gases emission to the foreign investor. Currently this Edict is not used in practice as far as there is no possibility to make deals in accordance with international climate agreements.

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

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

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

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

- the rights and obligations of the parties;
- settlement procedures;

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

At the same time state supply organization:

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

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

12. 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.

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

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

STATISTICS

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

As of 2015, unfortunately, there is no current official statistics on the general value of the generated electricity in Belarus in open access.

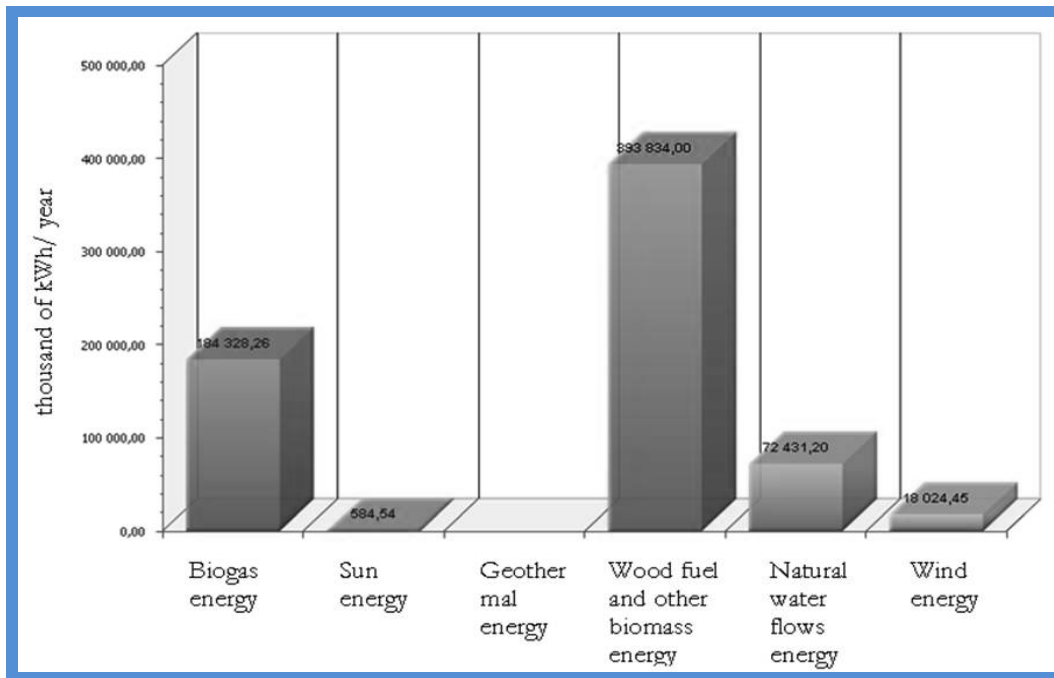
In accordance with the statistics for 2012 the share of renewable energy sources took:

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

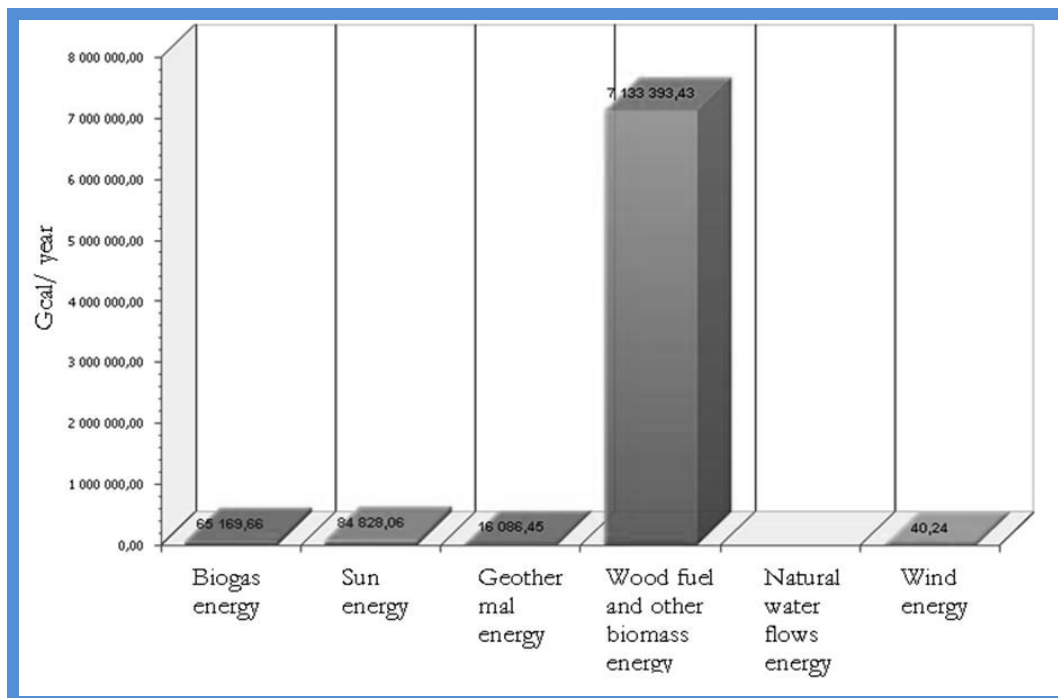
The most wide spread type of RES in Belarus is wood fuel and other biomass. The State Committee on Standardization informs that in January-November of 2012 the share of fuel and energy resources in the balance of in Belarus is 25%.

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

ELECTRIC ENERGY THAT MAY BE PRODUCED FROM RENEWABLE ENERGY SOURCES



HEAT ENERGY THAT MAY BE PRODUCED FROM RENEWABLE ENERGY SOURCES



VLASOVA MIKHEL & PARTNERS		
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BOSNIA & HERZEGOVIA

Nusmir Huskic

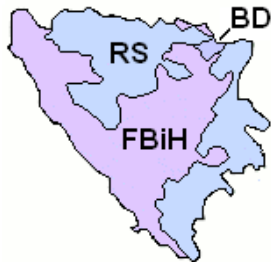
HUSKIĆ LAW OFFICE

GENERAL

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

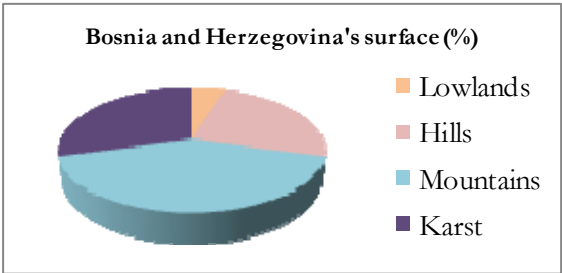
In order to understand the nature and importance of renewable energy in Bosnia and Herzegovina it is essential to present and comprehend the current political and geographical situation in country.

Understanding political conformation of Bosnia and Herzegovina is very complicated for someone who is not familiar with it. Bosnia and Herzegovina is composed of two self-governed entities, the Federation of Bosnia and Herzegovina (“FBiH”) and Republic of Srpska (“RS”), which were established by the Dayton Peace Agreement in 1995. The District of Brčko (“BD”) was created in 1999 comprised from land of both entities. The FBiH is further divided into ten cantons, which are then divided into municipalities. The RS is only subdivided into municipalities.



Picture 1: Political conformation of Bosnia and Herzegovina

Geographical position of Bosnia and Herzegovina is quite interesting and fruitful for many projects, including renewable energy sector. It is a hilly and mountainous country. Of the total surface are, 5% are lowlands, 24% hills, 42% mountains and 29% karst.

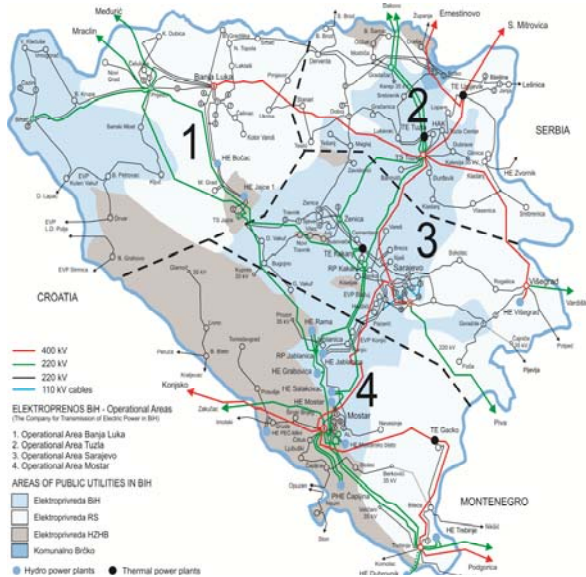


Forests and forestlands cover about 50% of the territory. The total agricultural land covers 2.5 million hectares or 0.7 hectares per capita. Bosnia and Herzegovina possesses significant water resources (average annual precipitation on the territory of Bosnia and Herzegovina is 1250 l/m², which is some 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,

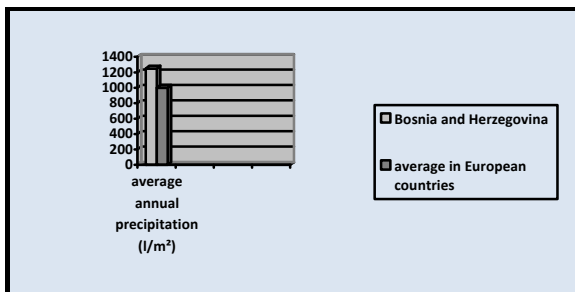
¹ Petar Gvero Ph.D., M.Sc. “Climate Change in South-East European countries: Causes, Impacts, Solutions”, Power Point Presentation.

Bosnia and Herzegovina signed the EU obligatory protocol committing them to produce 20% renewable energy in comparison to their overall energy consumption by the year 2020. Solar, wind and biomass energy are expected to have a large role in achieving this goal.

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.



Picture 2: Map of the power system in Bosnia and Herzegovina



Because of previously described political conformation 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

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, wind, solar, bio-mass, bio-gas, and geo-thermal and non-accumulative solar energy.³

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

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

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

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

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

whereby, electricity generated from the renewable energy sources, is defined as:

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

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

REGULATION

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

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

There are still no energy strategies in Bosnia and Herzegovina, neither on entity or state

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

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

level. The RS adopted its Energy Law in 2009, and Law of Renewable Energy Sources and Co-generating sources (Official Gazette RS 39/13).

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

State level:

- Law on Transmission of Electric Power, Regulator and System Operator of Bosnia and Herzegovina (Official Gazette BiH 7/02, 13/03, 76/09, 1/11);
- Law on Establishing the Company for the Transmission of Electric Power in Bosnia and Herzegovina - TRANSCO Law of Bosnia and Herzegovina (Official Gazette BiH 35/04, 76/09 and 20/14);
- Law on Establishing an Independent System operator for the Transmission of Electric Power in Bosnia and Herzegovina - ISO Law of Bosnia and Herzegovina (Official Gazette BiH 35/04).

Entity level:

Federation of Bosnia and Herzegovina (FBiH):

- Law on Usage of Renewable Energy Sources and Co-generating Energy Sources (Official Gazette of FBiH 70/13, 05/14);
- Law on Electricity of the Federation BiH (Official Gazette of FBiH 66/13)
- Decree on Promulgation of the Law on Modifications and Amendments of the Law on Electricity (Official Gazette FBiH 38/05);
- Decision about a Methodology for the Determination of Purchase Prices for Electricity from Renewable Sources with

Installed Power up to 5 MW (Official Gazette of FBiH 32/02).

Republika Srpska:

- Law on Energy of the Republika Srpska (Official Gazette of RS 49/09);
- Law on Electricity of the Repulika Srpska (Official Gazette of RS 08/08, 34/09, 92/09 and 1/11);
- Law of Renewable Energy Sources and Co-generating sources (Official Gazette RS 39/13, 108/13);
- Law on Gas (Official Gazzette RS 86/07, 121/12);
- Law on Oil and Derivates (Official Gazzette RS 36/09, 121/12, 39/13).

Brčko District:

- Law on Electricity (Official Gazzete Brčko D BiH 36/04, 28/07, 61/10, 4/13);

International/European level:

- Kyoto Protocol to the Framework Convention on Climate Change was signed in 2007;
- Treaty Establishing Energy Community (Official Gazette BIH - International Agreements, No. 9/06);
- Regulation (EU) No 838/2010 of the European Commission of 23 September 2010 on laying down guidelines relating to the inter-transmission system operator compensation mechanism and a common regulatory approach to transmission charging;
- Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2008 concerning common rules for the internal electricity market and repealing Directive 2003/54/EC,
- Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the

network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003;

The deadline for transposition into national legislation and the implementation of Directive 2009/72/EC and Regulation (EC) No 714/2009 from the “Third Package” is 1 January 2015. Exceptionally, the implementation deadline for Article 11 of Directive 2009/72/EC is 1 January 2017.

- Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal natural gas market and repealing Directive 2003/55/EC;
- Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission network and repealing Regulation (EC) No 1775/2005;

The deadline for transposition into national legislation and the implementation of Directive 2009/73/EC and Regulation (EC) No 715/2009 from the ‘Third Package’ is 1 January 2015. Exceptionally, the implementation deadline for Article 11 of Directive 2009/73/EC is 1 January 2017;

- 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;
- Council Directive 2004/67/EC of 26 April 2004 concerning measures to safeguard security of natural gas supply;
- Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) – only Chapter III, Annex V, and Article 72(3)-(4);

- Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on limitation of emissions of certain air pollutants by large combustion plants;
- Council Directive 1999/32/EC of 26 April 1999 relating to a reduction in the sulphur content of certain liquid fuels and amending Directive 93/12/EEC;
- European Community Council Directive 85/337/EEC of 27 June 27 1985 on assessment of the effects of certain public and private projects on environment, with subsequent amendments of 3 March 1997 (Directive 97/11/EC);
- Directive 2003/35/EC of the European Parliament and the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment, - Article 4(2) of the European Community Council Directive 79/409/EEC of 2 April 1979 on conservation of wild birds.
- Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on promotion of electricity generated by using renewable sources in the internal market.

The deadline for submission of an implementation plan on the Directives 2001/77/EC and 2003/30/EC was 1 July 2007, while the deadline for transposition into national legislation and the implementation of Directive 2009/28/EC was 1 January 2014.

The acquis on environment shall be implemented insofar as they affect network energy. The deadline for implementation of Directive 2001/80/EEC and Directive 2010/75/EU shall be 31 December 2017 and 1 January 2018 respectively. According to Article 13 of the Treaty, the Contracting Parties recognize the importance of the Kyoto Protocol and shall endeavour to accede to it.

- Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings;
- Directive 2010/30/EU of the European Parliament and of the Council of 19 May 2010 on the indication by labelling and standard product information of the consumption of energy and other resources by energy related products;
- Directive 2006/32/EC of the European Parliament and of the Council of 9 April 2006 on energy end-use efficiency and energy services and repealing Council Directive 93/76/EEC;
- 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;
- 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 2008/92/EC of the European Parliament and of the Council of 22 October 2008 concerning a Community procedure to improve the transparency of

The implementation deadlines for the aforementioned Directives vary from December 2011 to January 2017. Directive 2009/119/EC of the European Parliament and of the Council of 14 September 2009 imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products.

The implementation deadline for this Directive is set for 1 January 2023.

gas and electricity prices charged to industrial endusers;

- Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics ;and
- Framework Convention on Climate Change was signed in 2000.

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

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

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

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

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

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

⁷ Available at "www.derk.ba".

⁸ Available at "www.nosbih.ba".

⁹ Available at "www.ferk.ba".

¹⁰ Available at "www.reers.ba".

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

In general in FBiH as well as in RS the authority may grant the right to exploit natural resources to the interested private entity. However, the licenses required for renewable energy projects starts from general licenses for electrical trading issued from entity level authorities provided that other permits have been obtained (construction, concession, usage etc.). Also, after obtaining general license, the licensor should obtain: trade license issued by entity level authority, electro-energy permit issued by entity level authority, construction license issued by entity level or cantonal level authority, distribution and supply license issued on entity level only in case where the entity wishes to pursue the activity of supply and distribution.

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

There are different types of licenses depending on authority level that is issuing it.

Regarding state level, SERC shall grant the following licenses within its competence: a) License for transmission of electricity; b) License for the activity of the Independent System Operator, c) International trading license, d) International electricity trading license for self-consumption.

In addition to these licenses, in accordance with its jurisdictions with regard to BD, SERC shall also issue the following licenses, i.e., permits: a) License for trade and supply with electricity in BiH territory, b) License for supply of non-eligible customers with electricity, c) Electricity distribution license, d) Electricity generation license for facilities with installed capacity exceeding 1MW, e) Permit for construction of power facilities with installed capacity exceeding 1 MW.

In RS the authority issuing licenses is RERS. In the electric power sector, RERS issues the following licenses: a) License for generation of electricity in the hydro power plants, thermal power plants with integrated mines and other facilities which capacity is more than 1 MW, b) License for distribution of electricity in a sense of transfer of electricity at middle voltage and low voltage network for the purposes of delivery of electricity to customers, c) license for supply of tariff customers with electricity, d) License for trade and supply of electricity on the territory of Bosnia and Herzegovina, e) License for construction of the electric power facility which capacity is more than 1 MW.

Concerning FBiH, FERC issues following licenses: a) License for power generation, b) License for power distribution, c) License for power supply. There are two types of power supply licenses: “Tier 1 Supply License” which is required for a distributor who supplies the electricity for non-eligible (tariff) Customers and who has a separate trade activity and 2) “Tier 2 Supply License” which is required for any legal person engaged in supply other than the distributor required to obtain a Tier 1 Supply License. A Tier 2 Supply License may also be granted to a distributor who holds a Tier 1 Supply License at the sole discretion of FERC but with adequate license conditions to assure that the interests of non-eligible (tariff) Customers are fully protected, d) Initial license for construction or reconstruction. This license is required for the construction or reconstruction of facilities and plants that will be used for generation or distribution. The exception to this requirement is the construction of any facilities or plants that will be used for the generation of electricity for that person’s own needs.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

In general, there is no license-exempt generation, but there are a few important

issues to mention here. Regarding FBiH, natural or legal entities generating electricity for their own use is not subject to obtain a license. The Law does not define accurately what is considered “own use”, so any person who generates electricity for its domestic purposes, and not commercial ones, should be granted this right without having an obligation to obtain a license.

With respect to RS, the Law does not explicitly state that there is a license-exempt generation, but from the Law and practice we can conclude that a license is not required for the construction of power facilities with an installed capacity of less than 1 MW. These facilities do not need to obtain a construction permit or a permit for generation of power if it falls within the above mentioned criteria (capacity less than 1 MW). Owners of these facilities can, and do not have to, request a Certificate on the electricity origin or Certificate (declaration) for generation installation. These certificates can be issued after the construction of a facility is completed and its purposes are certain premiums, special billing, etc. This will be explained in detail under question number 7.

Regarding the state level, there are no license-exempt examples.

INCENTIVES

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

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

8. 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 cogeneration 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.

RS has recently voted Decision on the amount of purchase prices and premiums for electricity generated from renewable sources or in efficient cogeneration.

Concerning FBiH, jurisdiction is divided between the Government of FBiH/relevant ministry and FERC, where the Government is in charge of prescribing the price, and FERC is in charge of licensing. In the end, FERC is the body that issues the decision on purchase prices, but on the suggestion of relevant ministry and with the consent of the Government, so the autonomy of FERC regarding this question is not guaranteed in total.

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

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

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

According to the new legislation the contract for the new plant will be signed for a period 12 years from the start of operation. After the

expiration of the contract period a privileged manufacturer will lose rights on guaranteed price but they will retain other rights that have qualified manufacturers (e.g., to freely sell electricity on market).

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

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

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

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

12. 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. Previously, there was only one company, named TURBINA IPD ltd, that was using equipment and materials for renewable energy based power plants from local suppliers. There are no more data about this company anymore, so we suppose they do not have business here anymore. They have been manufacturing wind turbines, and for their product they took materials produced in Bosnia and Herzegovina. The electrics, as the turbine itself, they had to import because there is no Cogeneration and other costs related to it.

Problem is that there are no companies that for their activity have manufacture of equipment or materials used in the construction of renewable energy based power plants. Companies doing activities related to this only distribute the equipment and materials imported from other countries, mostly from Holland. Another problem is that there is no such thing as a register of these companies which would ease the communication between regulating bodies on all levels in the country and meeting their needs. There are only few companies that manufacture certain materials for the manufacture of hydro power plants. Besides that, there is no company providing the electrics, as the turbines itself in Bosnia and Herzegovina.

13. 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.

In accordance with the Decree on Stimulating Manufacture of Electricity from Renewable Energy Sources and Efficient Cogeneration and Determining Compensation for Encouragement each supplier is required to mark the amount of total fees for the promotion of renewable energy sources that obliges the final beneficiary to pay those.

Above mentioned Decree defines unit fee expressed in convertible marks per kilowatt hour of electricity consumed (KM/kWh).

Funds raised from fees for renewable energy go to the Operator for Renewable Energy and Cogeneration, from which, among other costs, is done the payment of producers of electricity from renewable sources. Also, this account funds Operator for Renewable Energy and Cogeneration and other costs related to it.

STATISTICS

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

As previously stated, Bosnia and Herzegovina signed the EU obligatory protocol committing them to produce 20% renewable energy in comparison to their overall energy consumption by the year 2020. According to statistics from JP "Elektroprivreda HZ HB" d.d. Mostar, Energy resources of small hydropower plants in Bosnia and Herzegovina is 1,004.63 MW of strength and 3,520GWh of electricity annually, which represents 12.64% of the total hydropower potential of Bosnia and Herzegovina. According to a study that GTZ (Deutsche Gesellschaft für Technische 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.

Below given tables give information on basic power indicators in Bosnia and Herzegovina for year 2013 and year 2014.

Table 1: Basic Power Indicators of Bosnia and Herzegovina – year 2014

Year 2014	EP BIH	ERS	EP HZHB	Komunalno Brčko	BIH
Generation in hydro power plants	1.542,61	2.522,09	1.755,81		5.820,52
Generation in thermal power plants	5.786,99	3.133,66			8.920,65
Generation in small and industrial PPs	188,97	82,39	17,31		288,67
Generation	7.518,57	5.738,14	1.773,12		15.029,84
Distribution consumption	4.392,55	3.526,02	1.310,79	251,65	9.481,01
Transmission losses					304,46
Large customers	442,76	155,87	1.811,57*		2.410,20
PPs self-consumption		14,12			14,12
Consumption	4.835,31	3.696,01	3.122,37	251,65	12.209,79

*Including the amount of 755,93 GWh which Aluminij and B.S.I. purchased as eligible customers

Source: *www.derk.ba*

Table 2: Basic Power Indicators of Bosnia and Herzegovina – year 2014

Year 2013	EP BIH	ERS	EP HZHB	Komunalno Brčko	BIH
Generation in hydro power plants	1.854,43	2.920,91	2.348,28		7.132,62
Generation in thermal power plants	5.549,53	3.390,12			8.939,65
Generation in small and industrial PPs	150,59	73,98	14,71		239,28
Generation	7.554,55	6.385,01	2.362,99		16.302,55
Distribution consumption	4.401,52	3.567,50	1.343,83	258,14	9.570,99
Transmission losses					343,10
Large customers	448,20	126,21	2.048,14*		2.622,55
PPs self-consumption		13,26	8,74		22,00
Consumption	4.849,72	3.706,97	3.400,71	258,14	12,558,64

*Including the amount of 884,94 GWh , which Aluminij purchased as an eligible customer

Source: *www.derk.ba*

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MACHADO, MEYER, SENDACZ E OPICE ADVOGADOS

GENERAL

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

In Brazil, renewable sources of energy play a significant role in the country's energy matrix. Differently from many countries across the world (most of them largely dependent on traditional fossil-fuelled power plants), Brazilian hydrology and topography historically allowed the development of an energy matrix strongly dependent on hydroelectric power. However, since the past decade Brazil is continuously learning that one's blessing might be one's curse. On 2001 and 2002, Brazil faced severe climate changes that nearly stopped Brazilian economical growth. The lack of rain cumulated with high temperatures dropped the level of the water in the reservoirs of the main Brazilian hydroelectric power plants forcing the Brazilian Federal Government to take the hard decision of stopping the energy production of several hydroelectric power plants (and consequently reducing the economical growth) or continuing the generation of energy, which could kill the reservoirs of such power plants and hinder the supply of water to many regions in Brazil.

At that time, the decision taken by Brazilian Federal Government was to generate energy at low level and speed-up the enactment of a number of policies tending to promote the development of other renewable sources of energy and reduce Brazilian exposure to hydroelectric power, which comprised more than 90% of the Brazilian energy matrix.

As result of Brazilian energy shortage crisis, 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 created by Law No. 10,438/02, as amended, and implemented by Decree No. 5,025/2004. The plan was divided into two phases: the purpose of the first stage of PROINFA was to produce 3,300 MW from alternative sources, equally distributed among wind power, PCHs and biomass sources. In the second stage, alternative sources should meet 10% of annual electricity consumption demand in Brazil within 20 years.

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

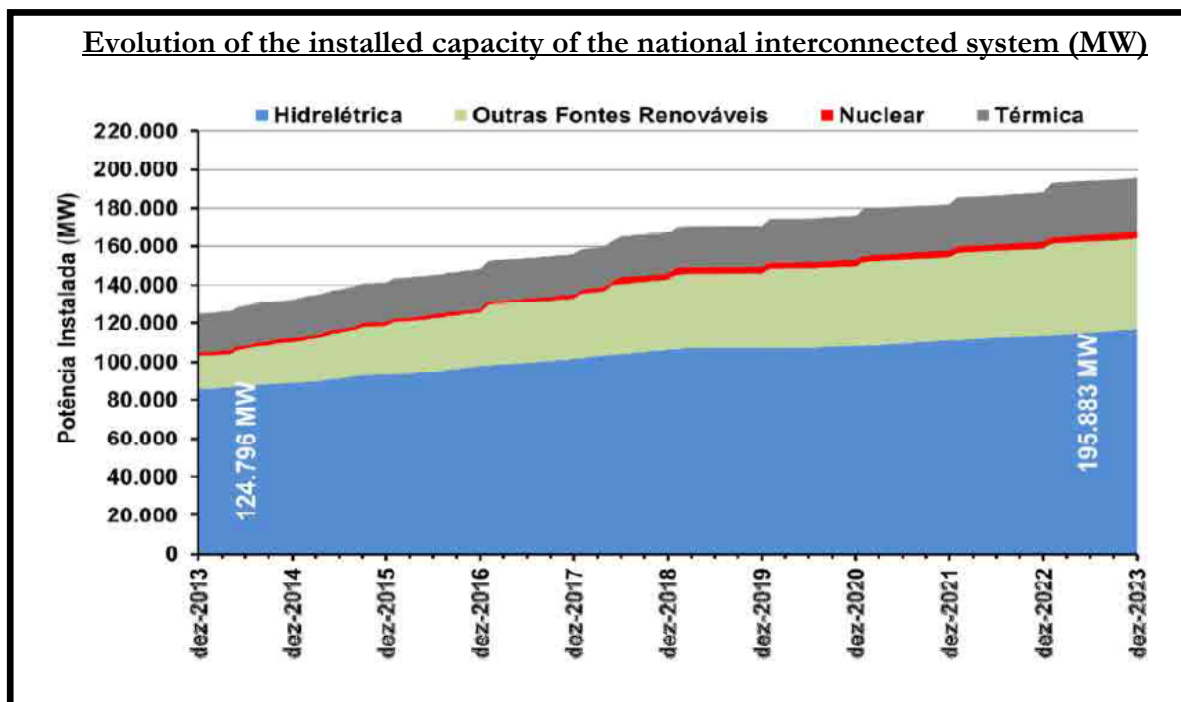
the renewable industry in Brazil and resulted in the implementation in its first phase of 2,649.87 MW of renewable energy in Brazil, divided into 41 wind, 19 biomass and 59 small hydroelectric plants.

However, the second phase of PROINFA has never been launched. After the implementation of the first phase of PROINFA, the Brazilian government continued to provide firm incentives to the private sector for the diversification of Brazilian energy matrix through renewable energy projects by, among others, conducting public auctions for purchase of energy on a long-term basis. With the successful development of federal

governmental auctions, no initiative was taken to proceed with the second phase.

These auctions which are coordinated by the Ministry of Mines and Energy – “MME” and the National Electric Energy Agency – “ANEEL” have led to the development of local biomass and wind energy industries and has even spurred the interest of foreign investors.

As can be seen in the graph below, it is expected an increase of the installed capacity of Brazil from 125GW (in 2013) to nearly 196GW (in 2023) mostly boosted by a significant increase of renewable projects in the coming decade:



(Source: EPE, Plano Decenal de Energia 2023)

Was only on 2007, however, that the first energy auction for contracting energy output from alternative sources projects was held. In this case, wind energy was placed alongside hydroelectric and other sources such as biomass fuels.

Although the price for wind power (ranging around R\$140.00/MWh) was not sufficiently competitive for allowing the development of wind power plants, the initiative of organizing energy auctions for renewable energy projects, which are still being promoted on annual basis,

were important for securing the bankability and market availability for such new renewable projects, becoming an efficient and cost-friendly way to keep increasing the input of renewable energy in the Brazilian energy matrix.

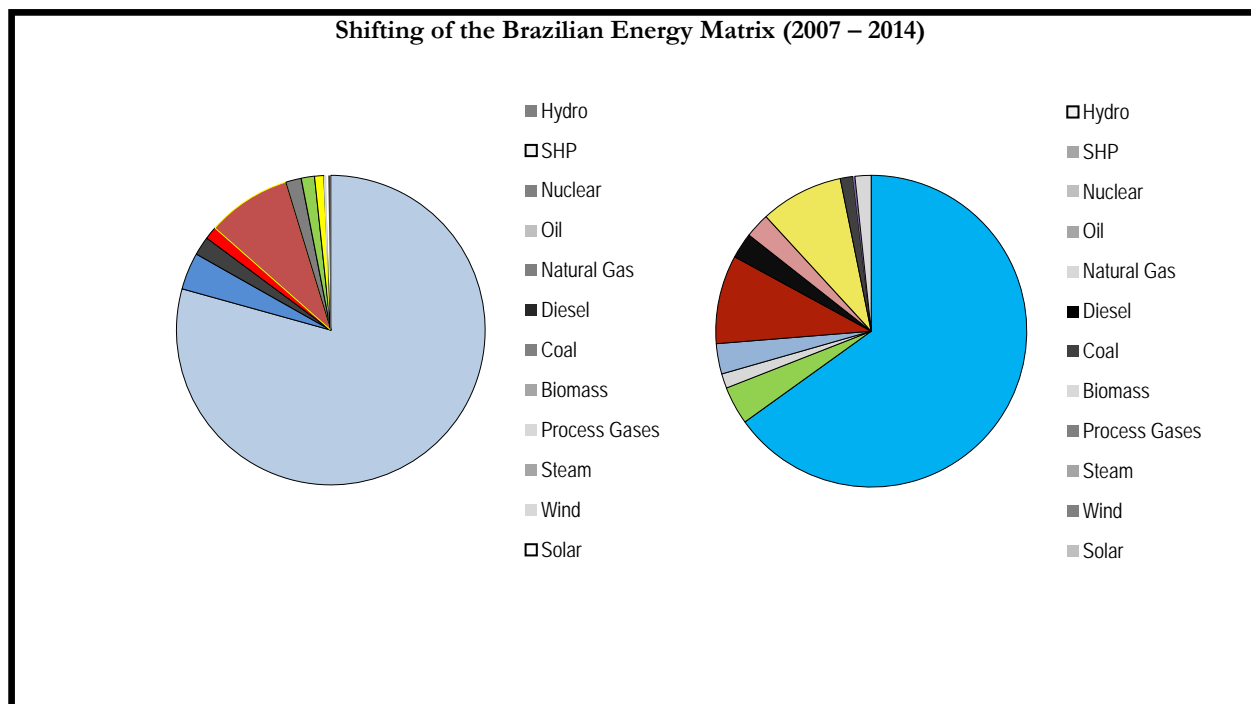
It was only on 2009 that the first auction exclusively for energy from wind source was held. The auction was organized by ANEEL dependent on the Ministry of Mines and Energy as a “reserve auction” or auction for additional energy to be supplied to the basic grid -National Integrated System (“SIN”) - 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.

With the success of 2009 energy auction, several auctions were promoted by Brazilian Federal Government resulting on a significant reduction of dependency to hydroelectric power.

The Figure 1, below, represents the changes to the Brazilian energy matrix after2007.

Although still highly dependent on the energy input from large hydroelectric power plants, which represents nearly 70% (seventy per cent) of total current energy production in Brazil, the production of energy by other different energy sources, such as biomass, thermo power plants, small hydroelectric power plants, wind farms and solar plants, is progressively occupying an outstanding position in the Brazilian energy matrix.



(Source: EPE / Plano Decenal de Expansão de Energia PDEE 2008-2017)

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.

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, especially considering the declared intention of Brazilian Government to expand the total energy input from renewable sources from the current 25.5 GW to 47.2 GW on 2023, which represents an actual increase of 21.7 GW of energy generated by renewable sources. In order to achieve such goal, Brazilian Government is mainly focusing in promoting the exploitation of Brazil’s vast and almost entirely untapped wind and solar potential through spurring the interest of foreign and national private investors financial by offering financial support from the Brazilian National Development Bank – BNDES, tax and

regulatory incentives, and facilitating the environmental licensing procedures.

Although the legal framework for renewable sources is taking its first steps, much needs to be developed in relation with the environmental rules and creating more specific conditions for the companies that generate alternative sources in order to make investments in this sector more and more attractive.

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 law and regulations.

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, which emerged on a moment in which Brazil was struggling to overcome the energy shortage crisis, also defined important mechanisms for subsidies for the use of renewable sources in SIN, amongst other benefits for generating companies of the alternative sources.

Law 10,848 dated 15 March 2004 instituted the so-called “new model” of the Brazilian Power Sector allowing the trading of electric energy to take place either in the free market (ACL), through which the power generating companies are authorized to freely negotiate the price and conditions for delivering its

energy output to large consumers and energy trading companies, or in the regulated market (ACR), through which the power generating companies commercializes its energy output with distribution concessionaries, in a highly regulated environment and by means of standardized long-term power purchase agreements.

In the ACR the trading of energy is conducted through specific auctions organized by ANEEL, under guidelines set forth by the Ministry of Mines and Energy.

Specific rulings for the authorization or registration of the renewable energy projects have been issued by ANEEL since 2009. Currently such requirements are governed by Resolution 390/2009, as amended by Resolution 546/2013.

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

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

Since the enactment of Resolution 482/2012 nearly 540 distributed generation projects have been implemented in Brazil (of which 500 are photovoltaic projects). However, such figure is

significantly lower than the originally expected by Brazilian Government.

In this sense, in order to achieve the main goal of increasing the energy input of distributed generation projects up to 2 GW until 2024, ANEEL is currently promoting certain amendments to Resolution 482/2012 in order to (1) simplify the rules related to the connection of the distributed generation projects to the SIN, (2) review and improve the compensation system, (3) increase the installed capacity up to 5 MW, (4) reduce costs in order to increase the adherence of Brazilian residential and industrial consumers.

In addition to the existing regulation regarding the renewable energy sector, which still incipient, there are a number of bills related to the theme under discussion in the Special Committee on Renewable Energy of the Brazilian House of Representatives. The main purpose of such Special Committee is to develop the Brazilian renewable energy law, in order to create of a strong and stable renewable sector.

Despite the political and financial incentives for the development of a more sustainable energy matrix through the increase of energy production by renewable energy projects (and the reduction of Brazilian dependency on hydroelectric energy), the Brazilian energy sector is still suffering high dependency on hydroelectric generation, which creates a considerably instable environment for the Brazilian economical growth. The summer of 2014 was one of the driest seasons for many years, and has brought again the concern that a new rationing program needs to be implemented.

In order to avoid the adoption of such new rationing program, Brazilian Government ordered all fossil-fuelled power plants to operate in full capacity, which caused severe impacts in the energy price, resulting in the significant financial losses to Brazilian distribution concessionaries.

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

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

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

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

The MME is responsible for setting up the planning for the domestic energy sector, monitoring Brazilian Power Sector safety of supply, and for defining preventive actions to preserve safety of supply in case of imbalances between supply and demand of electricity. As of the sanction of Law No. 10,848 dated March 2004, which instituted the “New Energy Model”, the Brazilian government, acting primarily through the MME, assumed certain functions previously assigned to ANEEL, including preparing the guidelines that govern the granting of concessions and

the issuance of regulations with respect to the bidding process for public utility and electricity plants concessions. MME, for example, is the body that approves the amount of energy to be purchased in a public auction promoted by the Federal Government. Consequently, the MME defines the list of generation projects.

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

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

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

The National Power System Operator - ONS, was created by Law No. 9,648 in 1998 as a private, non-profit organization made up of

agents representing customers and private and state-owned companies involved in the electricity generation, transmission, and distribution businesses. The New Industry Model Law granted the Brazilian government the authority to appoint three members to the ONS executive committee.

The Wholesale Energy Chamber - CCEE was instituted in August 2004 to take over the attributions previously carried out by the Wholesale Electricity Market. Its principal attributions are determining the spot price, used to value short term market transactions; executing so-called energy accounting processes to identify the agents and amount of electricity involved in multilateral short term market transactions; preparing financial settlement of amounts calculated in the energy accounting process; and preparing and executing electricity auctions within ACR by delegation of ANEEL.

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

With the purpose to construct and operate renewable energy projects, the entrepreneur shall obtain a prior authorization issued by ANEEL, pursuant to Resolution 390/2009, as amended. After the obtainment of such preliminary authorization, the developer will be allowed to proceed with the relevant environmental licensing. Please note that some projects, such as large hydro power plants, may only be implemented under the concession regime, by means of the execution of concession agreements with granting authorities (the Ministry of Mines and Energy in the electricity sector), preceded by bidding procedures.

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

documentation in order to attest his qualification to receive such authorization.

Specifically regarding wind power plants, after the enactment of ANEEL Resolution No. 546/2013, wind power developers have to present, in addition to the required technical documents, a statement issued by owners of already authorized wind farms implemented or to be implemented in the whereabouts of the new wind farm acknowledging the construction of a new wind and confirming that the implementation of such wind power will cause interferences in the energy production capacity of the existing/authorized power plants. ANEEL promoted such modification with the purpose to avoid the construction of new wind farms that may affect the performance of already installed or authorized projects.

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

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

- *Preliminary License (Licença Preliminar or "LP)* – it is granted during the preliminary stage of planning the enterprise or activity

and approves its location and conception based on the environmental studies presented by the entrepreneur attesting the environmental feasibility and setting forth the basic conditional requirements to be met during the subsequent stages of its implementation;

- *Installation License (Licença de Instalação or “LI”)* – it authorizes the setting up of the enterprise according to the specifications in the approved plans, programs and designs, including measures of environmental control and conditions; and
- *Operation License (Licença de Operação or “LO”)* – it authorizes the operation of the activity or enterprise after effective compliance with the foregoing licenses and with the environmental control and conditions determined for the operation.

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

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

Under the current legislation in Brazil, certain power plants are exempted from complying with the requirements imposed by Resolution 390/2009, as amended by Resolution 546/2013.

Pursuant to Article 8 of Law 9,074/1996, hydroelectric power plants with an installed capacity lower than 3 MW and thermoelectric power plants with an installed capacity lower than 5 MW are subject to a simplified procedure in which the developer is only required to submit a formal written communication notifying ANEEL that the power plant will be implemented. For such cases the authorization or concession regime are not applicable.

Also, Resolution 482/2012 establishes a simplified procedure for implementing distributed generation units. Similar to the procedure imposed by Article 8 of Law 9,074/1996 for implementing a distributed generation unit, the interested parties are only required to file before ANEEL a communication informing (a) the location of the generating unit, (b) the name distribution concessionaire to which the generating unit will be connected, (c) the total installed capacity of the generating unit, (d) the date on which is expected to initiate the operation of the generating unit, and (e) information of the consumer for settlement purposes. According to the rules applicable for distributed generation, the consumer must comply with connection and operation requirements imposed by the local distribution concessionaire, in order not to cause damages to the local distribution system.

INCENTIVES

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

Generation companies can adhere to the Special Regime of Incentives for the Development of Infrastructure (*Regime Especial de Incentivos para o Desenvolvimento da Infra-Estrutura – “REIDI”*) established by Law No. 11,488, dated of 15 June 2007 and regulated by the Decree No. 6,144/2007 that suspends the requirement of

specific taxes PIS/PASEP and COFINS in the acquisition and import of services and equipment linked to infrastructure projects approved and carried out in a period of 5 years as from the approval date.

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

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

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

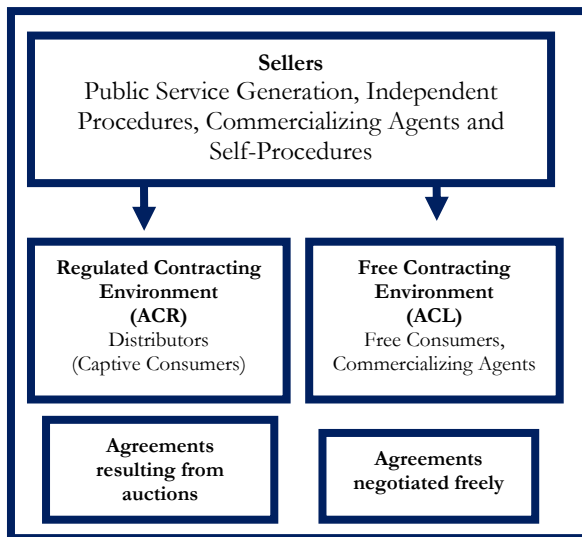
In addition, in 2011, the Brazilian Government, seeking to attract more investments for the country, issued Law No. 12,431/11, dated as of 24 June 2011, which enabled the creation of infrastructure bonds (*debentures*). The referred law permits specific purpose companies to issue infrastructure bonds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

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

Under the new model for the electric sector, the trading (or commercialization) of electric energy may take place in two different markets: (i) within the regulated market (*Ambiente de Contratação Regulada- ACR*), electric power purchase agreements (so-called CCEARs) are executed by and between selling agents and purchasing agents (distributors) through specific auctions hosted by the government; and (ii) within the free market (*Ambiente de Contratação Livre*), on the other hand, negotiation among the generating Agents, Commercialization Agents, Free Consumers (i.e. consumers with a minimum energy demand of 3MW), 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:



(Source: CCEE)

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

Also, currently Brazilian law provides for several incentives for the consumption of energy produced from renewable sources by (1) allowing consumers with energy demand of 0.5 MW or higher (the so-called “special consumers”) to acquire energy produced by renewable sources with lower prices than the energy acquired from distribution companies, (2) organizing energy auctions specifically for the acquisition of energy from renewable sources, (3) promoting the expansion of the distributed generation, (4) reducing connection cost of renewable sources power plants, (5)

providing special credit lines and financial support from the Brazilian National Development Bank – BNDES, in order to secure the bankability of new renewable projects, among others.

9. 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. 5,163/2004). In other words, winners of the auction shall be those bidders which offer electric power for the least price per Mega-Watt Hour to supply the demand envisaged by the Distributors. A power purchase agreement (in the form of a CCEAR) is then executed between the winners and the Distributors.

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

In subsequent energy auctions, the maximum price defined by the MME was set at R\$189/MWh (in the 2009 wind energy auction) and at R\$167.00/MWh for wind and biomass and R\$155.00 for small hydroelectric power plants (in the 2010 auctions). During the auction, the price dropped to an average of R\$148.39/MWh (in the 2009 wind energy auction) and to R\$130.86 (wind), R\$144.20 (biomass) and R\$141.93 (small hydroelectric power plants) in the 2010 auctions, and R\$214.00 (photovoltaic) in the 2014 auction.

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

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

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

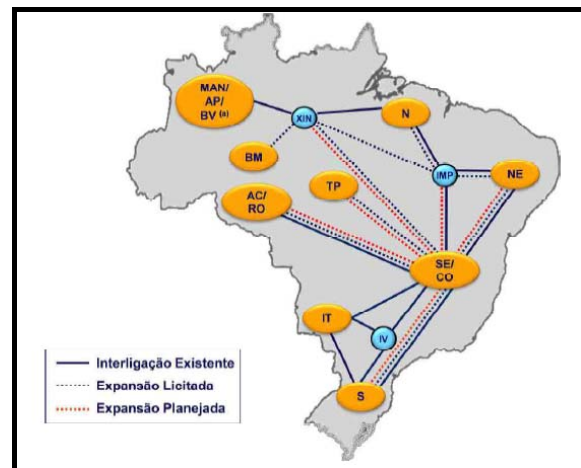
Among other incentives created by the Brazilian government, our energy regulatory authorities have also enabled the possibility of using credits arising from the Clean Development Mechanism – CDM created under the Kyoto Protocol – ratified by Brazilian Government on 1998 – in connection with renewable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

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

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

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

The Brazilian electricity network consists of one main interconnected grid, namely SIN, comprised of several transmission lines, connecting the regional systems: South, Southeast, Centre-west, Northeast and part of the Northern area. The SIN is responsible for supplying energy to approximately 98% of Brazil's market of electric energy. The basic grid is composed by more than 90,000 km of transmission lines. The Brazilian regions that don't form part of the SIN compose the isolated system. In 2009 Brazil the so-called "isolated systems" supplied energy to approximately 3% of the Brazilian population.



(Source: EPE, Plano Decenal de Energia 2023)

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

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 grid 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 through 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.

12. 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, § 4^o only producers complying with the 60% local content requirement for equipment and services for the first phase of the program and 90% for the second phase, were qualified for the auction.

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

However, please note that local content requirements for equipment and services are also condition to qualify certain financing facilities of the BNDES, the Brazilian National Development Bank, including the FINEM¹ and FINAME².

13. 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.

¹ 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>.

² 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>.

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, § 1^o 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) certain photovoltaic power plants (iii) operate with wind, biomass or by a qualified co-generation process and that initiated the commercial operation between 23 April 2003 and 31 December 2003; (iii) use as energetic input, at least 50% of biomass composed by solid waste and/or biogas of landfill or animal or vegetal waste, as well as sludge from sewage treatment plants; and (iv) the power plants that have their reduce percentage of generation established by an authoritative act and initiated the commercial operation until 31 December 2003.

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

December, 2017. As for solar projects entering into commercial operation after December, 2017, the referred resolution grants a 50% reduction over TUSD and TUST.

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

c) Another type of incentive that is applicable for renewable energy is the Electricity Development Account (“CDE”). This mechanism was created on April 2002 by the Brazilian government) to promote (i) competition of the alternative sources market, such as from wind, biomass, PCHs, natural gas, and Brazilian minerals, in areas served by interconnected power systems; and (ii) the universal supply of electricity services. CDE is effective for 25 years and is managed by Eletrobrás.

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

CDE can also be used to subsidize tariffs to low-income household consumers when funds that the Brazilian government uses for such purpose

are insufficient. Low income consumers are those served by single-phase circuits with a monthly consumption from 80 to 220 kWh/month, registered in the single registry of the Brazilian government or in the family support program of the Brazilian government by 27 February 2006.

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

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

CCC funds are managed by Eletrobrás. It was ANEEL's role to set the value of the early quotas to be paid by electric-power distributors to provide funds for the fuel-consumption account. Before the approval of the Provisional Measure 579/2012, converted into Law No. 12,783/2013 these charges were in turn, transferred to consumers by means of a monthly additional contribution included in their electricity bills. However, the above mentioned Provisional Measure established that the payment of fuel-consumption account is no longer required. Despite this provision,

CCC's resources shall still be used to subsidize the price of diesel fuel for thermoelectric-generation facilities in isolated areas of the country not serviced by SIN.

STATISTICS

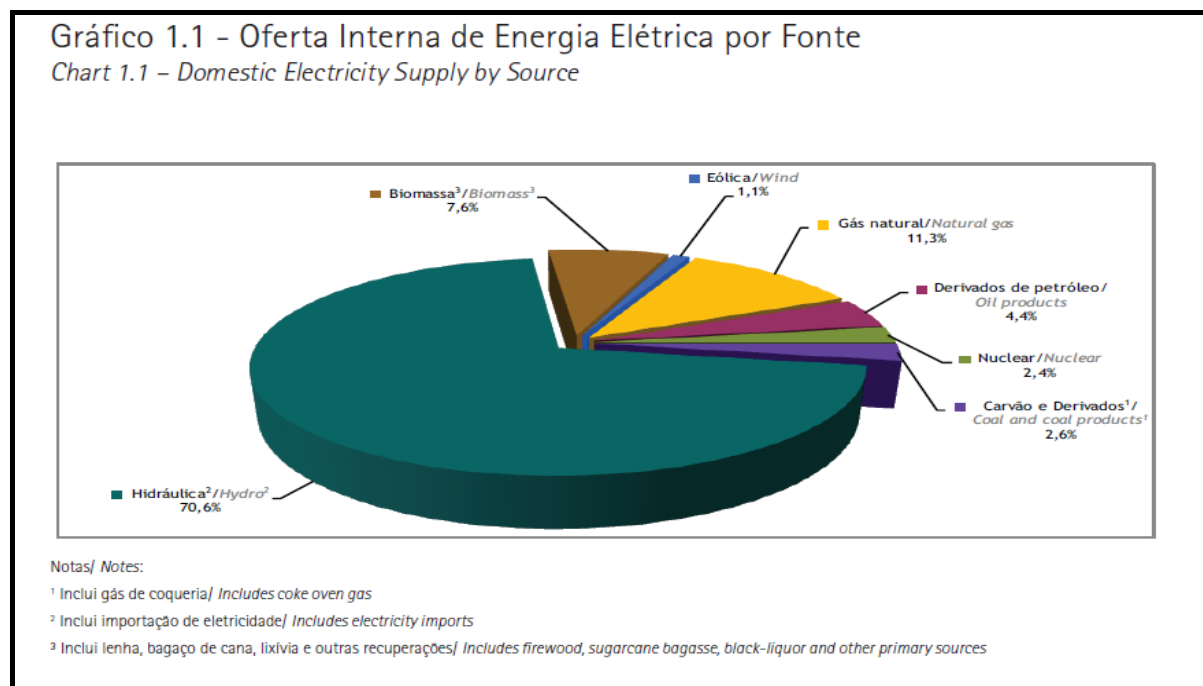
14. What is the percentage of electricity generated based on each type of renewable energy source in the total generation of electricity on a country-wide scale?

According to data published by the Energy Research Company – EPE, on 2014, Electricity generation in Brazil, including public service power plants and self-producers, was 659.1 TWh.

As can be seen in the graph below, although showing a substantial reduction during the past years, hydroelectric power plants stand as the main source of electricity in Brazil, accounting for 70.6% 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 1.1% of the domestic supply and generation of energy from biomass for 7.6%. However, as referred below, these figures are increasing significantly as a result of the auctions coordinated by ANEEL for purchase of power from renewable sources. As such, the installed power from renewable sources is to increase significantly in the coming years.



(Source: 2014 Balance of National Energy – EPE)

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CROATIA

Selma Šehović

MARIĆ & CO

GENERAL

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

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

Local production in hydropower and thermal power plants constitutes more than 90% of total electricity production per year. Considering that high portion of hydropower potential is already exploited and there is a strong dependence on imported coal and natural gas, Croatia is consistently looking for new opportunities to diversify the energy sources. Potential to become a net exporter of electricity, well-developed grid and strategic geographic position for power trading and

transportation between Balkans and Central/Western Europe encourages Croatia to seek for an increase of local power generation capacities. Development of the LNG and renewable energy projects are currently targeted for diversified and sustainable solutions.

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

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

In October 2013 Croatia adopted its National Renewable Energy Action Plan (“NREAP”) which shifts the focus from encouraging wind farm construction to energy production from biomass, biogas, cogeneration plants and small hydropower plants. This shift has also been reflected in a newly adopted tariff scheme

applied from 1 January 2014, which reduced the total incentive costs and abolished the feed-in tariff for all wind power plants and for most other power plants using renewable energy source with an installed capacity over 5 MW. The NREAP is in line with the Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources. In order to reach the overall target of 20% by 2020, the NREAP repeated the strategic target of 35% share of renewable energy in electricity production, as well as 10% share of renewable energy in transport (i.e., biofuels) and 20% share in heating and cooling.

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

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

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

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

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

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

REGULATION

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

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

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

- *Energy Act 2012*, which harmonises the Croatian legislation with the EU Third

Energy Package and regulates measures to ensure a secure and reliable energy supply, efficient power generation and its use, as well as stipulates principles for the formation and implementation of the energy policy and strategy. It also defines key legal concepts applied in the energy sector, including promotion of the use of renewable energy sources, and sets the framework for the pricing of energy, the system of guarantees of the electricity origin, and general principles of incentives for an increased use of renewable energy and cogeneration.

- *Electricity Market Act 2013*, which regulates the rules and measures for safe and reliable activities in the electricity sector, including the generation of electricity from renewable sources. It also sets the terms and conditions for electricity trading and organisation of the market, and lays down the rules relating to the customers protection, access to the market, organisation of electricity undertakings, principles for cross-border transmission of electricity, etc.
- *Heat Act 2013*, which regulates organisation of the district heating sector in Croatia and sets the terms and conditions for activities therein, and which transposed the requirements of the Directive 2009/28/EC related to the use of energy from renewable energy sources for heating.
- *Act on Regulation of Energy Activities 2012*, which provides for the establishment and implementation of the regulatory system for the energy sector and the procedure for establishing the HERA, its organisation, competences and decision-making.
- *Tariff System for the Production of Electricity from Renewable Energy Sources and Cogeneration*, as adopted by the Government in 2013 (wording currently in force), which establishes feed-in tariffs and indicates application of reference prices for electricity produced from renewable energy sources and in cogeneration power plants.
- *Regulation on a Minimal Share of Incentivised Production of Electricity from Renewable Energy Sources and Cogeneration*, as issued by the Government in 2007 and further amended, which prescribes the conditions for a minimal off-take of electricity produced from renewable energy sources and in cogeneration power plants, and respective obligations by the electricity market participants.
- *Regulation on Incentives for the Production of Electricity from Renewable Energy Sources and Cogeneration*, as issued by the Government in 2013, which defines the manner of calculation, collection, use, distribution of and payments of compensations with regard to an incentive fee to be paid by electricity customers for electricity produced from renewable energy sources and in cogeneration power plants.
- *Regulation on Establishment of a System of Guarantees of Origin for Electricity*, as adopted by the Government in 2013 and further amended, which establishes a system of guarantees of the electricity origin, with the aim of determining the share or quantity of electricity produced from renewable energy sources and cogeneration in the total amount of electricity supplied by a supplier to final customers
- *Rulebook on Acquiring the Status of Eligible Producer of Electricity*, as adopted by the Ministry of Economy in 2013, which establishes the terms and conditions for electricity undertakings planning to produce

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

electricity from renewable energy sources or in cogeneration power plants, to acquire for the status of eligible producer and thus to qualify for incentive schemes applied.

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

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

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

As regards biofuels, activities in the field are regulated by the Act on Biofuels for Transport 2009 (as further amended) and by its implementing regulations, including the Rules on Measures to Encourage the Use of Biofuels in Transport (2010), the Conditions and Procedural Rules for Incentives for the Production of Biofuels for Transport (2011), the Regulation on Encouraging the Production of Biofuels for Transport (2011), as well as annual

Governmental decrees on the amount of a compensation fee and on the amount of subsidies for encouragement of biofuel production.

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

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

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

- *The Government* forms the national energy policy, submits the Energy Strategy to the Parliament and ensures its implementation, establishes public service obligations, prescribes energy emergency measures, adopts the NREAP, also passes technical and safety requirements for energy infrastructures, long-term and annual energy balances, as well as other secondary legislation acts regulating performance in the energy sector, including the use of renewable energy sources and incentive schemes applied thereto.
- *The Ministry of Economy* (previously – the Ministry of Economy, Labour and Entrepreneurship), which is in charge of the energy sector, implements national energy policies established by the Parliament and formed by the Government, submits proposals for legal acts and energy balances to be adopted by the Government, ensures reliable and secure supply of energy, adopts secondary legislation acts regulating energy activities, issues energy permits for new

electricity generation facilities, and also carries out an administrative supervision of the energy sector.

- *The Ministry of Environmental and Nature Protection* implements national policies in the field of the environmental protection, including those related to safe construction, maintenance and operation of the energy infrastructure, as well as authorises development of energy facilities.
- *The Croatian Energy Regulation Agency (HERA)* is a designated independent regulatory authority vested with powers in the energy sector under the Act on Regulation of Energy Activities 2012 and other applicable laws pursuant to the requirements of the so-called EU Third Energy Package (Electricity Market Directive 2009/72/EC and Gas Market Directive 2009/73/EC). HERA is in charge of issuance of licenses for activities in the energy sector, monitoring of energy activities, regulation of the electricity market, granting the status of eligible producer, adoption of methodologies for calculation of regulated tariffs and setting those tariffs, monitoring the implementation of requirements for transparency and independency of energy activities, monitoring the security of supply, and performing other regulatory functions.
- *The State Inspectorate* carries out an inspectional supervision of the implementation of requirements for the energy infrastructure objects and related operational activities, as established by the Energy Act 2012, other applicable laws and regulations.

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

construction of facilities, enhanced local use of renewable energy sources and energy efficiency.

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

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

- *Environmental impact assessment (EIA)* performed by the Ministry of Environmental and Nature Protection under the terms and conditions stipulated in the Environmental Protection Act 2007 and its implementing regulations. The EIA is mandatory for wind power plants with a projected installed capacity of more than 20 MW and for all other power plants using renewable energy sources with a projected installed capacity of more than 100 MW. In case of power plants with a projected installed capacity between 10 MW and 100 MW (for wind power plants – between 10 MW and 100 MW), a full EIA is performed only if the Ministry considers that as necessary.
- *Location permit* issued by competent local administrations or the Ministry of Environmental and Nature Protection, depending on the State-level importance of the infrastructure project, under the terms and conditions stipulated in the Physical Planning Act 2013 and its implementing regulations. A location permit issued by the Ministry is inter alia required for construction of power plants of 20 MW of installed capacity or higher, together with accompanying facilities and buildings.
- *Energy permit* issued by the Ministry of Economy, which authorises to build and run power plants using renewable energy

sources. Each developer of the renewable energy project is obliged to hold a final and binding energy permit before the construction permit stage.

- *Construction permit* issued by competent local administrations or the Ministry of Environmental and Nature Protection under the terms and conditions stipulated in the Building Act 2013 and its implementing regulations. For power plants of less than 20 MW of installed capacity, only one decision allowing the construction is required, instead of separate location and construction permits.
- *Preliminary decision on the status of eligible producer* to be acquired by the decision of HERA in accordance with the Rulebook on Acquiring the Status of Eligible Producer of Electricity, as adopted by the Ministry of Economy.
- *Power purchase agreement* with the Croatian Energy Market Operator (HROTE) guaranteeing the off-take of electricity produced from renewable energy sources for a period of applied incentive schemes (currently – 14 years).
- *Grid connection and use contract* to be entered with the transmission system operator (HOPS d.o.o.) or the distribution system operator (HEP-DSO d.o.o.), following the applicable procedural requirements for connection to the grid, including those specifically applied for wind power plants. It has to be noted that certain approvals of the system operator on the possibility for connection to the grid may be required before issuance of the energy permit.
- *Use permit* to be obtained from the authority that issued the relevant construction permit. The use permit authorises to proceed with the use and operation of the power plant.
- *License for generation of electricity* issued by HERA for a period from 5 to 30 years. Such a license

authorises production of electricity in the power plant and its delivery to the grid. Licenses are issued under the terms and conditions stipulated in the Regulation on Licenses for Performing Energy-Related Activities, as adopted by the Ministry of Economy in 2007 and further amended.

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

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

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

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

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

Under the Article 10 of the Electricity Market Act 2013, license-exempt generation of electricity is permissible for one's own purpose, encompassing the generation of renewable energy as well. License-exempt generation for commercial purposes is excluded.

INCENTIVES

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

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

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

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

The HROTE is obliged by the Electricity Market Act 2013 to purchase the entire amount of electricity generated by so-called “eligible producers” and delivered to the grid. Each electricity undertaking, which holds all necessary authorisations for construction of the power plant using renewable energy sources, may apply for the status of eligible producer. The status of eligible producer is

acquired by the decision of the HERA in accordance with the Rulebook on Acquiring the Status of Eligible Producer of Electricity, as adopted by the Ministry of Economy.

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

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

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

Purchase and sale of electricity is being realised on monthly basis in line with respective contracts between eligible producers and HROTE, on one hand, and between HROTE and suppliers, on the other hand. Each eligible producer receives the minimum price guarantee, i.e., the feed-in tariff or reference price, as explained herein below, under the terms and conditions stipulated in the Tariff System adopted by the Government. Whereas suppliers are obliged to pay to the HROTE an incentive fee set by the Governmental decree and collected from customers. An incentive fee applied from 1 November 2013 is equal to HRK 35 per MWh (approx. EUR 4.6 per MWh). Incentive fees collected by HROTE are used for the payoff of minimum price guarantees to eligible producers.

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

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

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

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

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

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

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

RES technology	Installed capacity (production per year)	Feed-in tariff (per kWh)
Wind energy	≤ 1 MW	HRK 0.72 (approx. EUR 0.094)
	> 1 MW	HRK 0.71 (approx. EUR 0.093)
Solar energy (applied to all PVs, if no specific tariff is set)	≤ 1 MW	HRK 1.10 (approx. EUR 0.14)
Solar energy	≤ 10 kW	HRK 2.63 (approx. EUR 0.35)

(building-integrated PVs)	From > 10 kW to ≤ 30 kW	HRK 2.23 (approx. EUR 0.29)
	From > 30 kW to ≤ 300 kW	HRK 1.65 (approx. EUR 0.22)
Solar energy (non-integrated PVs built on the site of the existing building)	≤ 10 kW	HRK 2.00 (approx. EUR 0.26)
Solar energy (PVs used to produce electricity and to generate heat or hot water)	≤ 10 kW	HRK 3.16 (approx. EUR 0.41)
	From > 10 kW to ≤ 30 kW	HRK 2.45 (approx. EUR 0.32)
	From > 30 kW to ≤ 300 kW	HRK 1.70 (approx. EUR 0.22)
Hydropower	≤ 1 MW (≤ 500 MWh)	HRK 1.20 (approx. EUR 0.16)
	≤ 1 MW (> 500 to ≤ 1000 MWh)	HRK 0.80 (approx. EUR 0.11)
	≤ 1 MW (> 1000 MWh)	HRK 0.60 (approx. EUR 0.08)
	From > 1 MW to ≤ 10 MW (≤ 5000 MWh)	HRK 1.00 (approx. EUR 0.13)
	From > 1 MW to ≤ 10 MW (> 5000 to ≤ 15000 MWh)	HRK 0.70 (approx. EUR 0.09)
	From > 1 MW to ≤ 10 MW (> 15000 MWh)	HRK 0.57 (approx. EUR 0.08)
Geothermal energy	All capacities	HRK 1.20 (approx. EUR 0.16)
Solid biomass (excluding waste)	≤ 300 kW	HRK 1.30 (approx. EUR 0.17)
	From > 300kW to ≤ 2 MW	HRK 1.20 (approx. EUR 0.16)
	From > 2 MW and ≤ 5 MW	HRK 1.15 (approx. EUR 0.15)
	From > 5 MW to ≤ 10 MW	HRK 1.05 (approx. EUR 0.14)
	From > 10 MW	HRK 0.90 (approx. EUR 0.12)
Biogases (from agricultural waste)	≤ 300 kW	HRK 1.42 (approx. EUR 0.19)
	From > 300 kW to ≤ 2 MW	HRK 1.20 (approx. EUR 0.16)
	From > 2 MW to ≤ 5 MW	HRK 1.12 (approx. EUR 0.15)
Power plants using animal fat	≤ 5 MW	HRK 1.65 (approx. EUR 0.22)

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

Additionally, all producers were eligible for a bonus on top of their feed-in tariffs, based on the contribution of their power plant to the local community, economic growth,

employment, development of public services, and its general influence on the improvement of the quality of welfare. This bonus was allowed to amount up to an extra 15% on top of the feed-in tariff.

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

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

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

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

The applicable feed-in tariff or the RC for a particular producer is determined under and fixed in the power purchase agreement entered with the HROTE. Minimum price guarantees, when granted to the producer, do apply for a

fixed eligibility period of 14 years starting from the operational start of the electricity generation.

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

However, it has to be specifically noted that HROTE was obliged under the Tariff System adopted in May 2013 to enter into the power purchase agreements and to off-take the electricity produced at the applicable feed-in tariff or RC only for the first 15 MW of integrated and 10 MW on non-integrated solar power plants. Based on the Tariff System

applied from 1 January 2014, these caps were reduced to the maximum of 5 MW of integrated solar power plants, 2 MW of integrated solar power plants installed on the buildings owned by the State, local or self-government bodies, and 5 MW of non-integrated solar power plants.

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

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

Note: Feed-in tariffs are subject of annual corrections and for 2015 corrective coefficients range from 0,57-4,18 HRK/kWh.

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

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

Following ratification of the Kyoto Protocol, during the year 2007 and 2008, Croatia adopted national rules for the implementation

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- *HBOR loans.* In accordance with the provisions of the Environmental Protection Act 2013, the State is bound to support and finance projects aiming at environmental protection. The Croatian Bank for Reconstruction and Development (HBOR) is therefore obliged to support such projects. On this basis, the HBOR has launched the Loan Programme for Environmental Protection, Energy Efficiency and Renewable Energy, which supports investments in primary sources, such as initial funding, land, buildings, equipment and devices. The HBOR may cover up to 75% of the estimated investment value of the renewable energy project. Loans are granted by competent commercial banks in cooperation with the HBOR. The interest rate (currently 4% with possible reductions) is variable and mainly subject to the decision of the HBOR. The interest rate may also be agreed to be set at the three-month EURIBOR +2% per year.
- *Subsidies for promotion of biofuels.* Eligible producers of biofuel, as regulated by the Act on Biofuels for Transport 2009 and its implementing regulations, are allowed to apply for subsidies paid by HROTE as a cash incentive per each litre of biofuel produced and supplied to the Croatian market. The amount of subsidies is defined by the Government on an annual basis. For 2014 the following subsidies do apply: for biodiesel – HRK 1.7 (approx. EUR 0.22) and for bioethanol – HRK 0.23 (approx. EUR 0.03).

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

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

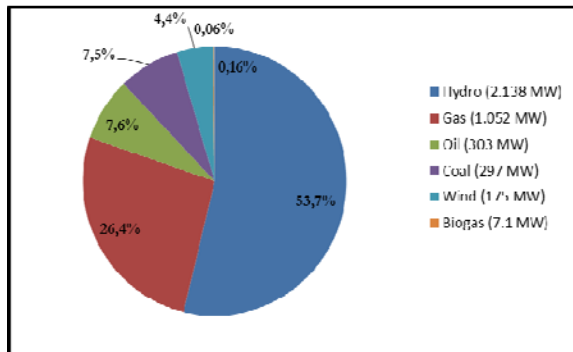
- *Biofuel quotas.* Each distributor that trades diesel or petrol for motor vehicles or vessels and is subject to the excise duty, except for small retailers, is obliged for placing biofuels on the market in compliance with the quota obligations under the terms and conditions of the Act on Biofuels for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

STATISTICS

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

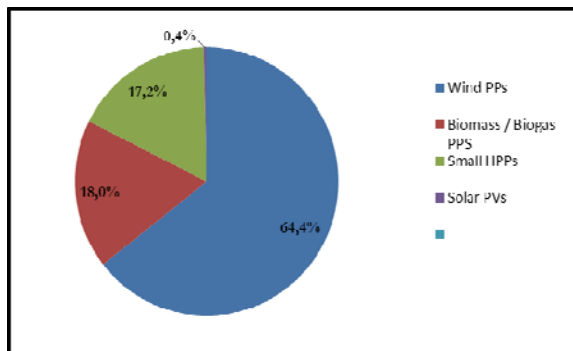
The total net installed capacity of the power plants in Croatia at the beginning of 2013 amounted up to 3,983 MW. Hydro power plants (HPP), including small HPPs and a pump-storage HPP, held up to 53.7%, thermal power plants (TPP) and combined heat and power plants (CHP) – up to 41.5%, and power plants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

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



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

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



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GENERAL

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

The renewable energy sector was a very fast-growing sector within the energy business. Due to frequent legislative changes and uncertainty in the sector, development of new renewable sources is rather scarce. Currently, transactions on the secondary market and refinancing of the existing power plants are the typical transactions. The Czech government has made a commitment at the EU level to achieve a share of 13% from renewable energy resources by the end of 2020. At the time of the most recent official statistics (year 2014), this share was 13.17%, and the total production of electricity from renewable sources was 9.17 TWh.

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

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

REGULATION

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

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

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

A new amendment to both Acts has been adopted and shall be effective as of 1 January 2016.

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

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

Depending on the size and type of renewable energy project, certain construction law and environmental law permits are required (such as environmental impact assessment, zoning permit, and construction permit). Further, an electricity generation license needs to be

acquired from ERO, with the exception of license-exempt generation stated under Section 6 below. Finally, construction of any energy project with capacity in excess of 100 kW requires authorization, issued by the Ministry of Industry and Trade (as of 1 January 2016, authorization will be required only for projects in excess of 1 MW).

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

In Czech Republic, conducting business in the energy sector generally requires a license issued by the ERO. Effective as of 1 January 2016, the production of electricity in power generation facilities with an installed capacity of no more than 10 kW is exempted from the license requirement, where the output of such facility is designated for the user’s own consumption, provided that no other power generation facility of a license holder is connected to the point of consumption.

Also, no license is required for trading, producing, distributing, or storing clean coking gas, gas from degasification wells, generator gas, biomethane, propane, butane, and mixtures thereof, unless these commodities are distributed via pipeline systems to which more than 50 points of consumption are connected. Finally, no license is required for the production of heat that is designated for the needs of one facility of one and the same user.

These rules do not differentiate between renewable energy sources and non-renewable energy sources.

INCENTIVES

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

No, the exemption from tax applicable to income generated from certain renewable

energy facilities was abolished as of 1 January 2011.

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

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

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

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

¹ The mandatory buyer is an electricity trader determined by law or selected by the Ministry of Industry and Trade. Unless and until a decision on this selection has been handed down, the electricity trader for a given region is the supplier of the last resort. For the years 2013, 2014, and 2015, and depending on the region, this would be E.ON Energie, a.s., ČEZ Prodej, s.r.o., or Pražská energetika, a.s., respectively.

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

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

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

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

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

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

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

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

No.

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

None.

STATISTICS

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

The percentage of electricity generated based on each type of renewable energy source is as follows (as of the end of 2014):

Biomass	2.88%
Biogas	3.69%
Water	2.74%
Wind	0.68%
Solar	3.05%
Sewage	0.13%

The data is available at: http://www.eru.cz/documents/10540/462820/Rocni_zprava_provozu_ES_2014.pdf/933fc41a-ad79-4282-8d0f-01eb25a63812

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ESTONIA



Elo Tamm

COBALT LAW OFFICE

GENERAL

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

The share of renewable energy in total electricity consumption was 14,8% in 2014, which increased by 2,2% as compared with 2013 based on Estonian transmission system operator Elering data. The share of renewable energy in total energy consumption in 2013 decreased by 0,2% as compared to 2012 (from 25,8% to 25,6%) based on Eurostat data. The Government has declared that the share of renewable energy sources in total energy consumption is aimed to be 25% in 2020 and the share of renewable energy in total electricity consumption would be 17,6% by 2020. Estonia can be considered a rather advanced country in regard to the share of renewable energy sources in the total energy consumption. With its statistics, Estonia is placed 6th most renewable energy prone country among EU member states based on Eurostat data.

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

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

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

It is to be expected that the newly-formed government of Estonia will take steps to make some amendments in the Electricity Market Act in regard to renewable energy support. Namely, there is political will to make the amount of renewable energy support depend on the current market price of electricity. European Commission has already accepted such scheme as one in accordance with state aid rules of EU. It is probable that the new parliament will soon commence legislative proceedings to adopt the respective laws.

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 at the expense of fossil fuel.

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

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

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

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

REGULATION

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

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

- Electricity Market Act;
- Grid Code, adopted by the Government of the Republic on the basis of Electricity Market Act;
- Liquid Fuel Act;

- Alcohol, Tobacco, Fuel and Electricity Excise Duty Act.

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

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

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

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

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

The main license needed for renewable, as well as conventional energy generation is the license for generation of electricity. The license is not required for generation of electricity if the producer uses generating installations whose total net capacity falls below 100 kW, and where the transmission network operator generates electricity in an emergency reserve power station. Please be aware that all wind power plants are required to be connected to the transmission grid only, and thus wind energy plants need to follow the requirement of the transmission system operator to get the grid connection.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

A license is not required for the generation of electricity if the producer uses generating installations whose total net capacity falls below 100 kW, and where the transmission network operator generates electricity in an emergency reserve power station.

INCENTIVES

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

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

8. 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.

9. 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 get support for the sale of renewable energy. A reservation applies in relation to wind power, whereas renewable energy support is paid for electricity generated from wind until 600GWh of wind energy has been produced each respective calendar year. If the volume of wind energy generated in such calendar year exceeds

600 GWh, then all wind power generators will lose the right for the support. According to public sources, approximately 450GWh wind energy was produced in Estonia in 2012.

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

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

From 1 July 2014, the circle of electricity producers eligible for getting renewable energy support was narrowed. Namely, before 1 July 2014, a producer was entitled to receive support from the transmission network operator for electricity if it was generated from a renewable energy source. Thus, no restrictions were stipulated. But as of now, a producer is entitled to a support if the electricity is generated from a renewable energy source using a generating installation whose net capacity does not exceed 100 MW.

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

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

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

No, renewable energy based power plants do not have a priority for connection to the grid. The only minor nuance that can be brought out is that approval of the transmission network operator is not required for connecting an installation using renewable energy sources for production, the capacity of which is less than 15 kW.

12. 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.

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

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

STATISTICS

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

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

	2009	2010	2011	2012	2013
Electricity generation from all sources	761,9	834,9	802,3	836,4	832,9
Renewable electricity					
Hydro	2,1	1,9	1,7	2,8	2,8
Wind	17,5	21,2	29,6	43,0	48,6
Solar	0,0	0,0	0,0	0,0	0,0
Solid biofuels	26,3	62,8	65,9	84,7	55,5
All other renewables	0,6	0,9	1,3	1,4	1,7
Total (RES-E numerator)	46,5	86,8	98,5	131,9	108,5
RES [%]	23,01%	24,59%	25,52%	25,81%	25,62%

(Source: Eurostat. <http://ec.europa.eu/eurostat/web/energy/data/shares>)

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GENERAL

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

Finland consumes proportionally more renewable energy than most countries in the world. According to 2014 statistics, renewable energy sources provided approximately 32 percent of Finland's total energy consumption and accounted for 39 percent of the overall electricity generation. Based on a breakdown of the total energy consumption by source, the main renewable energy sources are wood-based fuels (25 percent) and hydro and wind power (4.3 percent). As regards electricity production, hydropower (20.2 percent) and biomass (16.9 percent) contribute the largest proportions.¹⁴

In 2014, the total energy consumption of Finland decreased by two percent compared to previous year as a result of the diminished consumption of energy for heating.

The net imports of electricity increased due to the availability of hydropower in the Nordic Countries, which resulted in decrease in the consumption of fossil fuels and wood-based fuels in Finland. The share of renewable energy in Finland's total energy consumption increased by one percent.¹⁵

Finnish energy policy aims to execute the goals of European Union, inter alia the Third Energy Package, among other international obligations. Generally, the national energy policy is in line with the European Union Directive on the Promotion of the Use of Energy from Renewable Sources 2009/28/EC, as amended (the "RES Directive"). The Finnish Government has promoted and plans to keep promoting the production and consumption of renewable energy with various support schemes in order to reach the national target that requires Finland to increase the use of renewable energy at least to 38 percent of its energy consumption by 2020.¹⁶ According to

¹⁴ See Official Statistics of Finland: Energy supply and consumption 2014, 4th quarter, preliminary statistics available at: http://stat.fi/til/ebk/2014/04/ebk_2014_04_2015-03-23_fi.pdf and http://stat.fi/til/ebk/2014/04/ebk_2014_04_2015-03-23_tie_001_en.html as well as <http://energia.fi/energia-ja-ymparisto/sabkontuutanto>

¹⁵ See Official Statistics of Finland: Energy supply and consumption 2014, 4th quarter, preliminary statistics available at: http://stat.fi/til/ebk/2014/04/ebk_2014_04_2015-03-23_fi.pdf and http://stat.fi/til/ebk/2014/04/ebk_2014_04_2015-03-23_tie_001_en.html

¹⁶ See Directive 2009/28/EC of The European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, Official Journal of the European Union, 5 June 2009.

Energy and Climate Roadmap 2050, biomass is expected to be a central source of renewable energy.¹⁷

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

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

Moreover, Finland considers the energy sources specified in the RES Directive to be renewable.¹⁸ According to the RES Directive, the term renewable energy refers to energy that is produced from renewable non-fossil sources such as wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogas. In Finland, peat is considered a slowly renewable energy source.¹⁹

¹⁷ Energy and Climate Roadmap 2050 is a report of the parliamentary committee on energy and climate issues 16 October, 2014 available at: http://www.tem.fi/files/41483/Energy_and_Climate_Roadmap_2050.pdf. See also the government bill 107/2012 that amended the Production Subsidy Act and the Production Subsidy Decree, these amendments which aim to promote the competitiveness of forestry projects in electricity production through the premium for forestry projects came into effect on January 1, 2013.

¹⁸ Ministry of Employment and the Economy (1096/08.10.02/2012), implementing guidelines of RES Directive.

¹⁹ See National Strategy for Implementing Kyoto Protocol, Government Report to Parliament, 25 November 2005 and Long-term Climate and Energy Strategy, Government Report to Parliament, 6 November 2008.

REGULATION

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

The renewable energy sector forms a significant part of the current electricity market. As a preliminary matter regarding the energy sector, it is important to note that the Nordic countries make up a single electricity market in which the physical electricity trading is organized through the Nordic electricity exchange Nord Pool Spot AS (“Nord Pool”). In addition to Nord Pool’s spot market, electricity is traded through over-the-counter transactions. Most of the electricity consumed in Finland is transmitted through the national grid. Fingrid Oyj is the sole national transmission system operator that owns and operates both the national grid and all significant borders. Regional networks and distribution networks in Finland are local monopolies mainly operated by various electricity companies. In addition to the general rules applicable to the local electricity operators and market, the renewable energy sector is regulated by various national laws and European Union legislation which aim to execute the policy goals of the regulators through taxation, environmental protection and funding cleaner technologies.

Principal laws and regulations are as follows:

- The Electricity Market Act (588/2013) (the “Electricity Market Act”) which aims to provide the preconditions for efficient, secure and environmentally sustainable electricity market.
- The Amendment of the Natural Gas Act (589/2013 which also applies to gas produced from renewable energy sources if such gas can be delivered and transported in the existing pipelines.

- The Act on Supervision of the Electricity and Natural Gas Markets (590/2013) which regulates the general goals, duties and jurisdiction of the Energy Authority.²⁰
 - The Production Subsidy Act which establishes the feed-in tariff promoting the construction of wind farms, biogas and wood fuel power plants as well as wood chip power plants.²¹
 - The Decree on Production Subsidy for Electricity Produced from Renewable Energy Sources (1397/2010) (the “Production Subsidy Decree”).
 - The Act on the Allocation of State Grants (688/2001, as amended) which provides the legal basis of the Government Decree on General Rules for the Allocation of Subsidies for Energy (1063/2012).
 - The Government Decree on General Rules for the Allocation of Subsidies for Energy (1063/2012) which establishes provisions on the allocation of financial aid for investment and research projects that also promote technologies for the use of renewable energy.
 - The Act on Promoting the Use of Biofuels in Transport (446/2007, as amended) which promotes the use of biofuels in transport and sets an obligation for transport fuel distributors to distribute biofuels for consumption.²²
 - The Emission Trading Act (2011/311, as amended) which implemented the Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading (excluding the emission trading regarding the aviation) and amending Council Directive 96/61/EC regarding integrated pollution prevention and control (“IPPC”).²³
 - The Act on Energy Efficiency (1429/2014) which implemented the Directive 2012/27/EC on energy efficiency.
 - The Act on Climate (609/2015) (the “Climate Act”) which sets the framework for Finnish climate change policy planning and execution and aims to ensure that European Union greenhouse gas reduction goals will be reached.
 - Guidelines for Trans-European Energy Infrastructure, according to which Finland is one of the member states included to the Baltic energy market interconnection plan for electricity and gas under regulation No 347/2013 that aims to increase the integration of renewable energy in the region.
 - Draft Government Decree on the Noise Level of Wind Farms.²⁴
- 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

²⁰ See also Act on Energy Authority (870/2013).

²¹ See Explanatory Memorandum (124/2011) and the Government Bill 107/2012 and the Government Bill 15/2014. See also draft Government Bill regarding amendments to the feed-in tariff. http://www.tem.fi/files/43356/HE_TuotantotukimuutosL_luonn_17062015.pdf.

²² See also Act on Biofuels and Bioliquids (393/2013).

²³ See Act on Aviation Emission Trading (311/2011).

²⁴ The Decree on the Noise Level of Wind Power is drafted by the Ministry of Environment in November 2014 but the decree is not approved yet. The draft of the decree is available at: <http://www.ymp.fi/download/noname/%7B0F7C591B-24D2-492F-AE44-EF0716BF420C%7D/105035>.

while the Ministry of Employment and the Economy participates in such preparation of energy taxation in order to ensure that taxation supports energy and climate policy's strategic goals as efficiently as possible. The Energy Department's Director-General serves as the main authority in the field of energy.²⁵ The Energy Authority grants various permits for energy projects and is in charge of the feed-in tariff system.²⁶ It also enhances and monitors the activities of the electricity and natural gas markets as well as generally promotes the reduction of emissions, energy efficiency and the use of renewable energy.²⁷

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

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

- Construction permit(s) for the turbines and/or other facilities.
- For larger projects an environmental impact assessment ("EIA") must be conducted and approved by the relevant authority. The main rules regarding the EIA can be found in the Environmental Impact Assessment Act (1994/468) and Environmental Impact Assessment Decree (713/2006).

- The need of an environmental permit for certain projects is regulated in the Environmental Protection Act (527/2014, as amended) and the Environmental Protection Decree (713/2014).
- The permit required by the Water Act (2011/587, as amended) should be considered when developing off-shore projects.
- Some construction projects and installation may compromise aviation security. For example, under the Aviation Act (864/2014) turbines higher than 30 meters require an aviation safety permit.
- Depending on the technical layout of a project, Energy Authority's permit under the Electricity Market Act may be required for the construction of power lines exceeding 110 kV. Also redemption of the land might be necessary when placing cables underground.
- A statement from the Finnish Defense Forces confirming that project will not disturb radars is necessary for most projects.²⁸

6. Is there a category of "license-exempt generation"? If so, does it cover some types of renewable energy based generation?

In addition to small scale production of electricity, there is generally no license-exemption for renewable energy generation in Finland. The necessary permits vary based on the scale and type of the project.

²⁵ Ministry of Employment and the Economy, available at: <http://www.tem.fi/index.php?l=en&s=2630>

²⁶ Energy Authority, available at: <http://www.energiavirasto.fi/en/web/energy-authority/energy-authority>.

²⁷ See Government Bill 124/2013 available at: <http://www.finlex.fi/fi/esitykset/be/2013/20130124>.

²⁸ The Act on Wind Power Compensation Areas (490/2013) came in effect on 1 July 2013 but its applicability is limited to Bothnian Bay's area.

INCENTIVES

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

Finland promotes the use of renewable energy through various tax advantages. In 2011, energy taxation reform changed the former excise duties.²⁹ The current excise duties for both electricity and liquid fuels are based on energy content, carbon dioxide emissions and stockpile fee.

The goal as regards transport fuels was to guide the consumption towards the use of the most carbon dioxide-efficient biofuels.³⁰ In addition, the following liquid fuels remain exempt from excise duty and strategic stockpile fee:³¹

- fuels entered in the reserve stock of the Finnish Government;
- fuels used as an energy source in an oil refining process;
- fuels used as raw material or auxiliary in industrial production, or in direct first use in the production of goods;
- fuels used in vessel traffic other than private leisure boating;
- fuels used for electricity generation;

²⁹ The reform changed, inter alia, The Act on Excise Duty on Liquid Fuels (1472/1994, as amended) and the Act on Excise Duty on Electricity and Fuels (1260/1996, as amended).

³⁰ Government Bill 147/2010 on Amending Energy Taxation, available in Finnish at "<http://www.finlex.fi/fi/esitykset/be/2010/20100147>" p. 23.

³¹ See Act on Excise Tax on Electricity and Certain Fuels (1260/1996, as amended) and Customer Bulletin No 21, National Board of Customs, 2015 available at: "http://www.tulli.fi/fi/suomen_tulli/julkaisut_ja_esitteet/asiakasohjeet_valmisteverotus/tiedosto_t/021.pdf".

- fuels used in aviation other than private leisure flights; and
- liquefied petroleum gas (exempt until January 1, 2016).³²

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

- production of electricity with a generator not exceeding 100 kVA; and
- production of electricity with a generator exceeding 100 kVA but not exceeding 800 000 kVA will be subject to registration obligation, however, the zero tax rate will be applied to the producer.³³

There are further exemptions available for producers, for example, if the electricity is transmitted between electricity networks, delivered outside Finland or used by the power plant itself. Furthermore, tax refunds are paid for energy intensive industries³⁴ and agriculture.³⁵

³² This limitation is regulated in The Amendment to the Act on Excise Duty on Liquid Fuels (378/2015) available at: <http://www.finlex.fi/fi/laki/alkup/2015/20150378>.

³³ See The Amendment to the Act on Excise Tax on Electricity and Certain Fuels (501/2015) available at: <https://finlex.fi/fi/laki/alkup/2015/20150501>. Note that the transition period lasts from May 1, 2015 to December 31, 2015.

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

³⁵ Act on Refund of Excise Tax Levied on Certain Energy Products Used in Agriculture (603/2006, as amended) and Government Bill (147/2010) on Amending Energy Taxation, available in Finnish at: <http://www.finlex.fi/fi/esitykset/be/2010/20100147> and Decree 309/2003 of the Finnish Ministry of Trade and Industry.

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

Although some countries have purchase guarantees for electricity produced from renewable sources, Finland does not apply such guarantee system. Under the Electricity Market Act, the licensed operators are obligated to connect all power plants in their area of operation to the grid when requested and against a reasonable compensation if such power plant fulfills the applicable technical requirements. The connection terms and technical requirements must be explicit, impartial and non-discriminatory as well as take into account the security of supply and the efficiency of the electricity system.³⁶

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

Generally, production subsidies are paid to companies that generate energy from renewable sources pursuant to the Production Subsidy Act. Producers of electricity whose plants generate energy from wood chip, wind power, biogas or wood-based fuels are accepted to the feed-in tariff system upon fulfillment of certain criteria and are paid feed-in tariff, the amount of which varies depending on the market price of electricity or/and the price of emission rights.³⁷ Mainly, the feed-in tariff system compensates for production costs by guaranteeing a premium for the producer for a limited time, as long as the energy project is eligible to receive the state aid.

According to the Production Subsidy Act, wind power projects may be accepted to the feed-in tariff scheme until the combined nominal capacity of all accepted projects exceeds 2,500 MVA.³⁸ However, after the amendments of the Production Subsidy Act became in effect on June 30, 2014, electricity producers have had the possibility to apply for a decision confirming their share in the total capacity quota for wind power. Further, the combined nominal capacity of accepted wind farms, accepted applications and filed applications for quota reservations exceeded the 2,500 MVA limit on June 2, 2015. According to the current draft of the Government Bill that proposes amendments to the Production Subsidy Act, only the wind farms that have applied for the quota decision before nominal capacity was exceeded will be accepted to the feed-in tariff.³⁹

Under the tariff system, power projects will get a guaranteed price of EUR 83.5 per MWh for a period of 12 years.⁴⁰ If the three-month average market price of electricity is below the guaranteed price, the project will be paid the difference as a premium feed-in tariff. In order to be included in the tariff system, a producer must provide the necessary documentation to the Energy Authority.

The Finnish feed-in tariff is paid out of the government budget. Thus, the feed-in tariff constitutes a state aid and limitations on state aid such as the maximum permitted amount of state aid, must be considered. There are also

³⁶ § 20, Electricity Market Act.

³⁷ § 6, Production Subsidy Act. Note that currently wind power projects may be accepted into the feed-in tariff scheme until the combined nominal capacity of all accepted projects exceeds 2,500 MVA.

³⁸ Following the parliamentary elections on April 2015, the new Government has announced that it will propose a limitation to the feed-in tariff that would decrease the quota from 2500 MVA to 2000 MVA as soon as possible.

³⁹ See the Draft Government Bill amending the Production Subsidy Act available at: http://www.tem.fi/files/43356/HE_TuotantotukimuutosL_Juonn_17062015.pdf.

⁴⁰ § 25, Production Subsidy Act and the Production Subsidy Degree. Note that the guaranteed price system is in fact degressive as the aid level does not include any automatic inflation adjustment.

constitutional considerations. In order to grant the guaranteed electricity price on the basis of the feed-in tariff, a turbine may not benefit from any other state aid.⁴¹ European Union aids, such as the aids that are granted based on the Seventh Framework Program, are not an obstacle for joining the feed-in tariff.⁴² However, even though such aid does not qualify as state aid by definition, the combined amount of aid will be calculated by Ministry of Employment and the Economy, which can limit the total amount of aid in these situations

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

Finland ratified the Kyoto Protocol in 2002.⁴³ During the Kyoto commitment period 2008–2012 Finland was collectively committed to bring the emissions down to 8 percent below the 1990 level, based on which Finland had 100 percent quantified national reduction commitment under the burden sharing agreement between the European Union member states. During the second Kyoto commitment period 2013–2020, Finland is committed as a part of a joint commitment of European Union to a 20 percent reduction in greenhouse gas emissions from 1990 level.⁴⁴

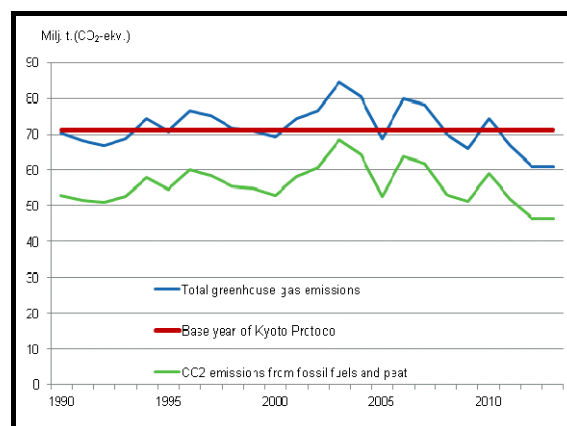
⁴¹ See § 20, Production Subsidy Act and the special prerequisites for acceptance to the feed-in tariff in § 9 – § 11 and Government Bill 15/2014 available at: <http://www.finlex.fi/fi/esitykset/be/2014/20140015>.

⁴² Further information regarding the Seventh Framework Program can be found at: http://europa.eu/legislation_summaries/energy/european_energy_policy/i23022_en.htm.

⁴³ The United Nations Framework Convention on Climate Change was ratified in 1994.

⁴⁴ The national targets, covering the period 2013–2020, are differentiated according to Member States' relative wealth. See the climate and energy package of the EU available at: http://ec.europa.eu/clima/policies/package/index_en.htm.

Finland's greenhouse gas emissions 1990–2013⁴⁵



The Emission Trading Act established the Finnish scheme for greenhouse gas emission allowance trading in Finland as well as implemented the amendment of the IPPC directive.⁴⁶ In addition, the Climate Act which came in effect on June 1, 2015 sets a target to bring national average annual emissions down to 80 percent below the 1990 level by year 2050.⁴⁷

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

There is guaranteed access to the grid for all electricity users and electricity-producing plants, including renewable energy generators. The grid operators are required to grant connection to the grid according to non-discriminatory criteria.⁴⁸ Thus, electricity generated from renewable sources is not given priority.

⁴⁵ Official Statistics of Finland available at: http://tilastokeskus.fi/til/ebk/2013/04/ebk_2013_04_2014-03-24_en.pdf.

⁴⁶ There is also an emission trading regime for aviation which is regulated under Aviation Emission Trading Act (34/2010).

⁴⁷ See § 6, the Climate Act and Government Bill 82/2014 available at: <http://www.finlex.fi/fi/esitykset/be/2014/20140082>.

⁴⁸ See § 20, Electricity Market Act.

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

In addition to the general incentives for renewable energy projects, there are no specific local incentives for construction materials and equipment used in the construction of renewable energy based power plants. Generally, Finland aims for energy efficiency of construction.

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

Discretionary investment subsidies are available under the State Aid Act (2001/688). The aid may be provided in the form of financing for certain operations or projects.⁴⁹ Generally, the subsidies provided may not exceed the state aid limits under the Finnish or European Union regulation.

As an exception, the pilot off-shore wind power projects can benefit from feed-in tariff even if such project would have been granted state aid for construction.⁵⁰ The amendment of the Production Subsidy Act came in effect on December 1, 2014,⁵¹ after which EUR 20 million has been reserved for off-shore wind power. The state aid must be approved by the EU commission.⁵²

⁴⁹ See the Government Decree on General Rules for the Allocation of Subsidies for Energy (1063/2012).

⁵⁰ Government Bill 15/2014 available at <http://www.finlex.fi/fi/esitykset/be/2014/20140015>

⁵¹ The Decree Regarding the Entry into Force of Amendments to the Act on Production Subsidies for Electricity Produced from Renewable Energy Sources (944/2014) available at: <http://www.finlex.fi/fi/laki/alkup/2014/20140944>.

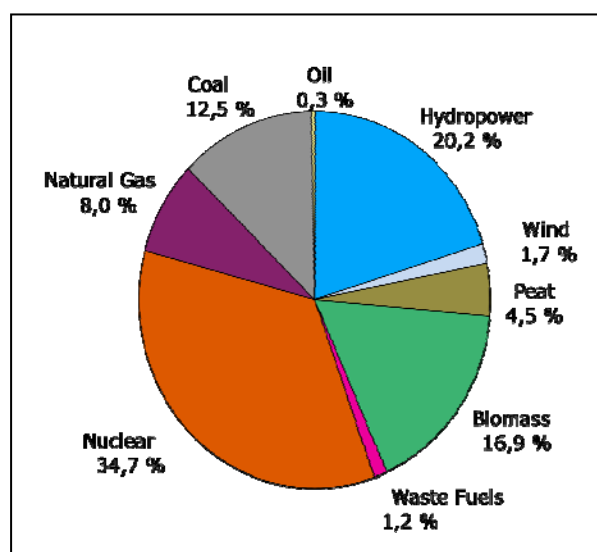
⁵² See the Ministry of Employment and Economy available at: http://www.tem.fi/en/energy/energy_support/support_for_demonstration_of_offshore_wind_power

STATISTICS

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

In 2014, the total electricity production in Finland was 65.4 TWh, which was 4.1 percent less than in 2013. Finland produced 78.4 percent of the electricity consumed and imported 21.6 percent⁵³. The following is a breakdown of the main electricity sources: 34.7 percent nuclear power, 20.2 percent hydropower, 16.9 percent biomass, 12.5 percent coal, 8.0 percent natural gas, 4.5 percent peat, 1.2 percent waste, 1.7 percent wind and 0.3 percent oil. Renewable energy accounted for 39 percent of the electricity supply.⁵⁴

Finnish Electricity Production 2014.⁵⁵



⁵³ The share of net imports.

⁵⁴ Original statistics of Finnish Energy Industries available at: <http://energia.fi/energia-ja-ymparisto/sabkontuotanto> and <http://energia.fi/kalvosarjat/energiavuosi-2014-sabko>.

⁵⁵ Original diagram of Finnish Energy Industries available at: <http://energia.fi/energia-ja-ymparisto/sabkontuotanto>.

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FRANCE



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GENERAL

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

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

However, in the past few years, France has taken several measures, on one hand, to decrease the share of nuclear energy in the French total gross electricity consumption and, on the other hand, to develop and promote the generation of electricity from renewable sources. France has put in place a favorable legal framework to attract interest from a large number of domestic and international renewable energy players, in particular by urging the parliament to vote laws in order to support the production of electricity from wind installations (e.g., law No. 2013-312 dated 15 April 2013 related to the transition to a low carbon energy system and containing various provisions concerning water pricing and wind turbines production¹).

¹ The French Constitutional Council has censured articles of this law proposing a *bonus/malus* tax on private citizens for energy consumption (e.g., homes that reduce their energy consumption would pay

As a result, electricity from renewable sources accounted in 2013 for 14.2% of the French total gross electricity consumption (as compared to 16.6% in 2012, 16.4% in 2011, and 14.9% in 2010)².

In 2013, the primary production of renewable energy represented 25,273 million tonnes of oil equivalent (“Mtep”) (as compared to 15,025 Mtep in 2002)³, the share of renewable energy sources being as follows:

lower rates for their energy usage, while homes that did not would be fiscally penalized), on the ground that the law did not uphold the principle of equality because the proposed tax would have only affected private citizens (Decision No. 2013-66 dated 11 April 2013).

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

³ Source: French Ministry of Ecology, Sustainable Development and Energy. Primary production of biomass, hydropower, geothermal energy, wind and solar energy are included in renewable energies.

- Hydro power: 24.5% (6,197 Mtep);
- Wind power: 5.43% (1,373 Mtep);
- Solar thermal: 0.57% (0,145 Mtep);
- Solar photovoltaic: 1.7% (0,438 Mtep);
- Tide, wave and ocean: 0.14% (0,036 Mtep);
- Solid biofuels: 41.81% (10,569 Mtep);
- Biogas: 1.8% (0,465 Mtep);
- Municipal waste: 4.9% (1,246 Mtep);
- Biogasoline: 9.6% (2,437 Mtep); and
- Biodiesels: 9.59% (2,423 Mtep).

The French Government has committed to continue to increase the annual production of renewable energy by 20 Mtep in order to raise their share in final energy consumption to at least 23% by 2020, the forecasted total production being at least 32 Mtep⁴. This objective corresponds to the target of gross electricity consumption from renewable sources assigned to France under the European Union Directive 2009/28/EC dated 28 April 2009 (e.g., Directive said the third energy package), which was partially transposed into French law by the order No. 2011-504 dated 9 May 2011.

Furthermore, to bring the level of renewable energy up to 23% of the overall energy consumed in France by 2020, French government wishes to boost the wind energy sector with an emphasis on offshore wind. In this perspective, two rounds of offshore wind power tenders have been launched by the

French Department of Ecology for about 6 offshore wind farms for a total installed capacity of 3,000 MW⁵.

At the same time, a national debate on energy transition was launched in November 2012 and the energy transition law is currently being debated in the French Parliament. The National Assembly adopted the law on second reading on May 26, 2015 according to which the country's reliance on nuclear energy should be reduced to 50% by 2025. The aforementioned law should now be examined by the Senate in the following weeks.

Finally, it has notably to be specified that the United Nations Climate Change Conference (also called "COP21" or "CMP11") will be held in Paris from 30 November to 11 December 2015 between the United Nations countries. The overarching goal of this conference is to reduce greenhouse gas emissions to limit the global temperature increase to 2 degrees Celsius above pre-industrial levels.

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

Pursuant to article 29 of the law No. 2005-781 dated 13 July 2005⁶ (as amended), renewable energy sources cover wind energy, solar energy, geothermal energy, aerothermy energy,

⁵ A first round of offshore wind power tenders, launched on 5 July 2011, resulted in 2 gigawatts of bids going to a consortium led by EDF, wind turbine manufacturer Alstom and Denmark's DONG Energy (480 MW Saint Nazaire, 450 MW Courseulles-sur-Mer, 498 MW Fécamps) and to another consortium led by Iberdrola (500 MW Saint Briec).

A second round of offshore wind power tenders, launched on 16 March 2013, resulted in 1 gigawatt of bids going to a consortium led by GDF Suez and Areva (496 MW Tréport, 496 MW Iles d'Yeu and Noirmoutier).

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

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

hydro energy, energy generated from biomass, waste water treatment plants and biogas. Article 29 of said law further defines biomass as the biodegradable fraction of products, wastes and residues issued from agriculture, including vegetal and animal substances from earth and sea, silviculture and related industry and from the biodegradable fraction of industrial and household wastes.

REGULATION

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

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

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

The French Electricity Act contains measures which support the development of generation of electricity from renewable sources. In particular, article 10 of the French Electricity Act, which was repealed and is now codified in articles L.314-1 to L.314-13 of the French energy code, imposes on State-owned and historical operator, *Electricité de France* (“EDF”) and non-nationalized electricity distributors, an obligation to purchase at a preferential tariff electricity generated in France from renewable sources (please see sections 7 and 8 below). The French authorities have enacted various secondary legislation and set out the conditions under which a renewable energy generator may benefit from the power purchase obligations provided for by the French Electricity Act. In particular, decree No. 2001-410 dated 10 May 2001 (as amended)

lists certain requirements which need to be satisfied by a generator (including renewable energy generator) in order to benefit from the power purchase obligation.

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

Sector	Order	Duration of the contracts	Feed-in tariffs
Hydro	Order dated 1 March 2007	20 years	6.07 c€/kWh in addition to a bonus between EUR0.5 c€/kWh and EUR 2,5 c€/kWh for small power plants, as well as a bonus of up to 1,68 c€/kWh for electricity produced during the winter 15 c€/kWh for ocean hydraulic energy (wave energy, tidal energy and other hydrokinetic energy sources).
Wind	Order dated 1 July 2014	15 years	8.2 c€/kWh during ten years then between 2,8 and 8,2 c€/kWh for five years
Solar	Order dated 4 March 2011 (It being specified that the tariffs are reevaluate every trimester)	Applicable for 20 years	For the period of 1 April 2015 to 30 June 2015 Roof-integrated photovoltaic for 0-9kW: 26,17 c€/kWh Simplified Roof-integrated photovoltaic for 0-36kW: 13,95 c€/kWh and for 36-100 kWh : 13,25 c€/kWh For any installation: 6,62 c€/kWh.

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

The principal regulatory body in the renewable energy sector is the *Commission de régulation de l'énergie* (the “CRE”). The CRE is an independent administrative body governed by the French Electricity Act and the French energy code. Article 28 of the French Electricity Act⁷ defines in general terms the missions and powers of the CRE which are to “assist in ensuring the proper operation of the electricity and natural gas markets to benefit the final customer. In particular, CRE ensures that the conditions of access to electricity and natural gas transmission and distribution networks do not impede the development of competition. It monitors, for the electricity and natural gas sectors, all transactions made between suppliers, traders and producers, all transactions made on the organized markets and cross-border trading”⁸. New prerogatives regarding price fixing and control over access to nuclear electricity were granted to the CRE by law No. 2010-1488 dated 7 December 2010.

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

⁷ Repealed by the order No. 2011-504 dated 9 May 2011 and codified in article L.131-1 of the Energy code

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

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

5.1. Town planning authorizations

If an installation corresponds to a new construction, its implementation will be subjected to the issuance of a building permit. Such is the case for a cogeneration thermal plant, a dam, a hydroelectric plant and wind turbines with a height exceeding 12 meters⁹, to name a few.

Outside preservation areas and classified sites, ground-based solar plants with a peak power below 3 kW and which have a height exceeding 1.80 meters as well as ground-based solar plants which have a peak power equal to or greater than 3 kW and below or equal to 250 kW, regardless of their height are subject to a preliminary declaration¹⁰.

With respect to roof-mounted solar power plants, when they are part of a project to build new structures, the building permit application will include the photovoltaic installation and no other construction authorization needs to be filed. However, if the photovoltaic installation is part of the roof of an existing building, a preliminary declaration must be submitted to the appropriate city. If the building is located in a preservation area / classified site, the opinion of an architect from the “Bâtiments de France” should be requested too.

5.2. Environmental authorizations

The environmental impact of renewable energy projects has to be taken into account. For instance, solar plants may have an impact on

⁹ There are no specific steps to be undertaken regarding wind mills which do not exceed 12 meters in height, unless these wind mills are to be erected within specific locations (preservation area and classified sites) pursuant to article R.421-2 of the town planning Code.

¹⁰ Article R.421-9 of the town planning Code

water consumption or on landscape. As a result such projects, depending on their location, peak power and costs of construction may be subject to environmental impact assessments and a public enquiry process.

In addition, specific environmental authorizations may be required. For instance, with respect to wind farms, they are now to be considered as classified facilities and if the wind farm includes wind mill with a height exceeding 50 meters, the operator will have to obtain an authorization to operate classified facilities from the appropriate prefect¹¹.

5.3. Regulatory aspects

A license to operate delivered by the French Minister of Energy is required to produce electricity. As example, (i) wind power installations with a power installed capacity greater than 30 MW and (ii) solar power installations with a power installed capacity greater than to 12 MW¹² do not require an operating license.

For the calculation of the aforementioned thresholds, the installed power capacity of all the installations connected to the same delivery point into the public electricity network has to be added.

Moreover, in order to be connected to the grid, a generator must request ERDF (or RTE in high voltage cases) to issue a technical and financial proposal (PTF) setting out the technical and financial conditions under which the facility of the generator will be connected to the grid. 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 states an estimated waiting time for the execution of a connection agreement as well as an estimated length of the connection works.

Finally, in order for a producer to sell electricity, it must send an application to the Prefect ("*Préfet*") to obtain a certificate request for obligatory sale of electricity ("*CODOA*"), whose acquisition requirements are fixed by the decree No. 2001-410 of 10 May 2001 relating to the purchase conditions for electricity produced by producers benefiting from the obligatory sale.

The town planning, environmental and regulatory authorizations are the general frameworks pertaining to the right to operate sources of renewable energy.

However, specific frameworks exist depending on the particular category of renewable energy and the operating rights consequently depend either on ad hoc regulations. They are often more demanding and technical in comparison with the standard procedure.

For instance, in geothermic matters, mining legislations will have to be taken into account, as well as environmental legislation.

The implementation of a renewable energy project being complicated and time consuming. The French government has stated its willingness to simplify the procedures for obtaining administrative authorizations in general and, in particular, permits, prior declarations and/or licenses required for renewable energy projects.

In this perspective and in accordance with the provision of article 14 of law No. 2014-1 dated 2 January 2014, the French Government has enacted the order (*ordonnance*)

¹¹ Authorization to operate classified facilities can only be issued if the wind farm is at least 500 meters from residential buildings and lands defined for residential construction (article L.553-1 of the Environmental Code).

¹² Pursuant to the decree No. 2000-877 of 7 September 2000 relating to the operating authorization of electricity producing installations.

No. 2014-355 dated 20 March 2014 related to the experimentation of a single authorization with regard to facilities classified for environmental protection (“*autorisation unique en matière d’autorisations classées pour la protection de l’environnement*”).

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

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

Some renewable energy projects are not subject to any license depending on their characteristics in terms of peak power and height.

For instance, with respect to ground-based solar plants which have a peak power below 3 kW and which have a maximum height not exceeding 1.80 meters, they do not require any building permit or preliminary declaration unless they are located in preservation areas or classified sites¹³.

Wind power installations with a power installed capacity less than or equal to 30 MW and solar power installations with a power

installed capacity less than or equal to 12 MW do not require an operating license.

There are no specific steps to be undertaken regarding wind mills which do not exceed 12 meters in height, unless these wind mills are to be erected within specific locations (preservation area and classified sites).

INCENTIVES

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

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

- article 39 AB of the French Tax Code (the “FTC”) permits an exceptional and accelerated depreciation over a twelve-month period for equipment designed to save energy or intended to produce renewable energy. This mechanism of depreciation allows companies which invest in renewable energy to reduce their taxable profit by the amount of the investment, which equates to a 33^{1/3}% subsidy. However, to date, this incentive benefits only equipment acquired or manufactured before 1 January 2011; and
- article 1382-12 of the FTC grants an exemption of land tax on installations which produce solar energy, including solar panels.

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

¹³ Article R.421-2 of the town planning Code

on income derived from the sale of electricity produced from renewable energy).

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

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

Firstly, article L.311-10 of the French energy code, provides that when the production capacities do not meet the objectives of the multiannual investment programming, especially those pertaining to techniques of production and geographical localization of the installations, the competent administrative authority can resort to call for tenders, on the understanding that EDF and non-nationalized electricity distributors are obliged to enter into a power purchase contract with the successful bidder.

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

Secondly, article 10 of the French Electricity Act, codified for this provision in articles L.314-1 to L.314-13 of the French energy

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

The list set out in article 10 of the French Electricity Act is a non-exhaustive list. As a consequence, the following facilities are also concerned by the purchase guarantee: installations which utilize household waste or assimilated substances as mentioned at articles L.2224-12 and L.2224-14 of the French general local authorities code (*code general des collectivités territoriales*) and those who aim to fuel a heating network, electricity production installations which use renewable energy, ground installations utilizing the mechanical energy of wind in a zone which is not interconnected to the metropolitan continental grid, or installations which implement efficient technology in terms of energy efficiency, such as a cogeneration plant. A decree from the French supreme administrative court (*Conseil d'Etat*) details the limits in terms of installed capacity of the production installations which benefit from the purchase obligation. These limits, which cannot exceed 12 megawatts for the installations specified at the 2° of the article L.314-1 of the French energy code, are determined for each category of production installation¹⁴. Article 3 of the decree

¹⁴ The decree No. 2000-1196 of 6 December 2000 defines the calculation method of the installed capacity of the installations producing electricity and specifies by installation category their capacity limits.

No. 2001-410 provides for the revocation of the certificate enabling the purchase obligation if the production limit is exceeded.

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

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

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

Under a tender process organized under article 8 of the French Electricity Act¹⁵, codified at article L.311-10 of the French energy code, the power purchase price is determined by the French Ministry of the Energy and is set out in the tender documentation. Such price depends on the nature and specificity of the facility and is indexed according to the terms of the power purchase agreement.

¹⁵ Decree No. 2002-1434 dated 4 December 2009 (as amended) further defines the tendering procedure. As stated previously, article 8 of the French Electricity Act was repealed by the order No. 2011-504 dated 9 May 2011 and codified in the new Energy Code.

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

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

Following this preliminary ruling, in its decision of 28 May, 2014, the Conseil d'Etat annulled with full retroactive effect two ministerial orders setting out the purchase conditions of wind-energy electricity on the grounds that the renewable energy support scheme did qualify for State aid – as the ECJ has confirmed – and thus the ministerial orders implementing the renewable energy support scheme with regard to wind-energy were taken in breach of Article 108(3) TFEU. The said ministerial orders are thus considered as being deprived of any legal existence since the date of their enactment at the end of 2008 so that they may no longer serve as an enabling provision for feed-in tariffs above market rate.

However, in the meantime (11 October 2013), the French Government had notified the renewable energy support scheme with regard to on-shore wind energy to the European Commission and by decision of 27 March 2014 (State aid SA.36511 – France, Mécanisme de soutien aux énergies renouvelables et plafonnement de la CSPE), the Commission has approved the French support scheme for on-shore wind energy. Feed-in tariffs for other renewable energies were not notified and the Commission reserved its right to investigate the feed-in tariff schemes for the other renewable energies as well (see footnote 2 of the Decision).

In order to remedy the annulment of the ministerial orders concerning the on-shore wind energy, on 1st July, 2014, the French Ministry of Ecology, Sustainable Development and Energy published a new ministerial order fixing the purchase conditions of onshore wind-energy electricity. The new feed-in-tariff provided by the 2014 ministerial order is the same as the feed-in-tariffs set out in the previously annulled ones. Particularly, the 2014 ministerial order provides for the same basic tariff and the same indexation formula to evaluate the feed-in-tariff applicable to the complete requests for Power Purchase Agreements (PPAs) filed after 31 December 2007. By adopting a new scheme with retroactive effect identical to the one annulled by the Conseil d'Etat, the French government managed to secure the legal and financial situation for the wind energy producers.

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

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

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

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

Renewable energy based power plants do not have priority for connection to the grid. As a general principle, article 23 of the French Electricity Act¹⁶ requires the entities responsible for the management and connection of facilities to the electricity grid to guarantee without discrimination an access to the grid to all electricity generators. The two entities responsible for the connection to the grid are (i) Électricité Réseau Distribution France (“ERDF”) for the connection to the medium-voltage or low-voltage grid; and (ii) Réseau de Transport d'Electricité (“RTE”) for the connection to the extra high-voltage or high-voltage grid. In order to be connected to the grid, a generator must request ERDF or RTE (depending on the voltage) to issue a proposition (*Proposition Technique et Financière*) setting out technical and financial conditions under which the facility of the generator may be connected to the grid (the “PTF”). Upon receipt of the generator’s application, the grid manager has three months to study the information submitted by the generator and to provide the generator with the PTF. The PTF contains an estimation of the technical and financial conditions for the connection but also mentions an estimated waiting time for the

¹⁶ Repealed by the order No. 2011-504 dated 9 May 2011 and codified in the French energy code.

execution of a connection agreement as well as an estimated length of the connection works.

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

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

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

Please refer to our comments in Section # 7.

STATISTICS

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

Gross Electricity Generation in 2014 (TWh)	540
Electricity from renewable sources (%)	19,5

(Source: RTE – Bilan électrique - 2014)

	Gross Electricity Generation from renewable sources in 2014 (in TWh)
Total	96,2
Hydro	68,2
Wind	17
Solar	5,9
Other	5,1

(Source: RTE – Bilan électrique - 2014)

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GEORGIA



David Archvadze



Irakli Mgaloblishvili

MGALOBlishvili KIPANI DZIDZIGURI (MKD)

GENERAL

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

The main nature and importance of renewable energy in Georgia is that, first of all, the Unified Energy System of the country's renewable energy resources will be more solid and sustainable and it will strengthen the country's energy independence and electricity imports will continue to be reduced. Secondly, renewable energy is environmentally clean electricity production and the thirdly, alongside with technological developments, the costs for wind and solar power stations are constantly being reduced, which makes the electricity produced by such stations even more competitive on the market.

The Ministry of Energy of Georgia is actively and vigorously working in the direction of renewable energy. Georgia is rich in hydro resources and the rational utilization of water resources and increasing of level of country's energy independence is the main priority of Georgia's energy policy. However, in addition to water resources, a great deal of attention is paid to a) utilization of wind power and increasing its capacity from 20 MW to 200

MW; and b) study of the potential of solar energy. As an example we want to mention is that in 2015, the country will have commenced construction of the first 20 MW wind power plant - "Kartli" which is the first pilot project financed by the state. The investment cost is 30 million US dollars. The annual output of the wind power plant will be 87 million kilowatts. Currently, the study of wind power project feasibility has been completed and the construction of the turbines and the construction works of the project for the preparation of tender documents is ongoing.

In general, Georgia has an important wind energy potential, which is estimated to be able to generate up to 4 billion kilowatt-hours annually. By the natural energetic potential, the territory of Georgia is divided into four zones:

1. A high speed zone - mountainous regions of Southern Georgia, Kakhaberi Vake and the central region of Kolkheti Valley. The working duration period is more than 5,000 hours per year.
2. A partly high speed and low speed zone - the Mtkvari gorge from Mtskheta to Rustavi, Southern part of Javakheti, Black Sea line from Poti to Kakhaber Vake. The working duration is 4,500-5,000 hours per year.

3. A low speed mountain range effective exploitation zone - Gagra mountain range, Kolkheti Valley and Eastern Georgian lowlands.
4. And a low speed mountain range limited exploitation zone - Iori Zegani and Sioni water reservoir.

Research conducted on the territory of Georgia revealed suitable areas for the construction of wind power stations.

Wind power engineering now has the most competitive energetic technology.

Location	Capacity (megawatts)	Annual energy generation (million kilowatts-hour)
Poti	50	110
Chorokhi	50	120
Kutaisi	100	200
Mta-Sabueti I	150	450
Mta-Sabueti II	600	2000
Gori-Kaspi	200	500
Paravani	200	500
Samgori	50	130
Rustavi	50	150
Summary	1450	4160

According to the Georgia's geographic location, solar radiation is effective and long and varies from 25 to 280 days. It amounts to 1,900-2,200 hours per year. Solar energy potential in Georgia is estimated at 108 MW annually, which is equivalent to 34 thousand tons of standard fuel.

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

According to the Law of Georgia Electric Power and Natural Gas¹ dated 27 June, 1997, Renewable Energy Sources are non-fossil, sustainable energy sources arising from, but not limited to: bio and hydro energy, geothermal, solar, wind and sea (including stream, wave and thermal) energies. Thus, there are the following specific types of renewable energy:

- Bio-energy;
- Hydro energy;
- Geothermal energy;
- Solar energy;
- Wind energy;
- Sea (stream, waves and thermal) energy.

REGULATION

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

According to the Law on Electric Power and Natural Gas, dated 27 June 1997, the Ministry of Energy of Georgia is in charge of working out principle directions in the energy policy field (including the renewable energy sector). It also ensures implementation of the policy and creation and adoption of the relevant legal framework. At the same time, one of the main functions of the Ministry is supporting the diversification of energy sources and promotion of utilization of renewable

¹ Georgian Law on Electric power and Natural Gas, Article 2, paragraph Z²⁹

(alternative) resources² which are linked to the increase of production efficiency. According to the resolution №97 of the Government dated 16 April 2013 “on the Approval of Regulations of the Ministry of Energy”, the Ministry performs the monitoring of implementation state policy, state strategy and state programs in the field of energy. In addition, the Ministry ensures the coordination of their performance supervises the implementation process and works out necessary recommendations. The Ministry supports the attraction of investments in the energy sector and takes necessary actions within its competence.

As for the regulation of the energy sector (including renewable energy), it is performed by the state regulatory body - the Energy and Water Regulatory Commission (hereinafter - the "Commission"), the status and purpose of which shall be detailed below. The legal basis for the activities of the Commission are the Constitution, international treaties of Georgia, the Law on Electric Power and Natural Gas, the Commission's regulations and other legislative acts. The regulatory powers are carried out by the following methods:

- Through setting the rules and terms for electricity generation, transmission, and distribution of the energy produced by utilizing renewable energy sources;
 - Through licensing of electricity generation, transmission, and distribution of the energy produced by utilizing renewable energy sources which includes: issuances of licenses, making changes thereto and invalidation thereof;
 - Through regulations and setting the tariffs for generation, transmission, distribution, dispatching, transit, import and use of electricity;
- Through implementing the measures for the supervision over the observance of licensing terms in energy sector (including the energy generated through the renewable energy resources) and taking the measures prescribed by the law for the breach of the terms above;
 - Through the settlement of disputes between the licensees, power plants, importers, exporters and the market operators within its competence;
 - Through the promotion of enhancing the efficiency of power generation, transmission, distribution dispatching, transit, import, export and consumption.
 - The main legislative and normative acts regulating this field are the following:
 - The Law of Georgia on Electric Power and Natural Gas, dated June 27, 1997;
 - The Law of Georgia on National Regulatory Bodies, dated 13 September 2002;
 - The Law of Georgia on Licenses and Permits, dated 24 June 2005;
 - Resolution No. 97 of the Government of Georgia On the Approval of Regulations of the Ministry of Energy dated 16 April 2013;
 - Resolution No. 107 of the Government of Georgia on the Approval of "State Program Renewable Energy 2008" – On the Approval of the Rules for Ensuring the Construction of New Sources of Renewable Energy in Georgia, dated 18 April 2008;
 - Order of the Ministry of Energy No. 39 on the Approval the Ten-Year Plan of the Development of the Transmission Network, dated 8 April 2015;

² Georgian Law on Electric power and Natural Gas, Article 3, paragraph 1, subparagraph K

- Resolution No. 6 of the Energy and Water Regulatory Commission on the Approval of Regulations of the Energy and Water Regulatory Commission, dated 6 March 2014;
- Resolution No. 23 of the Energy and Water Regulatory Commission on the Approval of Rules for Control and Licensing in the Sector of Electric Power, Natural Gas and Water Supply, dated 18 September 2008.

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

According to the Georgian applicable legislation, the Ministry of Energy works out the main directions of state policy in the field of energy and ensures implementation thereof while the regulatory body is the Commission, the legal grounds of activities which have been outlined above.

The Commission is authorized to issue licenses in the electricity sector, as well as to regulate the activities of the licensees, importers, exporters, market operators and suppliers, including the right to monitor the energy markets.

The Commission's issues the normative administrative legal act - the resolution. The Commission consists of 5 members. The session of the Commission is valid if attended by at least 3 members. The candidate members are proposed to the Parliament by the President upon the agreement with the Government. The Parliament elects the members by the majority. Commission members are elected for 6 years. The Commission is headed by the chairman, who is also elected by the Parliament of Georgia by majority of votes.

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

Generally, according to the applicable law³, there are four types of licenses in the electric power industry:

- Electricity generation license;
- Electricity dispensation license;
- Electricity dispatch license;
- Electricity distribution license.

Briefly about the license for generation of electricity:

The procedures and conditions for licensing were established by Resolution No. 23 of the Commission, dated September 18, 2008.

I. General rule of issuance of license

An electricity production license is issued by the Commission. The license is granted for an indefinite period of time (lifetime).

II. Grounds for obtaining of license

The applicant shall submit to the Commission a written statement in accordance with the form established by the Commission. The application shall cover all the mandatory points.

A statement must be submitted in compliance with the requirements under Article 78 of General Administrative Code of Georgia. It shall indicate the type of license requested and the list of the documents annexed to the application.

³ Energy and Water Regulatory Commission decree No. 23 activity Control and Licensing Regulation of electric power, natural gas and water supply sector dated September 18, 2008

The application shall include the following:

- a) Extract from the Registry of Commercial and Non-Commercial Legal Entities;
- b) List of fixed assets of the company and audit assessment thereon;
- c) Document confirming ownership title and/or right to use of the fixed assets, extract from the Public Registry, cadastral map (to determine the scope of the license);
- d) Report of Technical and Construction Inspection Agency confirming the compliance of the technical facilities with current state standards and norms;
- e) Technical conditions for connection to the network:

e.g. technical conditions issued by the owner of the transfer license (except for the dispatching license) which is necessary for connecting to the electric power network of Georgia; in case of connecting to the distribution network, the technical conditions from the distribution company;

- f) Scheme of electric energy or gas network (except for the dispatching license).

III. Rules for Issuance of License

The Commission examines the compliance of the application and documents submitted by the license applicant with the established requirements within 3 days.

Upon the admission of the application the Commission shall publish a public announcement for the submission of documents.

Within 20 days from the moment of making the announcement on public submission, any person may provide a written opinion.

The Commission must conduct an oral hearing regarding the opinions presented within 7 days

from the moment of expiry of the deadline for the submission of opinions.

The Commission makes a decision on granting or refusal to issue a license. In case of a refusal to issue a license, the Commission must immediately notify the applicant of the reasons for refusal to grant the license requested.

The Commission shall make a decision on issuance of license within 30 days of submission of the application. If the decision is not taken within the mentioned term, the license shall be considered to be issued.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

According to the applicable legislation⁴, the power plants generating under 13 MW of electric power are exempted from obtaining a license subject to issuance of a normative administrative legal act granting the authority to generate electric power.

INCENTIVES

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

There are no substantial tax reliefs for the renewable energy sector. As a rule, exports are exempt from VAT.

⁴ The applicable legislation includes: (i) Law of Georgia on Electric Power and Natural Gas, Article 2, Subparagraph Z⁶; and (ii) Energy and Water Regulatory Commission decree No. 23 activity Control and Licensing Regulation of electric power, natural gas and water supply sector dated September 18, 2008, Article 2, Paragraph 3, Subparagraph A.

Also, starting from January 1, 2011 until January 1, 2016, the electricity and guaranteed power (such as thermal power) supply, except for the supply of electricity to consumers (defined by the Law of Georgia on Electric Power and Natural Gas) as well as transmission and/or dispatch services shall be VAT exempt with the right to deduct.

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

According to the Georgian applicable legislation there is no such guarantee.

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

According to the Georgian applicable legislation⁵, for power stations (including for the hydro energy power plants) built after August 1, 2008, the power generation tariffs are not regulated. The new hydro energy power plants have the right to perform trade with electric power with free (deregulated) tariffs. For the sale of electricity generated by hydro energy power plants which were built before August 1, 2008 the upper limit of the tariff is determined by the Commission. There is an exception to the rule described above which is established by the Resolution of the No. 107 of the Government dated April 18, 2008. In particular, the above-mentioned act sets the mandatory requirements for the construction, operation and use of any energy plant being within the scope of the State Program:

- Within 10 years from the moment of the commencement of operation of the power

plant, each year during the winter period for the 3 months agreed by the memorandum, the full amount of electricity generated shall be sold only to ensure domestic consumption;

- Within 10 years from the moment of the commencement of operation of the power plant, each year during the winter period for the 3 months agreed by the memorandum, upon the choice of the relevant person, the sale will be implemented to any customer in Georgia for free (regulated) tariff, and/or to ESCO in accordance with the guaranteed purchase agreement where the tariff shall be determined in accordance with applicable law.

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

Yes, Georgia ratified the Kyoto Protocol on May 28, 1999 by Resolution No. 195 of the Parliament of Georgia. The mentioned Resolution has been in force since February 16, 2006. In addition, the amendments made to the Kyoto Protocol on March 6, 2007 have also been ratified by the Parliament on February 22, 2011 by Resolution No. 4247-IS.

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

Under the current legislation, the priority for connection to the grid by the renewable energy has not been established / specified.

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

The Georgian legislation does not provide such incentives.

⁵ Law of Georgia on Electric Power and Natural Gas, Article 49³

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

There are no other incentives available to renewable energy generation companies, except for those as described above.

STATISTICS

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

As already mentioned, neither wind nor solar power plants are currently operating in Georgia. In fact, the only type of renewable energy generation currently performed in Georgia is through hydro power plants. It should be noted that according to the per capita water resources, Georgia is in world's top five countries. However, only 18% of the rivers capable of generating electricity are actually being utilized so far. Capacities of hundreds of rivers (out of 26,000 rivers in Georgia) with the potential of 20 TW/h still remain unused.

In recent years the share of hydro energy in the total electric power generation has been growing steadily: from 85% in 2004 to 92% in 2012. Since 2006, electricity production from hydropower plants increased by almost 40% while the heat power plants decreased by 55%. The Government aims at fully replacing heat power generation with 100% of electricity power from renewable resources in the near future.

Currently, Georgia operates 13 licensees and 25 small power plants. Among them only "Engurhesi" LLC and "Vardnlihesi" LLC remain under state ownership. The country's total installed capacity is up to 3,300 MW, while the average annual output amounts to 10 billion kW/h, of which 92% comes from hydroelectric power plants. 90% of the domestic demand on electricity is satisfied by the existing hydroelectric power plants. After the commencement of operation of the new power plants, this figure will increase to 100%. Four hydroelectric power plants went into operation in 2014. Among them is the "Paravani HPP" with an installed capacity of 87 MW. In the same year, there have begun the construction of two new plants and 25 memorandums have been signed concerning the development of the additional 32 projects.

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GERMANY



Thomas Burmeister



Dr. Guido Hermeier

WHITE & CASE LLP, DUESSELDORF ¹

GENERAL

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

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

In 2014, renewable energy sources had a share of 25,8% of the electricity supply and 11,1% of the total energy consumption in Germany (figures of the Federal Ministry for Economic Affairs and Energy for 2014, AG Energiebilanzen, AGEE-Stat).

Germany is one of the pioneers in the wind power sector. With an installed onshore capacity of 38.116 MW in 2014,

Germany has one of the largest installed onshore wind power capacities worldwide. In 2013 about 29% of the installed wind power in Europe was installed in Germany. With 2.340 MW offshore installed capacity in 2014, offshore wind power installations comprise 5,8% of the total installed wind power capacity in Germany.

Up until 2012 Germany was one of the world's top photovoltaic markets. As per 2014, there was an installed capacity of 38.236 MWp in Germany.

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

¹ The chapter on Germany was written for the Global Renewable Energy Guide 2014 by Dr. Tobias Woltering and Rebecca Stern. Both left White & Case. Thomas Burmeister and Dr. Guido Hermeier reviewed and updated the chapter for the Global Renewable Energy Guide 2015.

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

With the Act on Development of Renewable Energy Sources (Erneuerbare-Energien-Gesetz – “EEG”), the German legislature created a regulatory instrument:

- to enable the energy supply to develop in a sustainable manner in particular in the interest of mitigating climate change and protecting the environment;
- to reduce the costs of energy supply to the economy not least by including long-term external effects;
- to conserve fossil energy resources;
- to promote the further development of technologies to generate electricity from renewable energy sources;
- to increase the share of electricity generated from renewable energy sources to at least

40 to 45% by the year 2025, 55 to 60% by the year 2035, and 80% by the year 2050 of gross electricity consumption; and

- to increase the share of renewable energy sources in terms of total gross final energy consumption to at least 18% by 2020.

The EEG entered into force in 2000 and has been amended several times thereafter with the latest substantial amendment as of 1 August 2014. The amendment is to be seen against the backdrop of the approach of the EU Commission to qualify the German renewables support scheme as being a notifiable state aid. In this regard, the EEG 2014 is based on the Guidelines on environmental and energy State Aid for 2014 - 2020 (in force since 1st July 2014) of the European Commission to ensure its compliance with European Law. Key to the amendment is:

- Mandatory direct selling for all new plants with an installed capacity of at least 100 kW (as opposed to the existing feed-in tariff model) with possible entitlement to market premium paid under the EEG;
- feed-in tariffs are only being paid on an exceptional basis;
- the introduction of degression rates for wind energy conditional on target corridors for expansion;
- the discontinuation of certain additional payments.

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

According to the European Directive on the promotion of the use of energy from renewable sources (Directive 2009/28/EC), energy from renewable sources covers energy from renewable non-fossil sources, namely

wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases (Article 2 para. 2 lit. (a) Directive 2009/28/EC). However, even though German law on renewable energies is already consistent with material provisions of Directive 2009/28/EC, there is no generally accepted definition of “renewable energy” in the German legislation. Therefore, the coverage of renewable energy may differ between the respective legislative acts.

Within the meaning of the EEG, renewable energy is defined as:

- hydropower including wave, tidal, salinity gradient and marine current energy;
- wind energy (onshore and offshore);
- solar radiation;
- geothermal energy; and
- energy from biomass (as defined in detail in the Biomass Ordinance) including biogas, biomethane, landfill gas and sewage treatment gas and from the the biologically degradable part of waste from households and industry.

Biomass (energy sources from phyto and zoomass) is defined in Sec. 2 of the Biomass Ordinance as:

- plants and parts of plants;
- fuels made from plants or parts of plants whose components and intermediate products have all been produced from biomass;
- waste and by-products of plant and animal origin from agriculture, forestry and commercial fish production;

- biological waste within the meaning of Sec. 2 no. 1 Biological Waste Ordinance;
- gas produced from biomass by gasification or pyrolysis and all resulting products and by-products; and
- alcohols produced from biomass, whose components, intermediate products, products and by-products have been produced from biomass.

Please note that the EEG also promotes mine gas – even if mine gas is not a renewable energy within the meaning of the EEG.

The Act on the Promotion of Renewable Energies in the Heat Sector (*Erneuerbare-Energien-Wärmegesetz* - *EEWärmeG*) defines renewable energy as:

- heat extracted from the ground (geothermal energy);
- heat extracted from the air or water, excluding waste heat (ambient heat);
- heat made technologically usable to cover thermal energy demand through the use of solar radiation;
- heat generated from solid, liquid or gaseous biomass; and
- cooling energy extracted from the ground or water or extracted from heat extracted or generated as per the above.

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

- biomass within the meaning of the Biomass Ordinance;
- biodegradable fractions of household and industrial wastes;

- landfill gas;
- sewage treatment plant gas;
- sewage sludge within the Sewage Sludge Ordinance; and
- vegetable oil methyl ester.

REGULATION

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

The principle laws and regulations are:

a. Renewable Energy Sources Act – Erneuerbare-Energien-Gesetz (EEG); in force since March 2000, latest amendment in 2014. An English translation is available on the Federal Ministry for Economic Affairs and Energy’s website, <http://www.bmwi.de/EN/Topics/Energy/Renewable-Energy/2014-renewable-energy-sources-act.html>

The EEG is the most important legislative act promoting the use of renewable energies in Germany. It covers the connection of installations for the generation of electricity from renewable sources to the grid system, the provisions for the promotion to be received from the grid operator and a nationwide scheme to equalise the financial burden of the promotion of renewable energies. In detail:

Priority connection to the grid system

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

Priority grid access, transmission and distribution

Grid system operators are obliged to grant grid access, transmit and distribute electricity generated from renewable sources. Upon request, grid system operators must immediately optimise, strengthen and expand their grid systems in accordance with the best

available technology in order to ensure the purchase, transmission and distribution of such electricity. In the event of grid system overload grid system operators are obliged to regulate the installations generating energy from renewable energy sources provided it is ensured that the largest possible quantity of electricity from renewable energy sources and from combined heat and power generation is being purchased (feed-in management). If, however, they have to do so, they are obliged to compensate the installation operator (hardship clause).

Remuneration

In the past the promotion scheme for renewable energies in the EEG was based on feed-in tariffs. Operators were entitled to offer the produced power to the grid operator who was obliged to purchase the power and pay feed-in tariffs as fixed by the EEG.

The latest amendment of the EEG in 2014 changed the promotion scheme fundamentally from the existing feed-in tariff model to a mandatory direct selling for all newly commissioned plants (Sec. 2 para. 2 EEG). The operator sells the produced power to a third party and receives as remuneration the agreed contract price. For promotion he is entitled to claim the payment of a market premium from the grid operator. The market premium is, simplified, calculated on monthly basis as the difference between the promotional level as fixed in the EEG and the average monthly market price of the respective renewable energy.

Direct selling is in general mandatory to all new installations. Existing installations are free to choose and move between feed-in tariffs and direct selling.

Further it is to be mentioned, that the EEG 2014 includes exemptions from the obligation of direct selling. Feed-in tariffs still apply to small installations. Under Sec. 37 EEG

installation operators are entitled to receive feed-in tariffs

- for electricity from installations which are commissioned before 1st January 2016 and which have a total maximum installed capacity of 500 kilowatts; and
- for electricity from installations which are commissioned after 31st December 2015 and which have a total maximum installed capacity of 100 kilowatts.

Further, according to sec. 38 EEG all operators are entitled to receive feed-in tariffs in exceptional cases. The reasoning of the amendment clarifies that it may be an exceptional case if and to the extent direct selling is temporarily not possible, e.g., in case of insolvency of the direct selling contractor. However, these exceptional cases were not specified in the EEG. Thus, no restrictions apply. However, the exceptional character is expressed in commercial aspects. The feed-in tariffs amount only to 80% of the promotional level as fixed by the EEG. Thus, the operator should enough incentives to make us of feed-in tariffs in exceptional basis as short as possible.

Nationwide equalisation scheme

The costs resulting from the purchase of feed-in tariffs are equalised according to the EEG and the Ordinance on the EEG Nationwide Equalisation Scheme (*Equalisation Scheme Ordinance - AusglMechV*). While the EEG provides for the principles of the equalisation mechanism, the Equalisation Scheme Ordinance stipulates detailed rules on the marketing of electricity generated from renewable sources by the transmission operators.

Step 1:

Grid system operators who purchase electricity generated from renewable energy sources or

paying market premiums to the plant operator are obliged to deliver the power immediately to the respective upstream transmission system operator, who has to reimburse the grid system operators with the financial support given by them to the installation operators.

Step 2:

The four transmission system operators are obliged to balance the amount of power and costs resulting from step one amongst each other.

Step 3:

Transmission system operators are obliged to sell electricity for which feed-in tariffs have been paid, either themselves or jointly, without discrimination, transparently and observing the provisions of the Equalisation Scheme Ordinance on the spot market of an energy exchange.

Step 4:

Transmission system operators can demand reimbursement of the difference between the costs resulting from step one and the earnings resulting from step three from electricity suppliers which supply electricity to final consumers to share the costs caused due to the EEG promotion regime that exceed the compensation received by selling this electricity on the spot market of an energy exchange (the so-called “EEG surcharge”). This EEG surcharge has to be calculated in a transparent manner according to the Equalisation Scheme Ordinance. The EEG surcharge for 2011 was set at 3,530 ct/kWh, for 2012 at 3,592 ct/kWh for 2013 at 5,277 ct/kWh, for 2014 6,240 ct/kWh and for 2015 6,170ct/kWh. (Resource: www.netztransparenz.de).

Step 5:

Generally, electricity suppliers are entitled to claim the financial burden arising from the

EEG surcharge from final consumers on contractual basis (general equalisation scheme).

However, there is an exception granted to electro-intensive undertakings and railways. Upon request, their financial burden arising from the EEG promotion of renewable energy shall be limited pursuant to a special equalisation scheme (Secs. 63 et. seq. EEG 2014). The reason for this exception is that the electro-intensive undertakings shall not lose its competitiveness due to the EEG regulatory framework.

b. Ordinance on the EEG Nationwide Equalisation Scheme (Equalisation Scheme Ordinance – Ausgleichsmechanismusverordnung; in force since 20th February 2015) and Implementing Ordinance on the EEG Nationwide Equalization Scheme (Equalisation Scheme Implementing Ordinance – Ausgleichsmechanismus-Ausführungsverordnung; in force since February 2010, latest amendment in 02/2015)

This Ordinances set out details of the complex equalisation scheme under the EEG according to which purchased electricity is marketed on the spot energy market and costs are distributed amongst the electricity suppliers which supply electricity to final consumers (see above, steps 3 and 4). The Ordinance intends to simplify the process by minimizing costs and risks for the involved parties.

c. Act on the Promotion of Renewable Energies in the Heat Sector (Renewable Energy Heat Act – Erneuerbare-Energien-Wärmegesetz (“EEWärmeG”); in force since 2008, latest amendment in 2014).

The purpose of this Act is to enable the sustainable development of the energy supply and to promote the further development of technologies for the generation of heat and cold 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

and cold demand by using a specific amount of renewable energy (unless the building meets certain requirements regarding thermal insulation).

d. Ordinance on Generation of Electricity from Biomass (Biomass Ordinance – Biomasseverordnung; in force since 2001, latest amendment in 2014)

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

- substances that shall be considered to be biomass;
- the technical processes for generating electricity from biomass; and
- environmental standards that must be met in relation to the generation of electricity from biomass.

e. 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 2014)

This Ordinance aims at ensuring that bioliquids used for electricity production which are eligible for the promotion framework under the EEG are always produced in full compliance with binding sustainability standards. Bioliquids not complying with these standards are not eligible for the promotion under the EEG. The liquid biomass must – in the interest of environment, climate and nature – have the capability to reduce greenhouse gases by 35%. This value will climb to 50% in 2017 and 60% in 2018. Furthermore, the cultivation of the crops must not take place in areas having a high ecological value.

To qualify for the regulated feed-in tariffs stipulated by the EEG, installation operators have to prove vis-à-vis the grid system

operator, that the offered energy has been solely generated from renewable energy sources, i.e., that it has been produced in accordance with these sustainability standards.

f. Ordinance on Requirements Pertaining to Sustainable Production of Biofuels (Biofuel-Sustainability Ordinance – Biokraftstoff-Nachhaltigkeitsverordnung; in force since 2009, latest amendment in 2012)

To promote biofuels, the German legislature grants tax relief. Energy products are generally subject to energy taxes under the German Energy Tax Act. Upon request, tax relief can, however, be granted for the share of biofuels used in the fuel mix, as long as the biofuels are generated in a sustainable manner according to the Biofuel-Sustainability Ordinance. Germany aims at increasing the share of biofuels in the fuel mix up to a volume of 10% by 2020, while ensuring at the same time that biofuels are generated in a sustainable manner.

Furthermore, the Federal Emission Protection Law (*Bundesimmissionsschutzgesetz*) requires that fuels placed on the market have to contain a certain amount of biofuels.

g. Ordinance on System Services by Wind Energy Plants (System-Service Ordinance – Verordnung zu Systemdienstleistungen durch Windenergieanlagen (“SDLWindV”); in force since 2009, latest amendment in 2011)

The development of onshore wind energy generation has been progressing in line with the political objectives with respect to the development of renewable energies. It is expected that up to 45,000 MW of onshore wind facilities will be installed by the year 2020. This development represents a challenge for grid system operators. They must ensure the security and stability of the grid system and at the same time transport significantly increasing shares of wind-generated electricity through the grid system. Therefore,

newly installed and repowered onshore wind farms have to provide system services which have – so far – only been required from conventional installations. This Ordinance intends to boost the security and stability of the grid system, particularly solving wind-energy-related problems (such as frequency control, voltage control, network security), as well as technical developments in this field.

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

Federal Network Agency (Bundesnetzagentur)

The tasks of the Federal Network Agency with regard to renewable energy are enumerated in the EEG.

Monitoring the (nationwide) equalisation scheme

The Federal Network Agency particularly monitors the (nationwide) equalisation scheme (Secs. 56 – 62 EEG – see question 3).

The Federal Network Agency shall monitor:

- that electricity suppliers are only charged by transmission system operators with feed-in tariffs paid in accordance with the nationwide equalisation scheme;
- that the data referring to the location and capacity of the installations the grid system operators are obliged to present to the Federal Network Agency, and other data the grid system operators have to publish, are duly submitted and published; and
- that, based on the information provided by the transmission system operators, third parties are able to understand how the EEG surcharge is calculated.

Installation register

The Federal Network Agency shall establish and maintain an installation register in which

all necessary information on the installations will be gathered, centralized and made available to the public. Further, the installation register is the official data basis for the amount for newly installed capacity. The amount of newly installed capacity in an respective time period has an impact of the promotional level of new plants built in future.

Stipulations regarding technical devices and Feed-in Management

The Federal Network Agency has the option to determine specifications of the technical equipment necessary to allow the so-called feed-in management (Secs. 9 and 14 EEG) and the order of deactivation pursuant to Sec. 14 EEG (Sec. 85 EEG).

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

The Federal Office of Economics and Export Control is charged with duties regarding the special equalisation scheme for electro-intensive undertakings and railways (Secs. 63 – 69 EEG). The financial burdens arising from the renewable energies promotion system according to the EEG and imposed on electro-intensive undertakings or railways can be limited to them under certain conditions.

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

As main permits/licenses, the construction and operation of renewable energy installations may require a building permit under the applicable Federal Building Code (*Baugesetzbuch – BauGB*) and/or a permit according to the Federal Immission Control Act (*Bundesimmissionsschutzgesetz – BImSchG*). The building permit is issued by the competent building control authority; the permit under the BImSchG is generally issued by the relevant district authority.

A building permit may be necessary depending on the type, size and location of an installation, the area in which it is built as concerns planning law requirements as well as the applicable federal state law. The main legal basis for the requirements and conditions of licensing are BauGB, the Federal Land Utilisation Ordinance (*Verordnung über die bauliche Nutzung der Grundstücke - BauNVO*) and the respective building codes of the federal states. A building permit may be granted only if the installation complies with the planning law requirements, particularly with the determinations laid down in the respective building plan.

A permit according to the BImSchG is generally required for installations that due to their nature or their operation are particularly liable to cause harmful effects on the environment or otherwise endanger or cause considerable disadvantages or considerable nuisance to the general public or the neighborhood. The installations subject to licensing are listed in the Ordinance on Installations Requiring a Permit (*Verordnung über genehmigungsbedürftige Anlagen - 4. BImSchV*).

The respective permit has to be granted if the installations are in compliance with the requirements set forth in the BImSchG itself and the ordinances issued thereunder as well as with all other public law requirements. This includes, inter alia, the relevant planning law situation, the obligations of operators of installations subject to a permit according to the BImSchG and any other provisions under public law or any occupational safety and health concerns. Depending on the type and size of an installation, it may be necessary to carry out an ecological impact assessment as part of the applicable licensing procedure.

Since the BImSchG provides the legal basis for the granting of a permit, the permit has a so-called concentrating effect (*Konzentrationseffekt*). This means that, with the exception of planning approvals, approvals of operation plans under

mining law, official decisions based on nuclear law and permits and authorizations under water law, the permit under the BImSchG includes all other official decisions, in particular licenses under public law, approvals, grantings, permits and authorizations. Thus, a permit under the BImSchG also contains a building permit under the applicable federal state building code.

Offshore wind farms, which are usually situated beyond Germany's coastal waters in the exclusive economic zone, require a permit pursuant to the Maritime Facilities Ordinance (*Seeanlagenverordnung – SeeAnlV*) from the Federal Maritime and Federal Hydrographic Agency (*Bundesamt für Seeschifffahrt und Hydrographie – BSH*) as the single authority responsible for granting such permits.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

Besides the above mentioned licenses, no permit is needed under the German Energy Law Framework to operate an installation, which produces electricity from renewable energies. Only in cases where an operator wants to supply household consumers directly, he must give notice to the Federal Network Agency about starting the supply.

INCENTIVES

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

Electrical power is generally subject to an electricity tax in Germany. However, the electricity tax law allows for exemptions for electrical power if it is exclusively generated from renewable energy sources and if the electrical power is withdrawn from a grid system / power line that provides electrical power exclusively from renewable

energy sources (Sec. 9 para. 1 no. 1 Electricity Tax Act).

8. 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 grid access, transmission and distribution:

- grid system operators must, without delay and as a priority, grant grid access, transmit and distribute electricity, which is generated from renewable energy sources and sold in the forms of supported direct selling, other direct selling and feed-in tariff (Sec. 11 and 20 para. 1 EEG); and
- grid system operators must, upon request of those wishing to feed in electricity, without delay in accordance with the best available technology optimize, strengthen and expand their grid systems to order to ensure the purchase, transmission and distribution of the electricity generated from renewable energy sources (Sec. 12 para. 1 sentence 1 EEG). This obligation also applies to upstream grid system operators, which are operating upstream grid systems of up to 110 kilovolts (Sec. 12 para. 1 sentences 2 EEG).

In the event of grid system overload, grid system operators may regulate the system by means of so-called feed-in management instruments (Sec. 14 EEG). Using these instruments, grid system operators shall be entitled to take technical control over installations connected to their grid system with a capacity of more than 100 kW and of more than 30 kW in the case of solar radiation if:

- otherwise there would be a grid system bottleneck in the respective grid system area including the upstream grid system;

- priority for electricity from renewable energy sources, mine gas and combined heat and power generation is maintained to the extent that other power generators do not have to remain on the grid system in order to ensure the security and reliability of the electricity supply system; and
- they have called up the available data on the current level of feed-in in the respective grid system region.

The respective installation operator, however, can claim compensation: The grid system operator whose grid system gives rise to the need for the feed-in management shall compensate those installation operators who, due to such measures, were not able to feed in electricity. Compensation is limited to 95% of the lost revenues plus additional expenses and minus the saved expenses. If the lost revenues in a year exceed 1 percent of the revenues of that year, the operators affected by the assumption of feed-in management measures can claim 100% compensation from that point in time (Sec. 15 para. 1 sentence 2 EEG). Claims for further compensation made by the installation operators against the grid system operator shall generally remain unaffected (Sec. 15 para. 3 EEG).

9. 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 and sold under the feed-in tariff regime to the grid operator. However, with regard to new installations to which the feed-in tariff system is in general not applicable a remuneration guarantee is to be seen in the market premium to be paid by the grid operator.

General provisions regarding promotion

The EEG sets forth the basic parameters of the promotion system which apply equally to all types of renewable energy sources, such as:

- the commencement and duration of the promotion (20 years plus the commissioning year from the start of the commission of a new installation);
- switch between the applicable forms of sale;
- the calculation of the promotional level in accordance with the capacity of the installation in relation to the threshold value to be applied in each case;
- the degression (the specific promotional level shown in the EEG are subject to a reduction each year by certain percentages set forth in Sec. 24 et. seq. EEG; the applicable promotional level calculated for any given year shall apply for the above mentioned duration).

Provisions only for some of the renewable energy sources

In addition to the rules applicable to all types of renewable energy sources, the EEG sets forth specific rules for the promotion of every single type of installation in detail (in particular the feed-in tariff to be paid).

The following table shows the promotional level for the different renewable energy sources. The tables below sets forth the promotional levels shown in the EEG which, however, are subject to the degression mentioned above.

Renewable Energy Source	EEG	Rated Output/Capacity	Promotional level (cent/KWh) (subject to degression)
Hydropower	Sec. 40	max. 500 kW	12.52
		max. 2 MW	8.25
		max. 5 MW	6.31
		max. 10 MW	5.54
		max. 20 MW	5.34
		max. 50 MW	4.28
		> 50 MW	3.50
Landfill Gas	Sec. 41	max. 500 kW	8.42
		max. 5 MW	5.83
Sewage Treatment Gas	Sec. 42	max. 500 kW max. 5 MW	6.69 5.83
Mine Gas	Sec. 43	max. 1 MW	6.74
		max. 5 MW	4.30
		> 5 MW	3.80
Biomass	Sec. 44	max. 150 kW	13.66
		max. 500 kW	11.78
		max. 5 MW	10.55
		max. 20 MW	5.85
Biogas from fermentation of biological waste	Sec. 45	max. 500 kW	15.26
		max. 20 MW	13.38
Biogas from fermentation of liquid manure	Sec. 46	all installations (< 75 kW, minimum 80 % liquid manure use)	23.73
Geothermal Energy	Sec. 48	all installations	25.20
Wind Energy Onshore	Sec. 49	● basic value	4.95
		● initial value (first 5 years after start of commissioning)	8.90
Wind Energy Offshore	Sec. 50	● basic value	3.90
		● initial value (first 12 years after start of commissioning)	15.40
		or ● initial value (first 8 years after start of commissioning before 1 st January 2020)	19.40
Solar Radiation	Sec. 51 para. 1	basic tariff	9.23
Solar Radiation – fixed in , on or to a building or a noise barrier	Sec. 51 para 2	max. 10 kW	13.15
		max. 40 kW	12.80
		max. 1 MW	11.49
		max. 10 MW	9.23

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

The Kyoto Protocol was ratified by Germany in 2002. It entered into force on 16 February 2005.

The general regime for carbon credits in Germany is the European Union Emissions Trading System (*EU ETS*). Under the EU ETS, the EU Member States agree on national emission caps which have to be approved by the EU commission. In order to comply with the national cap the Member States allocate allowances to the industrial operators subject to the EU ETS. The operators may reassign or trade their allowances. However, after the end of each year they have to return a number of allowances depending on their actual emissions to the competent national authority.

When the Kyoto Protocol came into force, Phase I of the EU ETS had already become operational. The EU later incorporated the so-called Kyoto flexible mechanism certificates (these are in detail: Joint Implementation projects (*JI*), Clean Development Mechanism (*CDM*) and International Emissions Trading (*IET*)) into the EU ETS. Up to a certain extent, Emission Reduction Units (*ERUs*) and Certified Emission Reductions (*CERs*) resulting from *JI* respectively *CDM* may be used by industrial operators in order to cover their emissions.

In Germany, the EU ETS is implemented by the carbon emission trading act (*Treibhausgas-Emissionshandelsgesetz – TEHG*) in national law. The allocation of allowances for the third trading period from 2013 until 2020 is stipulated in the Ordinance on allocation 2020 (*Zuteilungsverordnung 2020 – ZuV 2020*). Generally, the German Emissions Trading Authority (*Deutsche Emissionshandelsstelle – DEHSt*) at the Federal Environment Agency

(*Umweltbundesamt*) is the competent national authority regarding the allocation of allowances and the surveillance of actual emissions. The German Emissions Trading Authority also is the competent authority to implement the market instruments of the Kyoto Protocol.

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

According to the principle of priority connection to the grid system, grid system operators shall immediately and as a priority connect installations generating electricity from renewable energy sources and from mine gas to the place in their grid system which is appropriate in terms of voltage level and which is at the shortest linear distance to the site of the installation if this or different grid system does not have a technically and economically more suitable connection point (Sec. 8 para. 1 sentence 1 EEG).

The costs associated with connecting installations generating electricity from renewable energy sources to the grid system connection point and with installing the necessary metering devices for recording the quantity of electricity transmitted and received shall be borne by the installation operator (Sec. 16 para. 1 EEG).

If the grid system operator assigns a different grid system connection point to the installation, it shall bear the resulting additional costs (Sec. 16 para. 2 EEG).

Regarding the grid connection of offshore windfarms, further amendments to the German Energy Act (*Energiewirtschaftsgesetz – EnWG*) have been adopted at the end of 2012. Such amendments set forth planning mechanisms for the offshore grids, provisions for claims of windfarm operators due to delayed grid connection or unavailability of the grid as well as provisions and conditions for a pass through of damages paid by grid operators to end customers.

12. 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.

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

There are various incentives available to renewable energy generation companies, issued by the Federal Republic and the Federal States. In particular, the loans by the Reconstruction

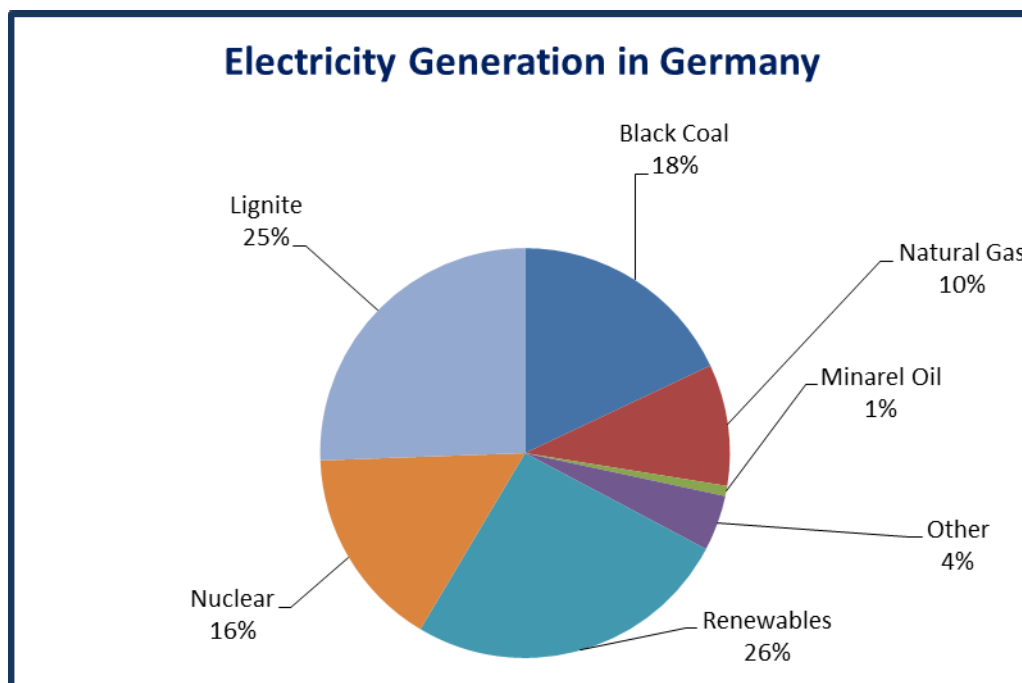
Loan Corporation (*Kreditanstalt für Wiederaufbau – KfW*) are to be mentioned. The KfW grants

loans with low interest rates for the erection of installations producing heat or power from renewable energy sources. The standard loan has an annual percentage rate starting of 1.31% and the duration can be up to 20 years (<https://www.kfw.de/inlandsfoerderung/Unternehmen/Energie-Umwelt/>).

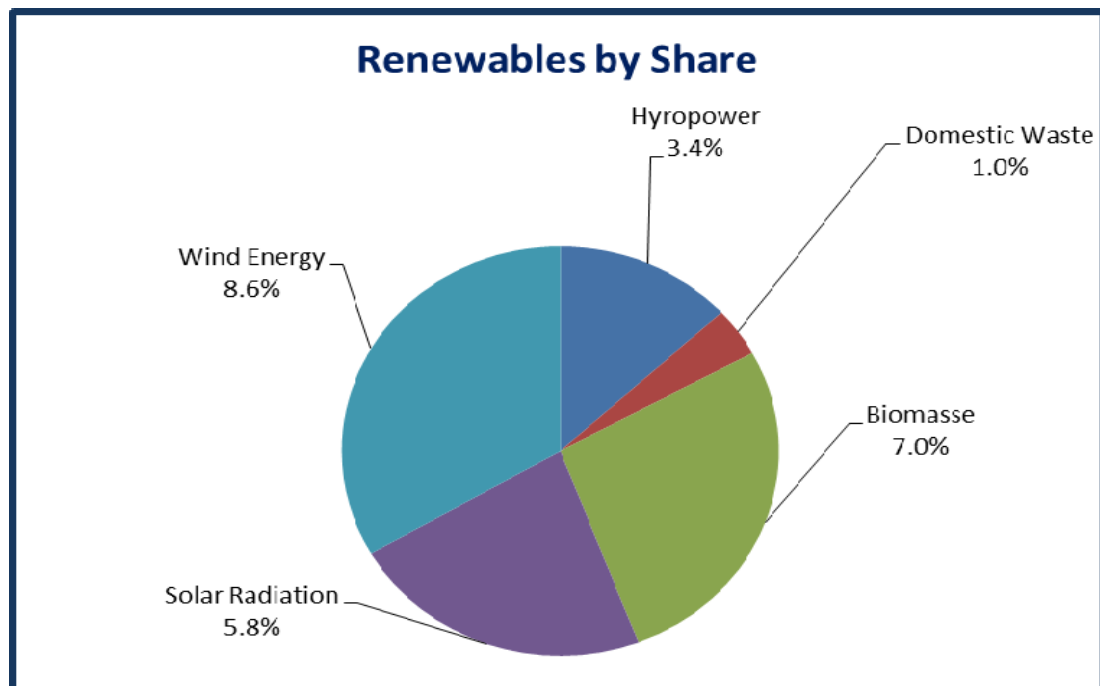
STATISTICS

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

In 2014, renewable energy sources had a 25.8% share in the total generation of electricity. This share is steadily growing.



(Source: Federal Ministry for Economic Affairs and Energy, AG Energiebilanzen, Status as per December 2014)



(Source: Federal Ministry for Economic Affairs and Energy, AG Energiebilanzen, Status as per December 2014)

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GENERAL

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

Although renewable energy has not been in the foreground of political debates, renewable energy sources are seen as opportunities for the country to develop new economic sectors. Their development may serve as a solution to recent economic difficulties because it has the potential to create numerous “green-collar” jobs. More broadly, it could also provide a solution to national and global sustainability and environmental preservation issues. In effect, the government has adopted multiple strategies to utilize the country’s renewable resources.

As a member of the European Union, Hungary is committed, under the EU Renewable Energy Directive, to increasing the share of renewable energy sources in its energy production. Under the Hungarian Renewable Energy Action Plan (otherwise known as National Action Plan or NAP), Hungary has set itself a target that exceeds the one set by EU directives. More specifically, the government is committed to achieving a 14.65% share of renewable energy sources in the total energy production by 2020.

In 2013 9.22% of the electricity generated in Hungary was produced by renewable energy sources.

The National Action Plan (“NAP”), enacted in 2010, is an ambitious guide that seeks to replace the state’s antiquated economic model – which relied too heavily on fossil fuels – with a modern “green” economic model. The NAP sets out measures with a long-term outlook. The NAP has three main objectives: (i) to optimize security of supply by developing renewable energy sources in order to reduce the country’s dependence on energy imports, (ii) to develop environmental sustainability and climate protection, and (iii) to promote competitiveness. Ultimately, the NAP attempts to utilize the country’s natural, economic, social, cultural and geopolitical assets in order to reach the goals it sets for the state. In the long-term, the NAP should serve as the basis for an Act on sustainable energy management, which will stipulate precise measures and a framework for the sustainable development of Hungary’s economy.

The National Energy Strategy and the New Széchenyi Plan, both adopted in 2011, cite the development of a green economy as a key point in the recovery and expansion of Hungary’s economy. Among other suggestions, these documents emphasize the importance of increasing the use of renewable energy sources in

order to achieve a sustainable energy supply. In accordance with these efforts, recent renewable energy projects include a new waste and biomass processing unit in the Mátra Power Plant with a value of HUF 2 billion; the construction of a bio-gas power plant in Tatabánya valued at HUF 3 billion; and the construction of a solar power plant near Mátra Power Plant with a value of HUF 6.4 billion.

Despite the ambitious targets set by the Government, Hungary remains dependent on energy imports in particular with respect to natural gas which, combined with coal and nuclear energy, accounts for approximately 90% of its energy mix. The lengthy permitting procedures, high costs of grid connection and insufficient grid capacity hinder the full utilization of the growth potential of the renewable energy sector. Still, thanks to its geographical location, Hungary has a relatively strong resource of solar power, an excellent bio-energy potential and large reserves of geothermal energy, all of which could lure further investments, if combined with a more flexible administrative environment and less investment barriers.

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

Renewable energy is defined by Section 3 (45) of Hungary's Act No. LXXXVI of 2007 on Electricity ("Electricity Act") as energy from a renewable, non-fossil and non-nuclear energy source such as solar, wind, geothermic energy, wave, tide or hydro energy, biomass or other energy source either directly or indirectly generated from biomass, landfill gas, gas from a sewage treatment facility and biogas. Aerothermal energy is also qualified as renewable energy by Decree No. 1/2012 (I.20.) of the Ministry for National Development on the calculation methodology of the share of energy from renewable sources, which

implements the definition of the European Directive 2009/28/EC on the promotion of the use of energy from renewable sources.

REGULATION

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

General regulatory framework

The Electricity Act sets out a framework that regulates the production of electricity through renewable energy sources. With respect to renewable energy producers, the Act regulates the establishment of new energy capacities, the access of energy producers to the electricity network (the grid) and the licensing of power plants. The framework tries to promote the production of electricity through renewable energy sources by reducing some of those producers' input costs. For example, authorized network operators bear a portion of the costs associated with required technical adaptations to the public utility system, which are necessary to integrate renewable energy producers into the electricity network.

In order to promote the use of renewable energy sources, the Electricity Act imposes a purchasing obligation which guarantees renewable energy producers a certain level of income for their investment. Government Decree No. 389/2007 (XII. 23.) sets out the rules on the feed-in obligation and feed-in tariffs of electricity produced from renewable energy resources, or from waste and electricity generated in co-generation facilities. Decree No. 63/2013. (X. 29.) of the Ministry for National Development further details the rules on the distribution of electricity falling under the feed-in obligation and on the methodology for determining prices to be applied in the course of distribution.

The Electricity Act also designates the Hungarian Energy and Public Utility Regulatory Authority as the main regulatory authority in the Hungarian energy market.

Specific rules for wind and biofuel

As regards wind energy, Decree No 33/2009 (VI. 30.) of the Ministry for Transportation, Communications and Energy sets out the conditions for the announcement of tenders to establish wind power capacities and the minimum requirements in such tenders, and the rules of procedure in such tendering.

As far as biofuel is concerned, the European Union's Renewable Energy Directive (2009/28/EC) on the promotion of the use of energy from renewable sources and the Fuel Quality Directive (2009/30/EC) on the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions have been implemented in Hungary by Act No. CXVII of 2010. On the basis of this Act, the requirements for sustainable biofuel production are further detailed by Government Decree No. 343/2010.

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

The main regulatory authority in the Hungarian energy market is the Hungarian Energy and Public Utility Regulatory Authority ("MEKH"). MEKH is an independent regulatory body which means that it enjoys wide discretion in exercising its competency, and the Ministry for National Development as MEKH's supervisory organ has limited powers over it (e.g. neither MEKH's decision can be modified or repealed by the Ministry, nor can MEKH be forced to commence proceedings).

In the renewable energy sector the competence of MEKH extends to (i) approving and repealing energy licenses and supervising their observation; (ii) supervising the energy market including market abuse and protect customers;

(iii) setting the amount and duration of electricity off-take obligation; (iv) setting charges for system usage and prices in regulated markets; (v) issuing the guarantee of origin of renewable energy; (vi) rendering decisions in relation to the daily operation of a licensee (e.g. approve its merger, demerger or internal codes).

Besides MEKH, regulatory powers are also exercised by the Government and particularly by the Ministry for National Development in the form of adopting decrees for the implementation of sectoral energy acts (e.g. Decree No. 1/2012 of Ministry for National Development on the Calculation of the Proportion of Renewable Energy or Government Decree No. 389/2007 on the Off-Take Obligation and the Price of Electricity from Renewable Sources). As decision-making regarding long-term projects and strategic objectives also falls within the competence of the Government and the Ministry, they can substantially influence the market indirectly (e.g. by the approval of the Hungarian Renewable Energy Action Plan 2010-2020).

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

The permits/licenses required for renewable energy projects do not substantially differ from the permits/licenses required for energy projects generally. Accordingly, every renewable energy project needs general, non-energy-related permits and special, energy-related permits.

The general permits mainly cover the (i) environmental permits (issued by the environmental authority if the project has an effect on the environment); (ii) water usage permits (issued by the disaster prevention authority if the project involves water-related work or establishment of water facility); (iii) building permits (issued by the building authority). Before planning a renewable energy project, it is also advisable to consult the local municipalities affected, as they have the authority

to designate areas within their territories where the installation of energy projects is possible.

The installation and commencement of the operation of power plants also require special energy-related permits. Furthermore, a change in the nominal capacity of each power plant is subject to special permits. With respect to special permits, the MEKH acts as the administrative authority and issues licenses. Licenses are mainly differentiated by the nominal capacity of the power plants (regardless of whether they generate energy from renewable or non-renewable sources) and fall into the following categories: (i) simplified license for power plants with a nominal capacity of 0.5 MW or above; (ii) normal license for power plants with a nominal capacity of 50 MW or above. In the case of power plants with nominal capacity of 500 MW or above, a preliminary license must also be procured which may be granted upon the affirmative resolution of the Parliament.

In accordance with the provisions of Government Decree No. 389/2007, renewable energy projects may participate in the off-take system (for a description of this system, please refer to Section No. 8) if the licensee submits its request and MEKH approves that. In this case, MEKH determines the amount and the price of the electricity eligible for feed-in in the off-take system. It is noteworthy that, for wind turbines, a slightly different procedure applies as MEKH may issue licenses only through tenders.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

The Electricity Act provides for license exemption for energy generation, regardless of whether from renewable or non-renewable sources, for (i) household power plants (means a micro power plant connected to a low voltage system with an interconnection capacity of less than 50 kVA at any given connection point); and

(ii) power plants with a nominal capacity below 0.5 MW. For both of these power plants, neither a general building permit (except for power plants with a nominal capacity below 0.5 MW that operate in Natura 2000 or other protected sites or which connect to a power installation) nor special permits are needed. However, other statutory requirements are still applicable to this license-exempt energy generation (e.g. there shall be a connection point to the main electricity grid system).

Due to the governmental incentives and economic considerations, household power plants have become widespread in the area of solar and wind energy, while power plants with a nominal capacity below 0.5 MW are common in the field of the water and bio-gas energy. A recent amendment of Act LXXXV of 2011 on Environmental Protection Product Charges imposed a duty on solar cells, thus the growth rate of solar power is likely to decrease.

INCENTIVES

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

Development tax incentives in the form of tax allowances may be granted under Act LXXXI of 1996 on Corporate Tax and Dividend Tax (“Corporate Tax Act”) to taxpayers who install and operate ‘independent environment protection projects’ with a minimum value of HUF 100 million. An investment may qualify as an eligible project if it exclusively serves the environment protection and rehabilitation objectives as defined by Act LIII of 1995 on the General Rules of Environmental Protection. Such objectives include: (i) the reduction of the use and pollution of the environment, the prevention of damaging the environment and its rehabilitation; (ii) the protection of human health and the improvement of the environmental conditions of life quality; and (iii) the preservation and conservation of natural resources, and rational and efficient management

that ensures the renewal of such resources. A further eligibility criteria is that the investment shall be either (i) a green field investment performed by an SME or realized in specific regions of Hungary, or (ii) an investment for a new business activity to be realized by a large enterprise in specific settlements in the central region of Hungary. Investors must also comply with the requirements of Government Decree No. 165/2014 (VII.17.) on Development Tax Allowances.

The tax allowance may only be claimed if a minimum of 25% of investment costs is funded by the investor's own equity and if prior to the commencement of the investment either a notification has been sent to the relevant Ministry or – in the case of projects exceeding certain thresholds – the request for approval by the Government has been submitted. The investor must also have been a tax payer in Hungary for a minimum of five years prior to the submission of the notification or request for approval. The project must be operated for a minimum of 5 years by a large enterprise or 3 years by an SME after completion for the investor to be allowed to claim the tax allowance.

The taxpayer may take advantage of the tax allowance either in the tax year of or following the year when the operation started, and may continue utilizing the incentive in the following nine tax years but not later than the fourteenth tax year after the submission of the initial notification or the request for approval for the project.

The extent of the tax allowance that may be claimed (i.e. the maximum amount of investment costs that may be deducted from the corporate tax) depends on the qualification of the investor as a small, medium or large enterprise and the geographical location of the investment project.

Further to the above environment specific tax allowance, companies that generate energy from renewable sources may also be eligible for

general, non-renewable specific tax incentives available under the Corporate Tax Act.

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

Hungary operates a feed-in tariff system (designated as a mandatory off-take regime, with the Hungarian abbreviation: "KÁT") which guarantees tariffs for renewable and waste based electricity higher than the actual market price. The operation of this feed-in tariff system is based on the so called KÁT balance group. Electricity producers eligible for KÁT support have to join the KÁT balance group and contract with MAVIR, the Hungarian transmission system operator, which is the recipient of the electricity sold in the KÁT system and pays the feed-in tariffs to the power generators. Its tasks also include balancing deviations from the production schedule, buying and selling the electricity eligible for KÁT support, and distributing it to KÁT recipients. The base load in the KÁT system is distributed among the obliged 'balance group' operators in proportion to the consumption (excluding consumption under universal service subject to certain conditions) in their balance group. The remaining quantity of KÁT electricity above the base load is sold on the organized power market (HUPX).

The feed-in quantity and feed-in period for each eligible electricity producer is determined by MEKH. Producers can sell in the KÁT system until their respective feed-in period expires or until the feed-in quantity is used up. This mechanism is intended to ensure that the producer does not get more support than required for the return of the investment. The feed-in period for biomass and biogas plants is 15 years, for landfill gas plants it is 5 years; other kinds of support may proportionally reduce these periods. In the case of other technologies the feed-in period and quantity is determined individually for each project.

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

Feed-in tariffs are different for renewable electricity and waste-to-energy electricity. Furthermore, tariffs are differentiated by size (nominal capacity), time of licensing (before or after 1 January 2008), time period during the day (peak, valley and deep-valley periods with different lengths as set out in detail in the schedule of Government Decree No. 389/2007), as well as by technology (solar and wind energy get slightly different tariffs). The feed-in tariff of the producers of renewable energy licensed before 1 January 2008 is adjusted by the Hungarian Consumer Price Index of the previous year.

By contrast, the tariffs of waste-to-energy producers and those renewable producers who were licensed after 1 January 2008 are indexed on a yearly basis by the consumer price index of the previous year reduced by one percentage point. Actual tariffs can be found on the webpage of the Authority.

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

The Kyoto Protocol was ratified by Hungary in 2002 and came into force on 16 February 2005. As a member of the European Union, Hungary follows EU directives in order to participate in the EU Emission Trading System (EU ETS), which operates pursuant to Article 17 of the Kyoto Protocol. The regime governing the trade of carbon credits in Hungary is found in Act CCXVII of 2012. Moreover, Act LX of 2007 alongside Government Decree 323/2007 (XII. 11.) provide a detailed framework regarding the execution of Hungary's commitments under the Kyoto Protocol.

In its third trading period, the EU ETS imposes an EU-wide cap on emissions, which is reduced each year. Businesses must cover their total emissions by maintaining a sufficient number of allowances (carbon credits). In order to meet their target, businesses can either reduce their total emissions or purchase allowances from businesses that have a surplus of allowances. In effect, the scheme adds value to allowances, which in turn creates an incentive for companies to invest in emission reducing projects.

In order to improve transparency, allowances are increasingly allocated through auctioning. However, a portion of the allowances continues to be allocated for free by governments on the basis of harmonized rules.

Due to changes in Hungary's industries and recent economic downturns, the greenhouse gas emissions in the country have been below target, which has generated a surplus of carbon credits.

The minister responsible for energy policy can buy or sell carbon credits on behalf of the Hungarian State. Pursuant to Section 22 of Government Decree 323/2007 (XII. 11.), the money generated by the sale of allowances must be used to operate the Green Investment Scheme. More specifically, the Scheme aims at further reducing national emissions and at supporting the state's environmental commitments by subsidizing emission reducing projects.

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

Renewable energy based power plants enjoy certain benefits when connecting to the grid under the Electricity Act and Decree No. 7/2014 (IX.12.) of MEKH on the financial conditions of connecting to the grid. As a means of prioritizing Renewable Energy Sources for Electricity (RES-E), the Electricity Act allows grid operators to impose

importation restrictions on energy imports that are disadvantageous for renewable energy producers. Such restrictions include denying access to the grid, or limiting, reducing or suspending previously agreed supplies. When applying any of these restrictions, network operators must observe the principles of an objective, transparent, and non-discriminatory decision-making and compliance with applicable regulations.

Decree No. 7/2014 reduces the costs for RES-E plants to connect to the grid. The Decree provides for a reduction in connection fees for power plants that generate at least 70% or 90% of their electricity through renewable energy sources by 30% and 50% respectively.

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

In Hungary, equipment or materials used for the constructions of renewable energy based power plants do not receive preferential treatment; however, there are other incentives intended to support the production of raw material at local level that can be used in renewable energy based power plants. The most important incentives apply to the following renewable energy sources: (i) bio-mass (ii) bio-gas and (iii) bio-fuel.

With regard to bio-mass, electricity produced by using bio-mass must take part in the off take obligation in line with Government Decree 389/2007.

As to bio-gas, livestock establishments may apply for non-refundable subsidies to develop bio-gas plants as set out by the Decree No. 27/2007 of the Ministry for Agriculture.

In relation to bio-fuel, the fuel distributors shall ensure that the proportion of the bio-fuel in the fuel distributed by them reaches a certain target specified by a government decree

in accordance with the provisions of Act CXVII of 2010 on the Promotion of Renewable Energy in the Field of Traffic, which serves as an indirect incentive for bio-fuel producers.

There are also non-refundable subsidies available for the production of the energy herb and plants in accordance with Decrees 71/2007 and 72/2007 of the Ministry for Agriculture.

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

There are several incentives which are non-energy or non-renewable energy specific and from which renewable energy generation companies can benefit.

Hungary has a favourable position in the 2014-2020 EU Fiscal Period as more than HUF 7,000 billion can be allocated to supported projects. Three of the operative programs may be of particular importance for investors as they consider energy – and particularly renewable energy – as key areas. These programs are: (i) the Environmental and Energy Efficiency Operative Program (“KEHOP”), (ii) the Economy Development and Innovation Operative Program (“GINOP”) and (iii) the Area and Settlement Development Operative Program (“TOP”). This implies that in the future, many new tender opportunities will potentially be available for investors of energy generation from renewable sources. These programs put emphasis on the application and enhancement of renewable energy sources, the decrease of CO₂ emission or the establishment of smart and low energy cost economy. The recent restructuring of the management of tendering and decision-making procedures and the allocation of the powers to the individual ministries and the Prime Minister’s Office may reduce the length and the

administrative burden of the tendering and application procedures for funding under the EU schemes.

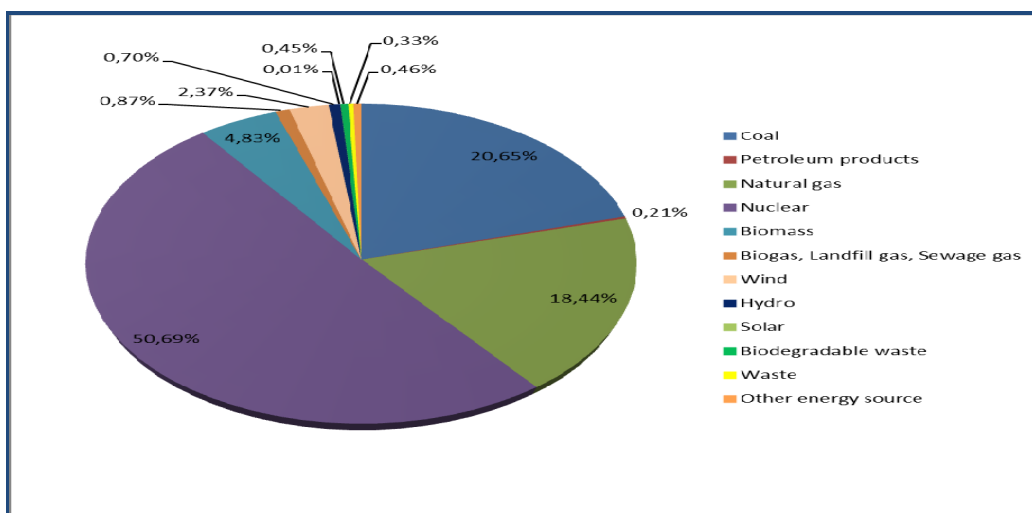
However, in 2013, the data showed that 9.22% of the electricity generated in Hungary was produced from renewable energy sources. At that time, biomass (4.83%) and wind (2.37%) were the major sources of renewable energy. Other renewable sources included biogas, landfill gas and sewage gas (0.87%), hydro (0.70%), solar (0.01%), and biodegradable waste (0.45%).

STATISTICS

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

Statistical data regarding the Hungarian Power System has yet to be released for 2014.

Share of energy sources in gross electricity production in Hungary in 2013.¹



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¹ Statistical Data of the Hungarian Power System, MAVIR, 2014

IRELAND



Alex McLean



Nicole Ridge

ARTHUR COX

GENERAL

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

Under the Renewable Energy Directive 2009/28/EC (the “RED”), the European Commission has set out its “20-20-20” goals, i.e., a 20% reduction in greenhouse gases by 2020; a 20% increase in EU energy efficiency by 2020; and for 20% of total energy consumption in the EU to come from renewable sources by 2020. The RED also imposes individual renewable energy consumption targets for each Member State based on a flat rate approach adjusted to each Member State’s GDP. The EU has set a target of 16% of Ireland's gross final consumption of energy to come from renewable sources by 2020. In addition to specific targets in respect of transport (10%) and heat (12%), 40% of overall electricity consumption must be generated from renewable sources.

Ireland has some of the most valuable renewable energy resources in Europe. The development and growth of the domestic renewables sector will continue to be of the utmost importance for Ireland as a means of both satisfying its own 2020 obligations and of realizing sustainable alternatives to our dependency on fossil fuels and reducing our reliance on imported fuel sources.

The National Renewable Energy Action Plan (“NREAP”) sets out the Government's strategic approach and concrete measures to achieve Ireland’s 2020 targets. The NREAP estimates the total contribution expected from each renewable energy technology sector. By 2020, it is proposed that the following renewable energy technologies will hold the following energy share in electricity:

- Hydro: 34 MW;
- Tide, wave, Ocean: 75 MW;
- Biomass: 153 MW;
- Wind (Onshore): 4,094 MW;
- Wind (Offshore): 555 MW.

Ireland faces a significant challenge to reach its 2020 targets for installed renewable capacity. In order to reach these targets, it is estimated that between 3,200 and 3,700 MW of wind power needs to be installed by 2020 to meet the 40% target. This equates to approximately double the current capacity of 1,800MW.¹

Regulators and policy makers alike face the challenge of ensuring a smooth transition from

¹ *All Island Generation Capacity Statement 2014 – 2023*, published by EirGrid and the System Operator for Northern Ireland (“SONI”).

the current market to a market fuelled by up to 40% renewable energy in less than five years' time. While renewable technologies continue to be promoted at a government policy level, key stakeholders are working to address practical implementation issues such as grid development and management of variability. A high penetration of intermittent renewable generation (largely wind) has placed a premium on flexibility and resilience in the balance of Ireland's generation portfolio. The Irish Transmission System Operator, EirGrid, is involved in detailed examination of the challenges posed by large scale intermittent power on the Irish grid, and is leading several facilitation studies to ensure the appropriate management of the grid and stability of the electricity system during this transition.

In 2008 EirGrid launched a major initiative, known as Grid25, to develop and upgrade the transmission infrastructure throughout Ireland. EirGrid commenced a number of large-scale regional projects under this initiative, including having invested €500 million in the Grid Link project to develop the electricity infrastructure in the south and east of Ireland. Since 2008, EirGrid has completed the construction of over 330km of new circuits, in addition to upgrading and refurbishing over 1,200km of existing circuits.

In March 2015, EirGrid published a draft review of its Grid25 strategy after extensive public consultation. Acknowledging the changing economic context and advanced transmission technologies, EirGrid is now considering alternatives to the construction of 400kV overhead lines as part of the Grid West and Grid Link projects. Such alternative measures could include High Voltage Direct Current underground cables or the introduction of more power to the existing overhead lines.

The proposed development of a 400kV overhead line as part of the North South

Interconnector project will be unaffected by this revised strategy.

The East-West Interconnector, a 500MW HVDC electricity link between the Irish and British grids, was completed in 2012. This was a major step forward for both markets, as it will help to improve security of supply as well as promoting competition in the electricity sector.

In the transport sector, the Government introduced a number of measures to reduce the dependency on imported oil. In order to meet its target of 10% of vehicles to be powered by electricity in 2020, the Government has introduced tax incentives to encourage both private individuals and businesses to purchase electric vehicles. Although high costs and underdeveloped support systems have so far hindered the popularity of the electric car, the existing scheme is encouraging and indicative of the Government's intention to grow this sector in the future.

In addition, the national Biofuel Obligation Scheme 2010 places an obligation on suppliers of mineral oil to ensure that a minimum percentage of motor fuels placed on the market is produced from renewable sources. On 1 January 2013, the minimum percentage requirements (by volume) was increased from 4.166% to 6.383%.

The Irish government withdrew Vehicle Registration Tax ("VRT") relief on biofuel car models in 2013. This approach is in line with the European Commission's proposal to scale back support for biofuels, for example by eliminating subsidies for food crop based biofuel production and imposing caps on biofuel shares of total transportation fuels². VRT and other tax reliefs will however continue to be available in respect of electric and hybrid vehicles in Ireland.

² Ren21's Renewables Global Status Report 2013.

In addition to reducing Ireland's dependence on fossil fuels and securing energy supply, Ireland's renewable energy industry plays a central role in our economy by creating a demand for highly-skilled workers and providing a welcome boost to the construction sector.

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

The principal legislation governing the electricity industry in the Republic of Ireland is the Electricity Regulation Act 1999, as amended (the "1999 Act"). The 1999 Act defines "renewable, sustainable or alternative forms of energy" as energy used in the production of electricity which uses as its primary source one or a combination of more than one of the following: wind, hydro, biomass, waste (including waste heat), biofuel, geothermal, fuel cells, tidal, solar and wave.

The definition of renewable energy was further expanded in the European Communities (Renewable Energy) Regulations 2011 (which transposed the RED into Irish law) to include energy from renewable non-fossil sources, namely aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.

REGULATION

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

The Minister for Communications, Energy and Natural Resources (the "Minister") has overall responsibility for the renewable energy sector. The Minister is advised by a range of other statutory bodies including the Commission for Energy Regulation (the "CER"), which was established under the 1999 Act as the national

regulatory authority responsible for overseeing the liberalization of Ireland's energy sector and granting licenses for the generation, transmission, distribution and supply of electricity. The Minister is also assisted by Ireland's national energy authority, Sustainable Energy Authority Ireland ("SEAI") which promotes and provides grants for the development of sustainable energy structures, technologies and practices.

Government policy in the electricity sector is driven principally by the relevant European Directives. The European Communities (Internal Market in Electricity) Regulations 2000 (the "2000 Regulations") completed the transposition of Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity (Directive 96/92/EC). The European Communities (Internal Market in Electricity) Regulations 2005 (the "2005 Regulations") were promulgated to transpose the requirements of Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC (Directive 2003/54/EC).

The Energy Efficiency Directive (2012/27/EU) (the "EED") was partially transposed into Irish law under the European Union (Energy Efficiency Obligation Scheme) Regulations 2014 (SI No. 131 of 2014) (the "2014 Regulations"). Under the 2014 Regulations, the Minister is authorised to issue Energy Efficiency Notices to energy suppliers, setting out energy efficiency standards, timescales and targets to be achieved. The scheme enables the Minister to monitor performance and compliance with the EED by apportioning the obligations between the market players.

Ireland operates within an all-island single electricity market (the "SEM") encompassing

the Republic of Ireland and Northern Ireland. The SEM is 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 SEM is currently being redesigned. EU Member States are obliged to implement electricity markets that are consistent with the EU Target Model. The SEM faces certain challenges in this regard, as it does not provide for an ex-ante price or permit widespread intra-day trading. Ireland has been granted a derogation to implement the necessary SEM reforms by the end of 2017.

Following a consultation process with stakeholders in the industry, the Minister is expected to publish a White Paper in September 2015 setting out Ireland's new Energy Policy Framework. The White Paper will be a welcome addition to the industry as it is expected to set out a clear policy to address the challenges facing Ireland's energy market, particularly the renewable sector. Its publication is due to coincide with Ireland's input to the EU's 2030 Framework for Climate and Energy policies and preparations for the UN's 21st Conference of the Parties within the United Nations Framework Convention on Climate Change in November 2015.

The overall regulatory framework (supported by various action plans published by the Government) is indicative of Ireland's commitment to become a low carbon economy based on energy efficiency and renewable energy, driven principally by EU policy.

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

Ireland has successfully fostered a strong culture of independent regulation through the appointment of an independent energy sector regulator. The CER is an independent body and is responsible for overseeing the liberalization of Ireland's energy sector and granting licenses for the generation, transmission, distribution and supply of electricity.

The CER is Ireland's designated National Regulatory Authority ("NRA") for the purposes of the New Electricity and Gas Directives and has responsibility for gas, electricity and water regulation. In light of European and Irish energy policy, the role and functions of the CER have been expanded over time and with various legislative amendments.

Its functions are extensive, and include:

- licensing and regulation of gas and electricity undertakings;
- regulating allowed revenues and tariffs for incumbents;
- overseeing market arrangements including, without limitation, approving changes to the electricity and gas industry Codes;
- promoting and regulating gas and electricity safety;
- cooperation with other NRAs and the European Commission;
- settling disputes;
- ensuring a high standard of protection for final customers in dealings with licensed suppliers; and
- monitoring.

The CER also has functions in relation to the development of an all-island energy market and the development and regulation of the SEM.

Since the establishment of the SEM in 2007, the role of market operator for the island of Ireland has been discharged by a contractual joint venture between EirGrid plc, operator of the transmission system in Ireland, and its Northern Ireland counterpart, System Operator Northern Ireland (“SONI”), known as the single electricity market operator (“SEMO”).

The electricity transmission system is owned by the State-owned vertically integrated company, the Electricity Supply Board (“ESB”). On 1 July 2006, a newly established independent state-owned company, EirGrid, took over the role of transmission system operator (“TSO”). Pursuant to Section 14(2A) of the 1999 Act, only EirGrid may be granted a license to act as TSO. Pursuant to Section 14(2B) of the 1999 Act, only the ESB may be granted a license to act as transmission asset owner (“TAO”). In July 2011, having undertaken an extensive independent analysis of the issue, the Irish government decided that ownership of the electricity transmission network assets would remain with the ESB while the operation and development of the transmission system would continue to be the responsibility of EirGrid.

In a decision published on 21 May 2013, the European Commission determined that the effective implementation of the transmission system arrangements in place in Ireland met the requirements of the EU Third Energy Package (Directive 2009/72/EC). Accordingly, EirGrid would be certified as the transmission system operator (“TSO”) for Ireland. The ESB will remain as owner of the transmission assets in Ireland and is responsible for the funding of, and carrying out construction and maintenance on, the transmission network.

The electricity distribution system is owned and operated by the ESB. Pursuant to Section 14(2C) of the 1999 Act, only the ESB or a subsidiary of the ESB may be granted a license as distribution system operator (DSO). The European Communities (Internal Market in Electricity) (Electricity Supply Board) Regulations 2008 provide for the establishment of a subsidiary company of the ESB to operate the distribution system. Pursuant to these Regulations, the subsidiary company and the ESB must enter into agreements in respect of how the subsidiary company will fulfil its duties as DSO. ESB Networks Limited, a new ring-fenced subsidiary within the ESB group charged with the operation and management of the electricity distribution system, was established in December 2008.

In respect of gas, the transportation (transmission and distribution) system is owned by the vertically integrated State-owned Ervia (formerly known as Bord Gáis Éireann). Pursuant to the European Communities (Internal Market in Natural Gas) (BGÉ) Regulations 2005, as amended, Gaslink, an independent subsidiary of Ervia, was established as the independent system operator for the Ervia transportation system (transmission and distribution system) in furtherance of the requirements of Directive 2003/55/EC concerning common rules for the internal market in natural gas.

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

The main permits and licenses required for renewable energy projects are listed below.

(a) Authorization to Construct

Under Section 16 of the 1999 Act, projects require authorization from the CER to construct or reconstruct a generating station, for the purpose of supply to final customers.

Contravention of this section is an indictable offence. A project is also required to hold an authorization to construct under the terms of their connection agreement.

The criteria to which the CER may have regard in determining an application for such an authorization are prescribed under Section 18 of the 1999 Act (Criteria for Determination of Authorizations), Order 1999 (SI No. 309 of 1999) and include the safety and security of the electricity system, electric plant and domestic lines and the protection of the environment including the limitation of emissions to the atmosphere, water or land.

(b) Licence to Generate Electricity

The key administrative authorization required to operate a generation facility is a license to generate electricity granted by the CER under Section 14(1A) of the 1999 Act.

Applicants are required to provide information as to their technical and financial competence to construct and operate the relevant facilities.

Under Regulation 4(1)(a) of the European Communities (Internal Market in Electricity) Regulations 2000 (S.I. No. 445 of 2000) as amended by Regulation 23(a) of the European Communities (Internal Market in Electricity) (Electricity Supply Board) Regulations 2008 (S.I. No. 280 of 2008), unauthorized generation of electricity is an offence and parties are liable on summary conviction to a fine not exceeding €5,000 or to imprisonment for a term not exceeding 12 months, or to both. Furthermore, by virtue of section 34(3) of the 1999 Act, the making by the ESB of a connection offer is subject to the offeree holding a license to generate.

(c) Transmission Use of System Agreement

A Transmission Use of System (“TUOS”) Agreement with EirGrid is one of the conditions to accepting a connection offer.

The TUOS Agreement is a standard form agreement which sets out the terms and conditions upon which EirGrid permits the User to use the ESB Transmission System. Under the TUOS Agreement, EirGrid agree to the User being provided with the use of the ESB Transmission System at the Network Connection Points. The User in turn agrees to pay the generation related Generation Transmission Service TUOS Charges under a specified tariff schedule. TUOS Tariffs are revised annually. The General Conditions of Connection and Transmission Use of System are incorporated into the TUOS Agreement.

(d) Planning Permission

Planning permission will need to be secured for every renewable energy project in addition to any other consents required. The Department of Communications Energy and Natural Resources has no direct function in regard to the planning aspects of renewable energy developments. The grant of planning permission for these projects is a matter for the relevant local authority.

An applicant will need to apply to the relevant planning authority for the area in which the proposed development is to be situated with details of the proposed project and provide an Environmental Impact Statement, if required. There are some planning exemptions and restrictions for small scale renewable technologies and CHP structures available.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

Any person who wishes to construct or reconstruct a generator which is not greater in installed generating capacity of 1 MW are exempt from the need to apply for an authorization to construct or reconstruct a generating station and, are duly authorized

by the CER under Electricity Regulation Act 1999 (Section 16(3A)) Order 2008 (S.I. 383/2008).

INCENTIVES

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

(a) *Employment Investment Incentive Scheme*

The Employment Investment Incentive ("EII") is a tax relief incentive that allows investors to obtain income tax relief on investments made, in each tax year, into EII certified qualifying companies. The EII scheme has replaced the previous Business Expansion Scheme ("BES"). Investments in renewable energy companies qualify for EII/BES relief. EII relief enables investors to deduct the cost of their qualifying investment from their total income for income tax purposes and is given at the claimant's marginal rate of income tax. Securing EII/BES status therefore enhances the ability of eligible companies to attract outside investment.

(b) *Research and Development ("R&D") Grants*

R&D grants and capital grants are offered to support innovative domestic and commercial schemes using biofuels, CHP, large-scale wood heating systems and domestic renewable heat technologies.

Various funding programmes are offered through the SEAI. A fund is currently available to stimulate the development and deployment of ocean energy devices and systems.³ The emphasis is on industry-led projects for the following types of activities:

- industry-led projects to develop and test wave and tidal energy capture devices and systems;
 - independent monitoring of projects / technologies;
 - industry-led R&D aimed at the integration of ocean energy into the electricity market and the national electricity grid (and network);
 - data monitoring, forecasting, communications and control of OE systems; and
 - specific industry-led research projects carried out by research centres, third level institutions and centres of excellence with a high level of expertise in the relevant area.
- ### 8. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

There is no purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies. However, the 1999 Act requires the Transmission System Operator to give priority dispatch into the SEM's mandatory gross pool, subject to system security considerations. Therefore, priority dispatch, coupled with a gross pool market, gives rise to an effective purchase guarantee, subject to constraints and curtailment. Renewable energy companies and qualifying hybrid plants have mandatory priority dispatch under EU law.

As noted above, the SEM is currently undergoing a market redesign process to bring the Irish market in line with the EU Target Model. One of the key design challenges is the high proportion of priority dispatch plant that will be operating on the island of Ireland by 2020.

³ Available at "<http://www.seai.ie/Grants/oceanenergy>"

A high level design paper published by the SEM Committee provides for unit-based participation for generation in the day-ahead and intraday markets, mandatory participation in the Balancing Mechanism after the day-ahead stage, as well as the introduction of a capacity remuneration mechanism.

It is intended that the revised market design will promote liquid and transparent trading arrangements accessible by market participants of all technologies and sizes. It is expected that the new market arrangements will be in place by the end of 2017.

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

The Renewable Energy Feed In Tariff ("REFIT")

While there is no minimum price guarantee under Irish legislation for electricity generated by renewable energy companies, Ireland has implemented a number of supplier compensation regimes for additional costs of renewable energy purchased, which are known as Renewable Energy Feed In Tariffs or REFIT. REFIT allows suppliers to contract with generators outside the SEM pool and provide a price floor in power purchase agreements reflecting the level of compensation available to the suppliers. These REFIT supported power purchase agreements operate to insulate renewable generators from fluctuations in the wholesale market price.

The first REFIT programme ("REFIT I") was opened by way of competition in 2006 by the Department of Communications, Energy and Natural Resources ("DCENR") to support the construction of new electricity generation plant powered by biomass, hydropower or wind energy. The REFIT I scheme was open for applications until 31 December 2009, and was subject to a quantitative limit which has now

been reached. Since that date no new applications have been accepted; although projects accepted into the scheme before that date, which were granted an extension of time to become operational, continue to be developed. The second REFIT programme⁴ ("REFIT II") and third REFIT programme⁵ ("REFIT III") are now open for applications. REFIT II provides support for electricity exported to the grid in the onshore wind, hydro and biomass landfill gas technology categories subject to a quantitative limit of 4000MW in total. The maximum size of an individual plant that may be accepted into REFIT II is 125MW. Plants above 125MW will require an individual state aid application to be submitted by DCENR to the European Commission.

REFIT III covers biomass technologies and is designed to incentivize the addition of 310MW of renewable electricity capacity. Of this, 150MW will be High Efficiency CHP (HE CHP), using both Anaerobic Digestion and the thermo-chemical conversion of solid biomass, while 160MW will be reserved for biomass combustion and biomass co-firing. REFIT III provides support for electricity exported to the grid subject to the following quantitative limits: Anaerobic Digestion (including AD CHP) 50MW; Biomass CHP 100MW; Biomass Combustion (including co-firing with peat) 1603VITW. The maximum size of an individual plant that may be accepted into REFIT III is 50MW. An exception to this rule applies to peat co-firing stations which may co-fire peat and biomass up to 30% of the capacity of the plant (up to a maximum of 50MW) in any single year. Plants above 50MW will require an individual state aid application to be submitted by DCENR to the European Commission.

⁴ A Competition for Electricity Generation - from Onshore Wind, Hydro and Biomass Landfill Gas Technologies 2010-20 IS.

⁵ A Competition for Electricity Generation from Biomass Technologies 2010-2015.

REFIT II projects must be built and operational by 31 December 2017. The support for any particular project cannot exceed 15 years and the support may not extend beyond 31 December 2032. In addition, applications to the REFIT II scheme will not be accepted after 31 December 2015. The wind sector has therefore been increasingly active in the last 12 months as developers seek to meet the REFIT II application deadline at the end of this year.

In order to participate in the REFIT Schemes, renewable generators must first be accepted by the DCENR in accordance with the relevant REFIT terms and conditions. Successful generators who receive a "letter of offer" are subsequently required to enter into a power purchase agreement ("PPA") with a supplier licensed by the CER. With the benefit of a REFIT letter of offer (the generator is the addressee although details of the supplier are subsequently notified to the DCENR), the supplier counterparty to a REFIT PPA is entitled to be reimbursed its "additional costs" in performing its "public service obligation" (the "PSO") to purchase the output from the new electricity generation plant. This PSO is imposed on licensed suppliers by way of statutory instrument. Where the additional costs to suppliers of purchases under REFIT PPAs exceed market incomes in the SEM suppliers are entitled to compensation from funds collected from all consumers of electricity through the PSO levy together with a balancing payment to compensate the supplier for the costs associated with balancing renewable electricity. The balancing payment for REFIT I is 15% of the reference price for large scale wind (indexed). The balancing payment for REFIT II and REFIT III is €9.90 MWh (not indexed), payable only to the extent that the market price does not exceed the applicable reference price.

REFIT Reference Prices indexed to 2014:⁶

a. REFIT I

The reference prices for REFIT I are:

- Large Wind category (above 5MW) – 69.72 euro per MWh;
- Small Wind category (equal to or less than 5MW)– 72.167 euro per MW;
- Hydro – 87.068 euro per MWh;
- Biomass Landfill Gas – 85.622 euro per MWh;
- Other Biomass – 87.068 euro per MWh.

b. REFIT II

The reference prices for REFIT II are:

- Onshore Wind (above 5MW) – 69.72 euro per MWh;
- Onshore Wind (equal to or less than 5MW) – 72.167 euro per MWh;
- Hydro – 87.068 euro per MWh;
- Biomass Landfill Gas – 85.622 euro per MWh.

c. REFIT III

The reference prices for REFIT III are:

- Biomass Combustion (non CHP):
 - ✓ For using Energy Crops – 99.822 euro per MWh;
 - ✓ For all other biomass – 89.314 euro per MWh;
- Biomass CHP units greater than 1500 kW – 125.091 euro per MWh;

⁶ Figures taken from Department of Communications, Energy and Natural Resources website at: <http://www.dcenr.gov.ie/Energy/Sustainable+and+Renewable+Energy+Division/REFIT.htm>

- Biomass CHP units less than or equal to 1500 kW – 147.106 euro per MWh;
- AD CHP greater than 500 kW – 136.598 euro per MWh;
- AD CHP unit less than or equal to 500 kW – 157.613 euro per MWh;
- AD (non-CHP) units greater than 500 kW – 105.076 euro per MWh;
- AD (non-CHP) units less than or equal to 500kW - 115.583 euro per MWh.

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

Ireland became a signatory of the Kyoto Protocol on 29 April 1998. The Protocol was ratified by Ireland on 31 May 2002 and came into force in Ireland on 16 February 2005.

Ireland, as an EU Member State, is required under the European Union Emissions Trading Scheme (EU ETS) to limit or cap the amount of greenhouse gases emitted by certain installations covered by the scheme. The relevant regulator in Ireland is the Environmental Protection Agency. Each Member State is required to put in place a national allocation plan in order to allocate allowances for each installation, which can then be bought and sold. The objective is to create scarcity and reduce overall emissions.

Ireland has also developed its own voluntary carbon exchange platform. The Irish Carbon Trading Platform (Cosain) was established in 2009 and enables installations and brokers to trade allowances online. Cosain also facilitates the trading of carbon credits (permitting the holder to emit one tonne of carbon dioxide) in voluntary offset markets.

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

Renewable energy power plants do not have priority connection to the grid, although priority connection for small scale generators below 5MW (see below) predominately benefit renewables (other than small scale wind).

Ireland has implemented a Third Party Access Regime under Sections 33, 34 and 34A of the 1999 Act. These Sections govern access to transmission and distribution systems and interconnectors as well as arrangements and agreements relating to the transmission system together with the Northern Ireland transmission system. Anyone may apply to EirGrid for connection to the transmission system and to ESB Networks Limited for connection to the distribution system. Offers are subject to the applicant becoming an eligible customer or obtaining a license or authorization.

The CER may issue directions to the Relevant System Operator specifying the terms of connection offers from time to time. The CER may give directions in relation to matters to be specified in a connection and/or use of system agreement; terms and conditions of a connection offer; respective proportions of costs to be borne by the Relevant System Operator and connecting parties; and time periods within which an offer must be made or a refusal notified.

The only circumstances in which the Relevant System Operator can refuse to make a connection offer to an applicant are set out in Section 34(4) of the 1999 Act and include where the CER is satisfied that it is not in the public interest; where it would result in a breach of the 1999 Act, the regulations made under the 1999 Act, the grid code or any condition of any license or authorization; or

where the applicant does not undertake to be bound by the terms of the grid code.

The holder of a license to transport electricity across and maintain an interconnector is required to offer interconnector access on the basis of published non-discriminatory terms which must be approved by the CER. The interconnector operator may refuse to enter into an agreement providing access where it can demonstrate to the CER that to do so would not be in the public interest or if doing so would involve the operator breaching the 1999 Act, regulations made under the Act and as the case may be, the grid code or distribution code or, its license or authorization. In practice, there has traditionally been a lack of capacity for parties seeking to connect to the transmission and distribution systems. The CER enjoys powers under Section 34(1) of the 1999 Act to issue directions relating to the terms for connections to the transmission and distribution system. Pursuant to those powers, the CER imposed until mid-2004 a moratorium on new wind farms. Since then, the CER has been implementing a group processing approach for the issue of connection offers by the Relevant System Operators under successive "Gates", but there remains a considerable backlog and delays. The issuance of offers for the Gate III process commenced in December 2009 and the issue of offers from the system operators continued until June 2011. All offers have now been issued under this Gate process.

In December 2011, the SEMC published a final decision in relation to treatment of curtailment in the SEM where the instantaneous penetration of wind exceeds 50% of system demand. However, following a number of industry submissions, the decision was partially withdrawn by the SEMC in March 2012. The decision outlined the preferred option for allocating curtailment in tie-break situations on a firm access quantity basis, i.e., giving preference to plant which had already obtained a firm access quantity (a grandfathering approach). This would mean existing plant

would have different rights to new plant. On 1 March 2013, the SEMC published its final decision, which provided that all wind generators should make a contribution on a pro-rata basis to address the fact that curtailment is a system-wide problem. This decision was largely welcomed by the industry as a fair alternative which provided much needed certainty to the market.

In 2009, the CER published a Decision Paper⁷ which details how small, renewable and low carbon generators that fulfil public interest criteria would be processed outside the Group Processing Approach (GPA). The public interest criteria include diversity of fuel mix, predictability and power system support, environmental benefits and research or innovation. The CER decision paper also sets out a list of pre-approved classes of technology for processing outside the GPA which include:

- Bioenergy;
- CHP;
- Autoproducers;
- Hydro;
- Ocean;
- Wave;
- Solar;
- Geothermal;
- Experimental/Emerging Technologies.

Renewable generators (<500kW) were previously all subject to the GPA, which is effectively a queue system. The current 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

⁷ CER/09/099

carried out. Only auto production wind sites, where the generator (up to 5MW) is installed on an industrial site to predominantly supply in-house demand, will be included in this new arrangement. Wind sites with a direct connection to the grid will not be included and will be subject to the full GPA. Non-wind renewable generator applicants with an MEC greater than 5 MW will also be processed outside of the GPA but interaction studies will be performed. If no interactions exist then they can proceed to be given a connection offer. If interactions do exist, then the CER will consider these on a case-by-case basis.

12. 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.

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

There are various incentives available to renewable energy generation companies. The tax and financial schemes have previously been discussed under section 6.

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

- changes to planning legislation with the potential to significantly expedite the planning process for wind farms with more than 50 turbines or an output greater than 100MW and publication of revised '*Wind Energy Development Guidelines for Planning Authorities*'; and

- the introduction of a biofuels obligation scheme, corporate investment in certain renewable energy projects and registration of hybrid electrical vehicles and flexible fuel vehicles.

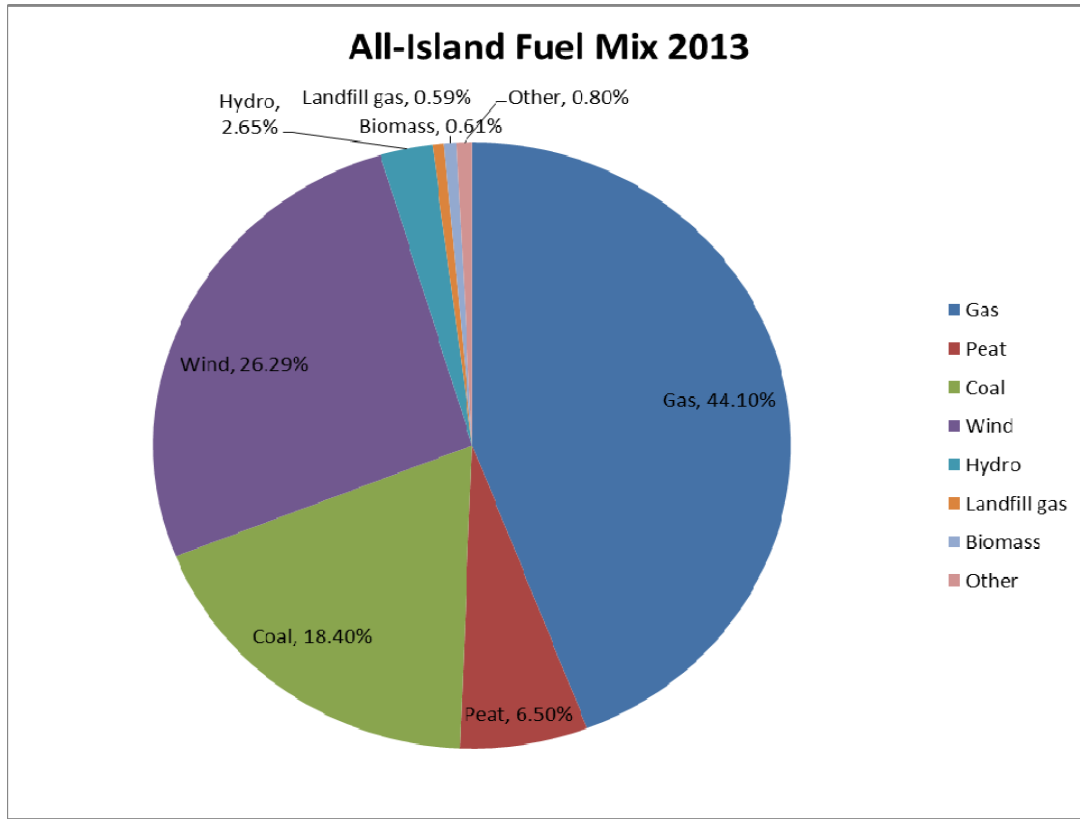
STATISTICS

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

In 2013, renewable energy sources contributed 20.9% of Ireland's electricity needs, with 16.5% of this figure arising from wind, 2.6% from hydro and 1.8% from other bioenergy sources, mainly biomass co-firing and landfill gas.⁸ The significant increase in electricity produced from wind (an increase from 10% of total generation in 2010) has allowed Ireland to reduce its dependency on imported fossil fuels. See Figure 1 for a breakdown of the fuel mix in Ireland in 2013.

⁸ SEAI report from February 2015 - Renewable Energy in Ireland 2013

Figure 1: Ireland Fuel Mix



2013⁹

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⁹ CER/14/297

ITALY



Prof. Avv. Aristide
Police



Avv. Umberto
Penco Salvi

CLIFFORD CHANCE

GENERAL

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

1.1. *A country full of renewable sources*

Italy's energy industry – the importance of which is constantly and rapidly increasing – is essential for satisfying Italian residential and business energy needs. However, Italy and its economy have always been and still are disadvantaged by the fact that Italy is an importer of energy sources, especially of fossil fuels (i.e., oil and natural gas).

Italy's strong dependence on the import of raw materials such as oil and natural gas from non-EU countries, as well as of further amounts of already-produced electricity from nearby EU-countries, the decision to stop nuclear power and Italy's availability of large potential of renewable resources¹, have led to

¹ Italy has a vast expanse of coast, both in the mainland and on the islands (total of 7,468 Km) for the potential installation and exploitation of wind power plants, a wealth of water and stretches of steep slopes for hydroelectric exploitation, a sunny Mediterranean climate in the south for the exploitation of solar energy and extensive lands which may be irrigated and mechanized for production of biomass.

use of renewable energy sources to constantly gain increasing strategic and economic importance. Consistently, the Italian government has passed, over several years, a series of laws and regulations (the majority of which, in order to implement EU directives), by means of which strong mechanisms of incentives for the use of renewable energy sources have been offered to investors.

More specifically, during the past decade, the Italian government has been implementing a series of laws and regulation which may be divided into two main areas: one regarding the photovoltaic sector (i.e., feed-in tariffs – so called "*Conto Energia*"), and the other regarding all the other renewable sources, including on- and off-shore wind-farms, biomass, biogas and wind power plants (i.e., Green certificates – so called Renewable Energy Certificates (RECs)).

1.2. *Market trends*

During the past years, such regulatory framework has created a dynamic market, attractive for both domestic and foreign capital, especially with respect to photovoltaic, wind and biomass energy sources. However, the economic crisis of recent years has led the Italian government to

adopt quite severe spending review programmes, pursuant to which specific measures aimed at reducing the impact of the incentives on Italy's public accounts have also been introduced. Indeed, in 2012 the reforms introduced to the applicable laws and regulations generally reduced the amount of incentives made available to renewable energy operators, while rendering more complicated the administrative procedures to be admitted to receive the incentive tariffs, thus limiting the number of plants admitted to the new incentive systems and decreasing the profitability of the new investments made.

No incentive system is currently available in Italy for new photovoltaic plants that have started operations following the expiration of the *Fifth Conto Energia* (which was the latest incentive scheme available with respect to the photovoltaic sector – see Paragraph 13.1) on 6 July 2013. Therefore only photovoltaic plants that, as of 6 July 2013, were already admitted to receive incentives under either the *Fifth Conto Energia* or the previous *Conto Energia* programmes continue to receive incentive according to the respective incentive scheme.

In addition, in the last two years several measures have been adopted in Italy amending the legislative framework governing incentives for renewable energy sources with the aim to reduce the costs of renewable energy charged to final consumers in the electricity bill including in particular (i) the provisions relating to the "voluntary" extension of incentives for renewable energy sources (other than photovoltaic plants) introduced by the so called "*Destinazione Italia*" Decree at the beginning of 2014 (see Paragraph 13.2) and (ii) the provisions affecting solar energy incentives already granted to photovoltaic plants introduced by the so called "*Spalma incentivi*" Decree in August 2014 (see Paragraph 13.1).

Despite this continuously evolving, complex legal framework which is causing uncertainty in

the market, opportunities for investors still exist, mainly because the plants that are already operating, and that receive incentives, are good prospects for acquisition by new operators that wish to access the market or by existing operators who wish to consolidate their market position.

Therefore, in the years to come, we will witness the growth of a florid secondary market, which will lead to a concentration of plants in the hands of a few qualified operators.

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

Renewable energy sources ("RES") are defined by the relevant applicable law² as "*the renewable non-fossil energy sources (including wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases sources)*".

Furthermore, the electricity produced from RES is defined by the relevant applicable law³ as "*the electricity produced by plants that are powered exclusively by RES, the portion of electricity produced from RES in hybrid plants that also use conventional energy sources, as well as the renewable electricity used for filling storage systems, but excluding electricity produced as a result of storage systems*".

² In Italy, the definition of renewable energy is set forth in Article 2, paragraph 1(a), of Legislative Decree 29 December 2003, No. 387 ("LD 387/2003"). LD 387/2003 implemented in Italy Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from RES in the internal electricity market, and currently reflects the same definition of renewable energy given therein. Notwithstanding the repeal of Directive 2001/77/EC by Directive 2009/28/EC, the definition of renewable energy given in LD 387/2003 is still valid and complies with Directive 2009/28/EC.

³ LD 387/2003, Article 2, paragraph 1(f).

REGULATION

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

The renewable energy sector is mainly regulated at the national level by general provisions which implement EU directives. At the local level, the renewable energy sector is regulated by Regional provisions, which have to comply with the national laws.

Some of the principal laws and regulations currently in force in Italy at the national level are listed below:

- Legislative Decree No. 79 of 16 March 1999 ("LD 79/1999") implementing EU Electricity Directive No. 92 of 19 December 1996, which was the first main step towards the liberalization of the electricity market;
- LD 387/2003, implementing Directive 2001/77 on the promotion of electricity produced from RES in the internal electricity market;
- Law No. 239 of 23 August 2004, which outlined a radical reform of electricity regulation in Italy, transforming the sector from a public monopoly to a free competition regime;
- Ministerial Decree No. 25336 of February 2007 ("MD 25336"), approving the criteria and procedures for supporting production of electricity by photovoltaic conversion of the solar source;
- Ministerial Decree dated 21 December 2007, introducing the system of Green Certificates;
- Law No. 244 of 24 December 2007 ("Budget Law 2008"), which created several tax advantages and introduced changes in the regime of the incentives granted for production of electricity from RES;
- Ministerial Decree of 11 April 2008 ("MD 11/04/2008"), approving the criteria and procedures for supporting production of electricity from the sun through thermodynamic cycles;
- Ministerial Decree dated 18 December 2008 ("MD 18/12/2008"), approving the criteria and procedures for supporting electricity generation from RES;
- Legislative Decree No. 28 of 3 March 2011 ("LD 28/2011"), implementing EU Directive 2009/28, which aims to achieve the objectives set out for 2020 on the overall share of renewable sources for each EU state;
- Law No. 27 of 24 March 2012 ("LD 27/2012"), which modifies Legislative Decree No. 1 of 24 January 2012 ("LD 1/2012") and aims to facilitate access to the renewable energies market;
- Ministerial Decree 5 July 2012 (the "Fifth Conto Energia"), implementing Legislative Decree No. 28 of 3 March 2011 and relating to photovoltaic plants;
- Ministerial Decree 6 July 2012 (the "RES Decree"), implementing Legislative Decree No. 28 of 3 March 2011, and relating to the new incentive system for on-shore and off-shore wind farms, biomass, biogas plants and all renewable energy sources other than photovoltaic;
- Law Decree No. 145 of 23 December 2013 as converted into law by Law No. 9 of 21 February 2014 (the so called "*Destinazione Italia*" Decree) relating to the minimum

guaranteed prices and voluntary extension of incentives for renewable energy sources;

- Law Decree No. 91 of 24 June 2014 as converted into law by Law No. 116 of 11 August 2014 (the so called "*Spalma incentivi*" Decree) affecting solar energy incentives already granted to photovoltaic plants under the various Conto Energia programs;
- AEEG Resolution No. 280 of 6 November 2007, as subsequently amended, governing the procedures and economic terms and conditions for the purchase of electricity;
- AEEG Resolution No. 99 of 23 July 2008, as subsequently amended, governing the procedure for the interconnection of power plants to the power grid; and
- AEEG Resolution No. 123 of 16 September 2008, as subsequently amended, governing the disputes among the project owners and the grid operators.

At the regional level, each Region in Italy is entitled to enact regional laws and regulations governing, inter alia (i) the authorization procedure for the construction and operation of plants fuelled by RES and (ii) the authorization procedure for the construction of the electrical lines to connect such plants to the power grid. The provisions enacted by the Regions, however, must comply with the general principles set forth by the national legislation.

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

The principal regulatory bodies in the renewable energy sector are (i) the Italian Ministry for the Economic Development, (ii) the Italian energy regulator (*Autorità per l'Energia il Gas e il Sistema Idrico* – the "AEEG"), (iii) the Gestore Servizi Energetici S.p.A. (the state-run entity in charge of the implementation of incentive systems to

promote the use of RES – the "GSE"), and (iv) the Gestore dei Mercati Energetici S.p.A. (the "GME").

- The Italian Ministry for Economic Development is responsible for a wide variety of policies, including economic development and cohesion, as well as incentives for sectors such as energy and mineral resources, telecommunications, internationalization and business.
- The AEEG is an independent body that regulates, controls and monitors the electricity and gas markets and water services in Italy. The AEEG's role and purpose is to protect the interests of users and consumers, to promote competition and to ensure efficient, cost-effective and profitable nationwide services with satisfactory quality levels. To this end, the AEEG defines and maintains a reliable and transparent tariff system, promotes environmental protection and the efficient use of resources and sets forth observations and recommendations to the Government and to the Parliament on matters of energy.
- The GSE is a publicly-owned company promoting and supporting the use of RES in Italy and energy efficiency. The GSE manages support schemes for RES and monitors compliance with the relevant incentive programmes.
- The GME is a company established by the "Gestore della Rete di Trasmissione Nazionale S.p.A." (that now is the GSE) with the mission of organizing and economically managing the Italian Electricity Market. As part of the organization and economic management of the Electricity Market, the GME is also vested with organizing the trading of, and the market for, Green Certificates (i.e., certificates giving evidence of electricity generation from RES), Energy Efficiency

Certificates (the so-called "White Certificates", giving evidence of the implementation of energy-saving policies) and Emissions Allowances or Units.

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

There are two main sets of permits and licenses that are required under Italian laws and regulations in order to construct and operate renewable energy projects. One set of permits regards the construction and operation of the plant itself, whereas the other set of permits is related to the construction of the interconnection facilities of the plant to the national and the local transmission grids, which are needed in order to sell the electricity produced by the plant.

5.1. The main permits/licenses required for the construction and operation of renewable energy plants

a) *The environmental impact assessment*

The first authorization procedure that a project developer needs to undergo in order to commence the construction of a renewable energy plant is an environmental impact assessment (*valutazione di impatto ambientale*, "VIA"), which is an environmental assessment carried out by the appropriate authority (generally the Province, Region or the Ministry of the Environment) to evaluate the foreseeable impact of a project on the surrounding environment.

However, certain categories of projects benefit from a two-step assessment procedure, which includes a pre-screening assessment (*verifica di assoggettabilità*), the outcome of which is used to determine whether a VIA will be necessary.

The pre-screening assessment is a preliminary, streamlined assessment of the impact that a project may have on the environment; when the pre-screening assessment has a negative outcome, the project is required to undergo a VIA procedure, which is a further and more detailed assessment.

The national legislation exempts certain projects from the construction and operation of plants for the generation of electricity from the requirement to undergo pre-screening. These exempted plants include plants that produce electric power from renewable sources of energy with a maximum installed capacity not higher than a specific threshold, which has changed over the years.

Construction projects to be realized within certain areas of high value in terms of landscape and environmental value because of the presence of specific flora or fauna must undergo an additional assessment (called the "environmental incidence assessment") (*valutazione di incidenza ambientale*).

b) *The Single Authorization*

Since 2004, an authorization named "single authorization" (*autorizzazione unica*) (the "AU") is required to construct and operate renewable energy plants and the related interconnection facilities. Renewable energy plants with an installed capacity below certain levels, however, are exempt from the single authorization requirement and benefit from a simplified "deemed consent" authorization procedure (see subparagraph c) below).

Applications for AUs must be submitted to the Region, or to the Province, where the plant is to be located (in accordance with regional law), which is required to call a conference of authorities called "*Conferenza di Servizi*" ("Conference of Authorities"). All the public entities interested in the project, such as the Province, the Municipality, the competent grid

operator and any other public authority responsible for specific matters within the territory (e.g., landscape, seismic, or hydro-geological matters) must be asked to participate in the Conference of Authorities and to render their respective opinions on whether the project may be authorized.

The Conference of Authorities must be called within 30 days (non-mandatory term) from the date an application for the AU is received and the authorities are mandated to complete their evaluation of an application for a single authorization within a maximum term of 90 days (if no VIA is required), or 90 days plus 150 days for the VIA (if a VIA is required).

Certain minor variations from the project are permissible without requests for further single authorizations, although variations that are deemed material must be approved, following a request from the holder of the single authorization.

c) Simplified authorisation procedures

Projects for the construction of renewable energy plants with a capacity of up to certain thresholds (e.g., 20 kW for photovoltaic plants and 60 kW for wind plants) have the benefit of a simplified authorization procedure (thus, not needing to undergo the AU procedure).

To benefit from this procedure, project owners are required to file a so-called *Denuncia di Inizio Attività* ("DIA") with the Municipality where the project is to be developed. If the Municipality does not object to the DIA within 30 days from the date the DIA is filed in complete form (i.e., with all required accompanying documents), the relevant project is deemed to have been authorized.

In addition, if the project is to be developed within an area that is subject to specific restrictions (e.g., landscape or environmental restrictions) monitored by authorities other

than the Municipality (e.g., the Region, the Province or a State entity), then the DIA submission will be suspended until these additional authorities have issued a favourable opinion in relation to the project.

The DIA is valid for three years; if the construction works described in the DIA are not completed within three years, a new DIA must be filed for the remaining part of the works.

Subsequent to the introduction of the DIA, further legislative provisions have been enacted to simplify the authorization procedures for certain categories of renewable energy plants. These provisions include Article 11, paragraph 3, of Legislative Decree No. 115 of 30 May 2008, which states that construction works to increase the energy efficiency of buildings consisting in the installation of photovoltaic plants integrated into the roof, having the same slope and surface of the roof and whose components do not affect the shape of the buildings are considered extraordinary maintenance works and are exempt from the DIA requirement. These works can be carried out subject to prior notification to be sent to the Municipality.

Additional provisions to simplify the authorization procedures for renewable energy plants have been introduced by the Ministry of Economic Development Guidelines, pursuant to which renewable energy plants that can start construction subject only to the DIA procedure or to mere notification of commencement of the works, are subject to a simplified authorization procedure denominated simplified allowing procedure (*Procedura Abilitativa Semplificata*), which is in any case substantially equivalent to the DIA procedure.

5.2. The main permits/licenses required for the construction and operation of the interconnection facilities of renewable energy plants to the power grids

Under Italian law, the energy produced by renewable energy plants has interconnection and dispatch priority. Moreover, the operator of the national transmission grid (i.e., Terna S.p.A., hereinafter "Terna") and the operators of the local distribution grids (e.g., Enel Distribuzione S.p.A., hereinafter "Enel") have the obligation to interconnect to the local grids they operate every plant that so requests.

The AEEG has the responsibility to enact guidelines setting out the technical and economic terms at which grid operators must provide the interconnection. The procedure for the interconnection of power plants to the power grid is governed by Resolution No. ARG/elt 99/08, as amended (the "TICA").

The TICA

Under the TICA, the request to be interconnected to the power grid must be filed with either (i) the operator of the local distribution grid (e.g., Enel), if the injection power requested is below 10,000 kW, or (ii) Terna, if the injection power requested is equal to or more than 10,000 kW.

The procedure to connect energy plants to the power grid with BT/MT voltage pursuant to the TICA can be divided into the following main steps:

i. Application and issuance of the estimate for the interconnection

The requests for interconnection must be drafted in compliance with a standard form that Terna and the distribution grid operators are required to prepare and make available to the operators. Upon receipt of an application, the competent grid operator must submit to

the applicant an estimate for the interconnection, which must include a description of the work that must be carried out to grant the interconnection, the related costs and time for the completion of the work.

ii. Acceptance of the estimate for the interconnection

The estimate for the interconnection is valid for 45 business days. Within this term, the applicant must send written acceptance of the estimate to the grid operator or the estimate becomes invalid.

iii. Authorisation for the construction of the electrical lines

Once the estimate for the interconnection has been accepted, either the grid operator or the plant operator (at the plant operator's choice) must request the necessary authorisation to carry out the interconnection works set out in the estimate for the interconnection.

iv. Realisation of the connection works

The construction works regarding the interconnection facilities may be carried out either by the plant operator itself or by the grid operator, at the plant operator's choice.

If the plant operator wants to carry out the connection works itself, it is required to specify this in the acceptance of the estimate for the interconnection. In this case, the plant operator is not required to pay the costs for the interconnection to the grid operator.

Following the issuance of the authorisation, the plant operator is required to send to the grid operator the executive projects of the interconnection facilities to obtain its favourable opinion. The plant operator is required to notify the grid operator of the completion of the interconnection works in order to allow the grid operator to test the interconnection facilities (at the plant operator's costs) and accept them.

The interconnection facilities must then, in any case, be transferred to the grid operator.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

There are no categories of “license-exempt generation” in Italy.

INCENTIVES

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

Italy's mechanisms of incentives for the utilization of RES are not primarily based on the granting of tax advantages to the operators. Instead (as described in Paragraph 13 below), the incentive systems created throughout the years by the Italian government are essentially based on the granting of feed-in tariffs (*Conto Energia*) for a predetermined period of time to operators of photovoltaic plants, and on the assignation of Green Certificates (also called Renewable Energy Certificates ("RECs")) in proportion to, *inter alia*, the renewable electricity generated, to operators of renewable energy plants (other than photovoltaic plants)⁴.

Despite the above, the Italian regulatory framework still provides for some tax advantages with respect to investments relating to RES. In particular, it provides that:

- a) transactions taxes and the tax regime to be applied to the sale/purchase of the land on which to install a plant fuelled by RES depend on a number of factors, the most important one being the classification of the land at the time of the sale. In case the land is classified for agricultural use, no

⁴ The RECs system will however been abolished starting from 1 January 2016, and a transitional period (going from 2012 to 2015) has been set out in the RES Decree (see Paragraph 12.2(b)).

value added tax (“VAT”) shall apply to the transfer, but the sale would be subject to registration tax at the rate of 12%, plus mortgage and cadastral taxes at the aggregate rate of 3%. However, in the case of a transfer of non-agricultural land, if the seller is deemed to be a VAT person, the transaction is subject to VAT at the ordinary rate (currently 22%), plus mortgage and cadastral taxes at the aggregate rate of 3%, no registration tax should apply;

- b) VAT on the purchase and construction of plants fuelled by RES is generally applied at a reduced 10% rate (rather than at the ordinary 22% rate), plus mortgage and cadastral taxes at the aggregate rate of 4%, while VAT on the purchase of RECs is applied at the ordinary 22% rate; and
- c) The VAT regime applicable on the special public tariffs granted by the GSE depends on the types of such subsidies/tariffs.

The tariffs described in point c) above are subject to the Italian corporate income tax (currently, at 27.5% rate) and to the Italian regional tax on business activities at 3.9% ordinary rate, each Region can vary the latter rate by an additional percentage up to 0.92%.

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

The electricity produced from RES may be sold either on the market through privately negotiated transactions or on the electric power exchange⁵.

⁵ Sales through privately negotiated agreements are governed by contracts between the sellers and the purchasers. Sales on the electric power exchange are subject to the rules and regulations of the electric power exchange and accessible only to those parties that have been certified as operators on the exchange. Operators on the exchange are required to pay fees to the GME.

However, the Italian laws and regulations regarding the RES sector provide for the following mechanisms, which guarantee the purchase of the electricity produced without the need for the operators of the plants to offer the energy on the market:

a) *Mandatory purchase regime* ("ritiro dedicato")

Italian legislation grants to producers of electricity (i) from intermittent renewable sources of energy (including, therefore, electricity from solar and wind plants); or (ii) from other sources (in this case for up to a nominal power of 10 MW), the option to sell the electricity produced under the mandatory purchase regime (*ritiro dedicato*)⁶, rather than on the market. Under the mandatory purchase regime, the GSE must withdraw and purchase all the energy produced by a plant, net of any energy used for in-plant consumption, in accordance with the terms and conditions that are set forth by an agreement which is entered into by and between the GSE and the producer⁷. Recent amendments to the applicable legislation authorise the GSE to transfer part of the costs deriving from the management of the mandatory purchase regime to producers trying to incentivise a greater attention by the producer of forecasted injection. In particular, GSE will charge the producers: (i) the imbalancing costs, which will be calculated on the basis of a specific formula; and (ii) certain additional administrative costs. In exchange for the electricity withdrawn, the GSE then pays to the producer, on a monthly

⁶ The mandatory purchase regime has been governed by AEEG Resolution No. 280/2007 since 1 January 2008. Such mechanism can only be activated upon request of the producer, by way of request to participate in the mandatory purchase regime to be filed with the GSE.

⁷ Such agreement is executed in compliance with a standard form, has a term of one calendar year, and can be tacitly renewed. The producer, however, can withdraw from the agreement at any time, by giving 60 days' written notice to the GSE via registered mail.

basis, the "hourly zone price", which derives from the prices registered in open trading on the electricity exchange.

b) *Net metering service* ("scambio sul posto")

Under the net metering service (*scambio sul posto*), producers/users at small power plants (up to 200 kW) may feed into the grid all the electricity generated and not immediately consumed and take-in electricity as needed at a different time.

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

The guarantee of the payment of a minimum price was a peculiarity of the mandatory purchase regime (*ritiro dedicato*), and it was reserved to renewable energy plants with a capacity of up to 1 MW and limited to the first 2 GWh of electricity produced per year.

However, the Destinazione Italia Decree in substance removed the minimum guaranteed prices under the mandatory purchase regime (*ritiro dedicato*), providing that, starting from 1 January 2014, the minimum guaranteed prices for renewable energy plants that benefit from other incentives mechanisms (the cost of which is charged as part of electricity costs) will be equal to the hourly zone price.

The only renewable energy plants which will still benefit from minimum guaranteed prices are photovoltaic plants with capacity up to 100 kW and hydroelectric plants with capacity up to 500 kW. These minimum guaranteed prices are updated from time to time by the AEEG.

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

Italy has ratified the Kyoto Protocol with Law No. 120 of 2002 and the system came into

force on 16 February 2005, when the European Union introduced the "EU Emission Trading System" (the so called "EU ETS"), which is based on a "cap and trade" mechanism

In particular, such system has been implemented in Italy in accordance with Directive 2003/87/CE, with Legislative Decree No. 216 of 2006 and with Legislative Decree No. 30 of 2013. Both these Decrees have been issued in order to improve those measures firstly identified and set forth in Law No. 120 of 2002.

Under the system which is currently in force, the Italian government – under European Commission supervision – must set a limit of the emission levels allowed for every company emitting carbon dioxide, granting to each of such companies an equivalent number of carbon credits for free.

Should these companies emit carbon dioxide in a measure which is lower than the level which they would be entitled to emit under the EU ETS system and in relation to which they have been granted a certain number of carbon credits, then these companies may sell to other companies a number of carbon credits equivalent to those which have not been used.

Conversely, those companies which emit carbon dioxide in a measure which is higher than the level which they would be entitled to emit under the EU ETS system need to purchase additional carbon credits (on top of those which had already been granted to them by the government) from companies which have extra carbon credits available, up to the amount needed to cover the extra carbon dioxide emitted.

In this way, a mechanism of supply and demand of carbon is created and companies are encouraged to invest in machineries and production procedures which would lead to lower carbon dioxide emissions.

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

Renewable energy plants have interconnection priority and must be connected to the grid without delay.

a) Interconnection priority

Under Legislative Decree No. 79 of 16 March 1999 ("LD 79/1999"), the energy produced by renewable energy plants has dispatch priority over plants fuelled by non-renewable energy sources. This means that the transmission grid operator must give priority to plants fuelled by RES to inject the generated energy into the network, in the event that the national energy system becomes congested.

Notwithstanding the above, the dispatching priority must be balanced against the necessity to ensure the safety of the electric system and, therefore, also the production of electricity produced by RES may be subject to restrictions/interruptions.

b) Delays of interconnection to the grid

The grid operator has the duty to allow interconnection within specific terms. In case of delays, the RES producers may reserve the right to start legal proceedings against the grid operator, filing a claim with the AEEG according to AEEG Resolution No. 123/08. If the claim is approved, the grid operator will have to pay to the company (i) an amount of money as reimbursement of all expenses related to the interconnection procedure; and (ii) an amount of money as compensation for the delay in the interconnection procedure, without prejudice to compensation for any greater damages that may be suffered.

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

As of today, Italian law does not provide for any monetary incentives for local manufacturing of equipment or materials used in the construction of renewable energy plants. However, alternative and "indirect" incentives are sometimes provided as part of the applicable incentive systems (for example, under the Fifth Conto Energia a "premium" tariff was provided to photovoltaic plants built with components and materials made in the European Union).

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

13.1. The incentive system for photovoltaic plants –feed-in tariffs

a) The "Conto Energia" programmes

In Italy, an incentive tariff mechanism known as "Conto Energia" has been available for photovoltaic plants since 2005. This incentive system grants incentives to a plant for twenty years starting from the date the plant starts operations. The incentives are paid by the GSE.

Following the GSE's issue and notification to the applicant of its resolution admitting the plant to the incentive system, the applicant and the GSE must enter into by an agreement, to set forth the terms and conditions governing the granting of the incentives (the "Incentive Tariff Agreement"). The GSE will start to pay the applicable incentives after execution of the Incentive Tariff Agreement.

Over the last years the "Conto Energia" system has been governed by five different regulations:

- the "First Conto Energia" governed by Ministerial Decree No. 18908 of 28 July 2005 as amended by Ministerial Decree No. 20988 of 6 February 2006. The First Conto Energia currently remains in effect only for projects that were admitted to benefit from this system in or before 2006;
- the "Second Conto Energia" governed by Ministerial Decree No. 25336 of 19 February 2007;
- the "Third Conto Energia" governed by Ministerial Decree of 6 August 2010;
- the "Fourth Conto Energia" governed by Ministerial Decree of 6 August 2010;
- the "Fifth Conto Energia" governed by Ministerial Decree of 5 July 2012⁸.

No incentive system is currently available in Italy for new photovoltaic plants that have started operations following the expiration of the *Fifth Conto Energia* on 6 July 2013.

Therefore, only photovoltaic plants that, as of 6 July 2013, were already admitted to receive incentives under either the *Fifth Conto Energia* or the previous *Conto Energia* programmes continue receive incentive according to the respective incentive scheme.

b) Recent changes affecting the applicable incentive under the Conto Energia introduced by Law Decree 91/2014

Pursuant to Law Decree No. 91 of 24 June 2014 as converted into law by Law No. 116 of 11 August 2014 (the so called "*Spalma incentivi*" Decree, hereinafter "Law Decree 91/2014"),

⁸ The incentives available under the Fifth Conto Energia are alternative to, and cannot be cumulated with, the benefits deriving from (i) the mandatory purchase mechanism (*ritiro dedicato*) and (ii) the net metering service (*scambio sul posto*) (see Paragraph 8(a) and 8(b) above).

starting from 1 January 2015 the incentive payments to photovoltaic plants with capacity in excess of 200kW that have been granted under the various Conto Energia programmes are changed, in accordance with one of the following options which the plant operators must have notified to the GSE within 30 November 2014:

- "Option (a)" which provides for an extension of the length of the incentive period over a 24-year span (rather than the previously agreed 20-year span) with a consequent reduction of the incentives payable monthly by a percentage ranging from 25% to 17%, depending on the date of expiry of the original incentive period;
- "Option (b)" which provides for partially deferred payment of the incentives, retaining the previously agreed 20-year span (i.e., the incentive to be paid will be reduced by a pre-defined percentage for a first period, while towards the end of the incentive period the incentive to be paid will be increased by that same percentage);
- "Option (c)" which provides for a reduction of the incentives for the remainder of the incentive period, retaining the previously agreed 20-year span, by the following percentages depending on the installed capacity of the plant:
 - ✓ 6% for plants with capacity in excess of 200kW and up to 500 kW;
 - ✓ 7% for plants with capacity in excess of 500kW and up to 900 kW; and
 - ✓ 8% for plants with capacity in excess of 900kW.

Option (c) is the option automatically applied by the GSE to operators who have failed to validly notify the GSE of their selection on or before 30 November 2014.

In addition to the foregoing, Law Decree 91/2014 also includes provisions affecting the terms for the payment by the GSE of the incentives granted to solar plants and requiring energy producers to pay new contributions to the GSE to cover the administrative costs of the incentive programmes.

13.2. The incentive system for the renewable energy plants (other than the photovoltaic sector) – Green Certificates and Feed-in Tariffs / Feed-in Premiums

a) Green Certificates

Since 1999, for renewable energy plants (other than photovoltaic plants) an incentive system has been available which provides that each qualifying plant shall be assigned a certain number of green certificates (also called Renewable Energy Certificates – RECs)⁹, proportionally to the renewable electricity generated multiplied by a variable factor which depends on the type of renewable energy source used to fuel the plant.

Green Certificates are tradable certificates issued by the GSE representing electricity generated by plants fuelled by renewable sources and, therefore, represent the environmental value of generated renewable energy.

Plants are eligible to receive RECs for a period ranging from a minimum of 8 years to a maximum of 15 years, depending on a series of conditions, including the renewable energy source used to fuel the plants and the year in which the plants were commissioned.

⁹ It shall be noted that RECs are not cumulative with the other forms of support; i.e., national, regional, local or EU support in the form of feed-in schemes, grants or loans with advanced capitalization.

Producers of electricity from renewable sources gain economic benefits from their Green Certificates, because these may be traded as bearer certificates separately from the electricity to which they were associated.

It follows that producers using renewable sources may assign their electricity production in accordance with the current legislation, and, at the same time, sell their Green Certificates separately (i) on the energy exchange, which is a market for the trading of electricity organised and supervised by GME, (ii) outside such market under private purchase agreements entered into between seller and purchaser, or (iii) to the GSE which is obliged to purchase any unsold green certificates at fixed price.

b) The RES Decree - Feed-in Tariffs and Feed-in Premiums mechanism

A new incentive system for renewable energy plants other than photovoltaic (including on-shore and off-shore wind farms, biomass and biogas plants) has been introduced by Ministerial Decree 6 July 2012, implementing Legislative Decree No. 28 of 3 March 2011, which became effective as from 11 July 2012 (the "RES Decree").

The RES Decree is gradually replacing the green certificates (RECs) incentive system (which will be completely abolished starting from 1 January 2016), providing however for a transitional period from 2012 to 2015, during which the green certificate system will continue to apply to (i) plants that are currently benefitting from the actual regime; (ii) new plants that started operations on or before 31 December 2012; and (iii) new plants that started operations on or before 30 April 2013 and were authorized before 11 July 2012.

The RES Decree creates an incentive system for all renewable energy plants other than photovoltaic plants with a capacity above 1 kW commissioned after 31 December 2012

either for the first time or following repowering or total or partial refitting.

The new incentive system provides the following:

- i. admitted plants with capacity of up to 1 MW will receive payment of an all-inclusive feed-in tariff ("FiT"), to serve both as compensation for the sale of the electricity produced, which will be withdrawn by the GSE, and as the incentive for using renewable sources;
- ii. admitted plants with a capacity of more than 1 MW will receive payment of a feed-in premium ("FiP"), as incentive, and will be able to sell the electricity produced on the electricity stock exchange or by contract.

The RES Decree sets out the base amounts of the FiT and FiP, to be paid by the GSE in relation to each type and capacity of the plants that begins operations through 2015, from the commissioning date throughout a period of time equal to the pre-defined expected average lifetime (ranging from 15 to 30 years, depending on the type of power source, with 20 years being the most prevalent expected average lifetime, applicable to on-shore wind-powered plants, biomass and biogas plants).

The incentive systems set forth by the RES Decree, however, are alternative to, and cannot be cumulated with, the benefits deriving from (i) the mandatory purchase mechanism (*ritiro dedicato*) and (ii) the net metering service (*scambio sul posto*) (see Paragraph 8.2 (a) and (b) above).

The RES Decree allows admission to the new incentive tariffs to:

- i. micro plants (which may range from maximum capacity of 50 kW for certain hydro-power plants to 200 kW for biomass plants), by means of automatic admission;

- ii. small plants (20 MW for geo-thermoelectric plants, 10 MW for hydro-power plants and 5 MW for all other renewable sources, excluding photovoltaic), by means of a registration admission process;
- iii. large plants (with a capacity above the applicable thresholds in paragraph (ii) above), admitted to the incentive system on the basis of reverse auction, where operators will bid on the amount of the incentive to be paid to the plant, starting from the pre-defined base amount.

For each renewable source, the RES Decree sets out how the new plants to be admitted to the incentive system (up to the applicable cap) will be selected, as well as the different annual caps on the overall capacity that can receive the incentives for the period from 2013 through 2015.

In addition to the caps on overall capacity, the RES Decree sets an annual aggregate spending cap of Euro 5.8 billion for all types of renewable plants other than photovoltaic plants.

The RES Decree set outs the annual cap and the relevant registration admission process and bid only for the period from 2013 through 2015 and, therefore, no further registration admission process or bid are available until a new ministerial decree amending the RES Decree will be issued.

In May 2015, the Italian Minister for the Economic Development, announced that the government would soon release a new ministerial decree which will regulate registration admission process and bid for the access to incentives until the earlier of (i) 31 December 2016, and (ii) the annual aggregate spending cap of Euro 5.8 billion is reached.

c) *The "voluntary" extension of incentives for renewable energy plants (other photovoltaic plants)*

Law Decree No. 145 of 23 December 2013 as converted into law by Law No. 9 of 21 February 2014 (the so called "*Destinazione Italia*" Decree, hereinafter "Law Decree 145/2013"), in addition to removing the minimum guaranteed prices under the mandatory purchase regime (*ritiro dedicato*) for a great part of those plants which could benefit from such incentive (see Paragraph 8), introduced the requirement for energy producers from renewable energy sources (other than photovoltaic plant) which benefit from green certificates or all inclusive tariffs (*tariffe onnicomprensive*), to choose between the following two alternatives:

- i. Continue to receive incentives as granted, up until the expiry of the pre-defined incentive period, losing however the right to participate in any subsequent incentive scheme for ten years after expiry of the incentive period; or
- ii. Agree to receive a reduced annual incentive than that granted originally, receiving however such lower incentive for an additional seven-year period after expiry of the pre-defined incentive period.

Producers who were willing to choose for the alternative under ii. above must have notified the GSE within 90 days the date on which entered into force the Ministerial Decree setting out the modalities for choosing the alternative under ii. Above (i.e., 19 November 2014).

The requirement to choose between the above alternatives does not apply to plants admitted to benefit from the 'CIP 6' incentive system and new renewable energy plants incentivised pursuant to Ministerial Decree of 6 July 2012 (i.e., the RES Decree), except for plants for which the transitional regime applies.

STATISTICS

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

On March 2015, the GSE has published the draft statistics on RES for the year 2013¹⁰, calculated in accordance with the relevant European provisions with regard to particular factors (for instance the biodegradable fraction of waste).

The analysis completed by the GSE shows that, as of 31 December 2013, in Italy an aggregate of 49,786 MW deriving from RES were installed nationwide, for an overall energy power production of 112 TWh, almost 20 TWh higher than 2012, thanks also to favourable climate conditions.

a) Photovoltaic power

With respect to solar power, the aggregate capacity of Italian photovoltaic plants as of 31 December 2013 was 18,053 MW, while the total power production amounted to 21,589 MWh, both in constant increase.

b) Other renewable energy sources

With respect to the other main renewable energy sources, Italy's total capacity and production of electricity has seen a positive trend throughout 2013, with an increase of the capacity in almost every sector of renewable energies.

More specifically:

- *Hydroelectric*: the total capacity of Italian hydroelectric power plants as of 31 December 2013 was 18,365 MW. The total power production amounted to 52,773 GWh.
- *Wind*: the aggregate capacity of Italian wind power plants as of 31 December 2013 was 8,561 MW. The total power production amounted to 14,897 GWh.
- *Biomass power*: the total capacity of Italian biomass plants as of 31 December 2013 was 4,033 MW. The total power production amounted to 17,090 GWh.

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¹⁰ As at the date of publication of this guide, the official statistics on RES for the year 2014 are not yet available.

JAPAN



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GENERAL

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

To ensure a stable and appropriate energy supply

Japan's energy self-sufficiency ratio¹ is traditionally very low due to lack of domestic natural resources, reaching a mere 8% in 2013. Conversely, around 92% of energy resources used in Japan for generating "primary energy" (including uranium for nuclear power) are imported from overseas. In light of this heavy dependence on imports and the temporary suspension of Japan's domestic nuclear power stations, renewable energy plays, and will continue to play, a crucial part in Japan's energy portfolio.

Following the 1973 and 1979 oil crises, the Japanese government recognized the importance of improving energy conservation

and reducing its dependency on oil by promoting new non-fossil fuel based energy sources. In accordance with this policy shift, the government enacted the Energy Conservation Act² in 1979 to promote technological development for improving energy efficiency. As a result of continued efforts by both the government and the private sector, Japan has improved its energy consumption efficiency by approximately 43% over the past thirty-seven (37) years and has become a global leader in energy efficiency. However, recent figures suggest the gap in efficiency between Japan and other major countries is slowly closing.³

The Japanese government adopted a policy of reducing oil dependence through the enactment of the Promotion of Alternative Energy Act in 1980.⁴ Although dependence on

¹ The "energy self-sufficiency ratio" refers to the ratio between domestic production and primary energy supply in Japan - Energy Balance Report of Japan 2013 (Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry of Japan) (hereinafter, the "Energy Balance Report 2013").

² The full English translation of this law is the Act concerning the Rational Use of Energy (Act No. 49 of 1979) (*enerugi no shiyou no gourika ni kansuru houritsu*).

³ With regard to primary energy supplied per GDP, Japan's energy efficiency was 2.5 times that of the US in 1991, but only 1.6 times that of the US in 2010 - Annual Report of Energy on Japan, 2014 (Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry of Japan) (hereinafter, the "Annual Report of Energy 2014").

⁴ The full English translation of this law is the Act on the Promotion of Development and Introduction of Alternative Energy (Act No. 71 of 1980) (*hikaseki enerugi no kaibatsu oyobi doumyuu no sokushin ni kansuru houritsu*).

oil declined from 77% in 1973 to 47.3% in 2012 in respect of primary energy supply, this percentage is still high in comparison with other countries. The total percentage of Japan's dependence on fossil fuel energy (including oil, natural gas, LPG and coal) in respect of primary energy supply was around 92.4% in 2013.⁵

In light of the trends in global economic development, and the expected growth of countries such as China and India, it is anticipated that the demand for oil, gas and power will continue to increase in the long-term. Exploitable natural fossil fuel reserves are, however, limited. In addition, oil reserves are disproportionately located in distant areas such as the Middle East.⁶ Since the Asian economic crisis in 1999, the price of crude oil continues to remain high, and the natural resource market carries on its path of instability. As a result, Japan's energy supply (which, as noted above, is heavily reliant on imports) is considered fragile. In order to promote stability and insulate Japan's economy from external market forces (such as future oil crises), renewable energy is considered as playing a fundamental and crucial role.

To reduce the environmental burden

The use of renewable energy is valuable not only for contributing to the improvement of Japan's humble self-sufficiency ratio but also for slowing the effects of global warming by reducing emissions of greenhouse gases.

The issue of climate change is recognized to be one of greatest environmental concerns facing the 'global village' at present. Faced with such issues, Japan committed to reducing its greenhouse gas emissions by 6% from 2008 to 2012. Given that the Kyoto Protocol target was expected to be met, the Japanese government further set a new target aiming to reduce the total amount of global greenhouse gas emissions by 3.8% by 2020.⁷ Furthermore, the Japanese government proposed a long-term target aiming to reduce the current level of emissions in Japan by 80% by 2050.⁸

To reduce the dependency on nuclear energy

The 'Master Plan of Energy' adopted by the Japanese government in June 2010 required zero-emission power generation to be increased to 70% before 2030. However, the government was forced to reconsider the plan after the nuclear accident in Fukushima (precipitated by the March 2011 East Japan Earthquake), given that it assumed that 50% of electricity power would be generated by nuclear energy. In revising the plan in April 2014, the Japanese government announced its policy to decrease its dependency on nuclear energy as much as possible by introducing energy conservation measures, increasing the use of renewable energy and by promoting efficiency in thermal power. The Japanese government also announced that it will endeavor to accelerate the introduction of renewable energy by as much as possible for a 3 year period starting from 2013, and commit to continuing to actively promote its development thereafter.

⁵ Energy Balance Report 2013.

⁶ Over 80% of crude oil imported into Japan is from the Middle East - Annual Report of Energy 2014.

⁷ "The Greenhouse Gas Reduction Target toward COP19" on 15 November 2013 (Ministry of Environment).

⁸ The Forth Basic Environmental Plan (Cabinet Decision on 27 April 2012).

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

The Renewable Energy Law⁹, which governs the Japanese Feed-in Tariff (“FIT”) program, defines “renewable energy resources” as follows:¹⁰

- photovoltaic (PV) power;
- wind power;
- hydro power;
- geothermal power and biomass (organic substances derived from plants and animals, which can be used as a source of energy, excluding crude oil, petroleum gas, combustible natural gas and coal and their by-products); and
- other resources to be designated by ordinance, which can be permanently used as electrical energy resources.¹¹

Other than the Renewable Energy Law, the Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers¹² has a similar definition regarding renewable energy.

It defines “renewable energy resources” as sunlight, wind power and other non-fossil energy resources that can be used permanently as energy resources and that are designated by the relevant enforcement ordinance.¹³ The enforcement ordinance¹⁴ designates the resources of renewable energy as follows:¹⁵

- (i) photovoltaic power;
- (ii) wind power;
- (iii) hydro power;
- (iii) geothermal heat;
- (iv) solar thermal power;
- (v) heat in the atmosphere; and
- (vi) biomass (except for fossil fuels).

REGULATION

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

To promote the use of electric energy generated by renewable energy and to encourage renewable energy business, the Renewable Energy Law was passed by the Japanese Diet in August 2011 and came into force on 1 July 2012. Under the Renewable Energy Law, electricity companies (i.e., utilities) are obligated to purchase all electricity generated from renewable energy sources for certain periods at fixed prices designated by the Minister of the Ministry of Economy, Trade and Industry (“METI”). The renewable energy procured by the electricity companies

⁹ The full English translation of this law is the Act on Special Measures concerning Procurement of Renewable Energy by Operators of Electric Utilities (Act No. 108 of 2011) (*denki jigyousha ni yoru saisei kanou enerugi denki no choutatsu ni kansuru tokubetsu sochi hou*)

¹⁰ Article 2(4) of the Renewable Energy Law.

¹¹ There is no ordinance which designates other renewable energy resources at the time of writing.

¹² The full English translation of this law is the Act on Promotion of Use of Non-Fossil Fuel Energy Resources and Efficient Use of Fossil Fuel Energy Resources by Energy Suppliers (Act No. 72 of 2009) (*enerugi kyoukyuu jigyousha ni yoru hikaseki enerugi gen no riyou oyobi kaseki enerugi genryou no yuukouna riyou no sokushin ni kansuru houritsu*)

¹³ Article 2(3) of the Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers.

¹⁴ The Enforcement Ordinance of the Act on Promotion of Use of Non-Fossil Fuel Energy Resources and Efficient Use of Fossil Fuel Energy Resources by Energy Suppliers (Ordinance No. 222, 27 August 2009) (*enerugi kyoukyuu jigyousha ni yoru hikaseki enerugi gen no riyou oyobi kaseki enerugi genryou no yuukouna riyou no sokushin ni kansuru houritsu sekourei*)

¹⁵ Article 4 of the Enforcement Ordinance of the Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers.

is, through their grid system, broadly distributed to end-consumers who bear the procurement cost as a “renewable energy surcharge”¹⁶ which is automatically incorporated into their electricity bills on a monthly basis.

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

The Agency for Natural Resources and Energy, METI and the Ministry of Environment (“MOE”) are the principal regulatory bodies.

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

Certification of Facilities

To use the FIT program, a renewable energy project is required to obtain approval from METI (the “Certification of Facilities”, commonly known as “*setsubi-ninte?*”). Upon receiving the application of the Certification of Facilities, METI examines the legal requirements such as the capacity and quality of the power facilities, maintenance system, appropriate measuring facilities and reports of annual costs, and then approves the facilities if all requirements are met.¹⁷

If the renewable energy is required to undertake an “Environmental Impact Assessment” (*kankyō asesu*) under applicable law or local government rules (such as wind power projects with capacity over 10,000kWh) the renewable energy project has to submit a copy of the opinions it received from METI with respect to its ‘Draft Environmental Impact Statement’ at the time it submits its application of Certification of Facilities.¹⁸

Other Permits

Other permits may be needed depending on the land classification of the site in which a proposed project is to be located (such classifications being ultimately determined at the local level in accordance with local laws and regulations). As a typical example, the Agricultural Land Act¹⁹ prohibits using “agricultural land” for any purpose other than “agriculture”. To enable renewable energy projects to be carried out on such land, “conversion” under the Agricultural Land Act will be required (such “conversion” for certain types of agricultural land being difficult to obtain). Other laws often encountered in renewable energy projects in Japan are the Nature Conservation Act²⁰, Natural Parks

¹⁶ The renewable energy surcharge from June 2014 is 0.75 yen/kWh plus photovoltaic power surcharge (0.03 – 0.05 yen/kWh, depending on each area; it is the surcharge under the buyback program mentioned in Section 7 below).

¹⁷ Normally, METI issues the Certificate of Facilities about 1 month after the application. We note, however, that a number of solar power developers have recently faced cancellation following authorization due to their inability to timely execute binding land agreements and module supply agreements/EPC agreements. To avoid this issue re-occurring, METI recently released amendments to the regulations (effective from 1 April 2014) with respect to solar facilities (over 50kW) requiring land and facilities to be “fixed” (i.e., binding agreements) within 6 months of authorization. Those who are unable to do so will have their authorizations cancelled, with METI also notifying the relevant utility

to enable connection applications, etc to also be terminated. Carve outs are, however, provided. Developers will be granted extensions in cases, for example, where connection application acceptances are not forthcoming from utilities within normal periods (i.e., 3 months) such as the case in Hokkaido or more time is needed due to the specific areas (such as those affected by the March 2011 East Japan Earthquake).

¹⁸ Please note that the procedure of Environmental Impact Assessment is time-consuming (taking on average between 2-4 years to complete). The opinions of METI required to be submitted with the application for authorization can take, in some cases, approximately 18 months to obtain.

¹⁹ The Agricultural Land Act (Act No. 229 of 1952) (*nouchi hon*).

²⁰ The Nature Conservation Act (Act No. 85 of 1972) (*shizen kankyō hōzen hon*).

Act²¹, Act on Protection of Cultural Properties²², and the Forest Act²³. Applicable laws will, however, be ultimately determined on a case-by-case basis, at the local rather than national level. Thorough due diligence is therefore strongly recommended.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

A wholesale supplier (“Independent Power Producer” or “IPP”) is exempt from license requirements under Japanese law. Most business operators of renewable energy generation in Japan are IPPs.²⁴

INCENTIVES

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

A small or medium-sized private business operator²⁵ who establishes a facility that is used for new energy (such as renewable energy) can apply to have 7% of the costs of such facility deducted from its corporate tax liability. Alternatively, set-up costs can be immediately amortized up to 30%.

²¹ Natural Parks Act (Act No. 161 of 1957) (*shizen kouen hou*).

²² The Act on Protection of Cultural Properties (Act No. 214 of 1950) (*bunkazai hogo hou*).

²³ The Forest Act (Act No. 249 of 1951) (*shinrin hou*).

²⁴ A wholesale supplier with generation facility of 2,000,000 kW or more is categorized as “Wholesale Electricity Utility”, which is required to have a license. A wholesale supplier which supplies (i) 1,000 KW over 10 years or (ii) 100,000 kW over 5 years is required to make a filing to the authority, provided that an operator under the FIT program is exempt from the filing.

²⁵ A small or medium-sized company means one whose capital amount is less than JPY100,000,000 or whose total number of employees is less than 1,000.

In relation to photovoltaic and wind power generation facilities, small or medium-sized private business operators can choose the way in which all set-up costs are immediately 100% amortized. Other operators can also utilize this amortization benefit but are not permitted to benefit from the 7% corporate tax deduction applicable only to small and medium-sized operators.

Owners of renewable energy power-generating facilities which have acquired Feed-in Tariff authorization can also benefit from a 33.3% discount against the value of their real-estate for the calculation of their real-estate tax over a three year period.

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

Under the Renewable Energy Law, electricity companies are required to enter into a power purchase agreement with a METI-approved power producer of renewable energy (“Specified Supplier”) at fixed prices for certain periods designated by METI. The Minister of METI will determine the fixed purchase price and purchase period every year for projects which lock-in the price in that year²⁶, after taking into consideration the opinion of a ‘Price Calculation Committee’ which consists of five independent commissioners. The calculation of the fixed purchase price is based on (i) the normative cost assuming the

²⁶ FIT prices are ‘locked-in’ by an operator on the later date in which both (a) the Certification of Facilities is obtained and (b) an application for connection is “received” by the relevant utility. We note that a utility will not “receive” an application until a prior consultation process has been undertaken which usually takes about 3 months.

supply of renewable energy derived electricity is carried out in an efficient manner; and (ii) the estimated amount of supply of renewable energy electricity, after taking into consideration the following factors:

- the current amount of renewable energy derived electricity supplied in Japan;
- the appropriate profit which the operator should earn (METI will give special consideration to the operator's profit for the initial three years to encourage the use of renewable energy);
- the cost of supply of renewable energy derived electricity which existing operators have been incurring prior to the enactment of the Renewable Energy Law; and
- the need to ensure that the cost of renewable energy is not excessive for end users.

Electricity companies can recover the cost of using renewable energy sources by applying a surcharge to end users in proportion to their power consumption. However, a particularly large business operator whose annual electricity usage amount exceeds 1,000,000 kWh and whose ratio of electricity usage to sales volume (per 1,000 yen) exceeds

5.6kWh, can apply for a special 80% reduction of the surcharge.²⁷ The cost of renewable energy and surcharges are adjusted through a clearing institution to average the burden shared amongst electricity companies throughout the country.²⁸

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

The following table shows (i) the procurement price (per 1kWh) at which electricity companies are obliged to purchase renewable energy derived electricity; and (ii) the minimum period during which electricity companies are required to purchase renewable energy derived electricity under FIT prices locked-in within the 2015 period²⁹ ³⁰. The procurement price and the minimum purchase period will be revised for subsequent projects annually. The price for an existing project can only be retroactively amended by METI, during times of 'economic turmoil' and after consultation with the independent 'Price Calculation Committee'.

²⁷ In addition to this, there is a special reduction for victims of the March 2011 East Japan Earthquake.

²⁸ For example, there are a large number of consumers in Tokyo and Osaka paying surcharges to their respective utilities. However, such regions do not have many renewable energy facilities compared to other areas where the situation is reversed.

²⁹ This is the period on or after 1 April 2015 and before 31 March 2016 (i.e., the 2015 Japanese Financial Year).

³⁰ The procurement price does not include consumption tax, unless otherwise stated.

Photovoltaic power (Less than 10kWh)

*Power facilities in the supply-demand control areas of Hokkaido Electric, Tohoku Electric, Hokuriku Electric, Chugoku Electric, Kyushu Electric and Okinawa Electric are under the obligation to install output control facilities (from April 1 2015).

Photovoltaic power (10kWh or more)

	10kWh or more	
	1 April 2015 – 30 June 2015	1 July 2015 –
Procurement Price	29.00 yen	27.00 yen
Minimum Period	20 years	20 years

Wind power

	20kWh or more	Less than 10kWh	Offshore Wind Power
Procurement Price	22.00 yen	55.00 yen	36.00 yen
Minimum Period	20 years	20 years	20 years

Water power

	1,000kWh or more Less than 30,000kWh	200kWh or more Less than 1,000kWh	Less than 200kWh
Procurement Price	24.00 yen	29.00 yen	34.00 yen
Minimum Period	20 years	20 years	20 years

Geothermal heat

	15,000kWh or more	Less than 15,000kWh
Procurement Price	26.00 yen	40.00 yen
Minimum Period	15 years	15 years

Biomass

	Methane fermentation gasified biomass	Unused wood		General wood (including palm shell)	Waste (excluding wood) biomass	Recycled wood
		Less than 2,000kWh	2,000kWh or more			
Procurement Price	39.00 yen	40.00 yen	32.00 yen	24.00 yen	17.00 yen	13.00 yen
Minimum Period	20 years	20 years	20 years	20 years	20 years	20 years

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

Japan ratified the Kyoto Protocol in June 2002 and achieved its reduction target for the first commitment period between 2008 and 2012. However, it has not yet set a specific target for the second commitment period.

Although a couple of voluntary-based carbon credit systems have been introduced in Japan as pilot projects³⁰, no national statutory carbon credit system has been established thus far. On the other hand, some local governments such as Tokyo (since 2010) and Saitama Prefecture (since 2011) adopted their own independent carbon credit systems under which such local governments impose CO2 reduction on businesses of certain sizes and allow them to use carbon credits.

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

The Renewable Energy Law obligates electricity companies to connect their substation, transmission and distribution facilities with renewable energy-based power plants if the operator so requires. However, electricity companies can refuse connection if:

- the operator does not bear the connection cost;
- there is a possibility that the smooth electricity supply by the electricity company may be disrupted by the connection;
- the operator does not provide necessary information to the electricity company for the connection;
- the relevant connection agreement includes untrue facts, illegal contents or an excessive compensation provision against the electricity company;
- the operator does not agree to contractual provisions under which (i) the electricity company can require the operator to reduce electricity output without compensation for a maximum of 30 days per year, where electricity supply exceeds demand (i.e., a 30-day statutory curtailment right without compensation); (ii) the electricity company will not be liable to the operator if its facilities become out of order due to natural disaster or prevention of injury or death; or (iii) the operator is not entitled to make a claim against the electricity company for its loss in respect of the electricity company's temporary suspension of business when it undertakes regular or extraordinary investigation or construction for connection purposes;
- the operator does not (i) permit investigation of its facilities by the electricity company; (ii) warrant non-relationship with anti-social forces; or (iii) enter into an agreement in Japanese which is governed by Japanese law and subject to the jurisdiction of the Japanese courts; or
- the estimated electricity supply by the operator will exceed the capacity of transmission or acceptance by the electricity company, even if it takes reasonable measures.

³⁰ Japan's Voluntary Emissions Trading Scheme which was led by MOE (2005 – 2013); Trial Implementation of Domestic Integrated Market of Emissions Trading which is led by MOE (2008 –), etc.

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

The Rural Areas Renewable Energy Act³¹ was enacted in late 2013 in order to (i) promote renewable energy projects in rural areas; and (ii) harmonize the promotion of such projects with the adequate protection of agricultural and forest land, fishing ports and other rural areas in which the projects are located. Under the Act, a renewable energy business operator who will contribute to the development of rural areas may enjoy the benefits of (i) a “one stop” procedure with respect to specific approvals such as “conversion” under the Agricultural Land Act; and (ii) a favorable position by which the operator may obtain expedited approval. The Japanese government expects “contributions” to rural areas by renewable energy projects to include, for example, an operator (a) using part of its profit for improvement of agricultural land surrounding the proposed facility; (b) establishing and operating a farmers’ market and providing financial support; (c) regularly purchasing wood chips from the owners of local forest land for use in its biomass plant; or (d) using livestock manure from local farmers and selling environmentally-friendly compost as a byproduct of its biomass plant.

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

Renewable Energy Power System Expenditure Subsidy

The Japanese government has established assistance programs to assist local governments or companies that use renewable energy facilities.²⁵ Local governments or companies must apply for an assistance program by submitting a ‘use plan’. If the Minister of METI approves such plan, the local government or company will be granted subsidies for up to 1/2 (in case of a local government) or up to 1/3 (in case of a company) of the necessary costs of the facilities. The renewable energy under an assistance program is limited to (i) photovoltaic power, wind power, biomass, hydro power or geothermal power which is for self-use and has not been approved under the FIT program; or (ii) using solar heat, thermal difference energy, biomass heat energy, biomass fuel production, heat from snow or ice, or geothermal heat.

Loan for Environment and Energy

The Japanese government also provides an assistance program to make available low-interest loans for acquiring non-fossil energy facilities, including renewable energy facilities. The loans are provided by the Japan Finance Corporation, which is a wholly-owned subsidiary of the Japanese government. The applicable renewable energy is solar light, solar heat, wind power, thermal difference energy, biomass energy, snow and ice, geothermal heat, and hydro power.

³¹ The full English translation of this law is the Act on Promotion of Generating Renewable Energy Harmonized with Healthy Development of Agriculture, Forestry and Fishery (Act No. 81 of 2013) (*nourin gyogyou no kenzenna batten to cyounwa no toreta saisei kanou enerugi denki no hatsuden no sokushin ni kansuru bouritsu*).

STATISTICS

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

		April 2014 – March 2015 (1,000kWh)	Percentage to the total country generation of electricity	
Thermal Power		717,763,968	90.801%	
Nuclear Power		-	-	
Renewable Energy	Water Power	70,171,429	8.877%	9.199% (9.478%)
	Wind Power	34,348	0.004%	
	Photovoltaic Power	88,941	0.011%	
	Geothermal Heat	2,418,946	0.306%	
	Biomass	(1,972,288)	(0.25%)	
	Waste	(233,207)	(0.03%)	
TOTAL		790,477,632	100%	

Note (1): The reference of Thermal Power includes Biomass and Waste.

Note (2): The statistics are based on “Actual generation of electricity in 2014” (Agency for Natural Resources and Energy, METI).

Note (3): Because of the nuclear accident in Fukushima in March 2011, and the subsequent Japan-wide shutdown of nuclear energy plants, the ratio of nuclear power in this table is far less than that of 2010. No nuclear power plant has been operated since September 2013, when the Oi Nuclear Power Plant in Fukui Prefecture was halted for a regular inspection.

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JORDAN



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ALI SHARIF ZU'BI ADVOCATES & LEGAL CONSULTANTS

GENERAL

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

The introduction of the Renewable Energy and Energy Efficiency Law No. 13 of 2012 (the “Renewable Energy Law”) places the renewable energy sector’s growth and development firmly on the government’s agenda. This is confirmed by the country’s energy strategy, which aims that 10% of the Country’s energy will be from renewable sources within the next decade.

Furthermore, during the last decade environmental concerns including the advancement of renewable energy in Jordan resulted in the establishment of several organizations related to renewable energy, the most relevant of which is the Jordan Renewable Energy Society headed by HRH Prince Asem Bin Nayef, which promotes the renewable energy sector in Jordan.

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

Renewable energy is defined in the Renewable Energy Law as:

“Renewable Energy: energy derived from natural resources, which have an element of perpetuity and continuance.”

In addition, the Renewable Energy Law specifies what constitutes a renewable energy source as:

“Natural sources of energy including solar energy, wind energy, bio-energy, geothermal energy and hydropower.”

REGULATION

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

The renewable energy sector is regulated through the Renewable Energy Law and its recent amendments pursuant to The Law for Amending the Renewable Energy and Energy Conservation Law No. (33) of 2014. Other relevant legislation includes the General Electricity Law No. 64 of 2002 and the Licensing of Electricity Companies Regulation No. 76 of 2001.

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

- Ministry of Energy and Mineral Resources;
- Electricity Regulatory Commission; and

- Promotion of Renewable Energy and Energy Efficiency Fund.

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

At the outset, it shall be noted that in order for any entity to undertake any renewable energy projects, it must register as an entity in Jordan. A license from the Ministry of Energy and Mineral Resources must also be obtained in order for the registration process to be completed.

6. Is there as category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

All types of energy generation require certain permits/licenses, whether renewable or otherwise, though such permits/licenses differ from one form of generation to the other. However, certain undertakings of energy generation will require entry into concession agreements with the Jordanian government, and such concession agreement may exempt entities contracting with the Jordanian government from the requirement to obtain permits/licenses.

INCENTIVES

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

Income Tax

Article 3 of the Income Tax Law No. 34 of 2014 (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:

- 35% for banks;
- 24% of every One Jordanian Dinar (JD 1) for telecommunication, electricity distribution and generation, mining, insurance, financial intermediation companies (including exchange and finance leasing companies);
- 14% for industrial companies; and
- 20% for all 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 24% 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 ten (10) years from the date upon which the company begins to generate renewable energy. Such exemptions were included in the draft of the Renewable Energy Law. However, they were removed in order to be included in another legislation, which is to be enacted in the near future. Nonetheless, no legislation in relation to such matter has been enacted to date.

Sales Tax

Products, processes, equipment that are used for renewable energy and energy conservation¹ are subject to (0%) sales tax and are exempt from any customs duties.

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

8. 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.

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

Article 10 of the Renewable Energy Law stipulates that the price of electricity generated from renewable energy sources shall be determined by virtue of instructions issued pursuant to the Renewable Energy Law. That said, it should be noted that the aforementioned article states that the prices of electricity to be sold to the licensed distribution companies shall not be less than the purchase price determined by the licensed distribution companies.

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

Yes, the Kyoto Protocol has been ratified in January 2003. Therefore, we are of the opinion that the general regime adopted in Jordan for carbon credits is the one specified under the Kyoto Protocol. That said, we opine that carbon credits are tradable in Jordan.

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

No such priority is provided in the Renewable Energy Law.

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

No. Both locally manufactured and imported materials and equipment used in the construction of renewable energy power plants are subject to a (0%) sales tax and are exempt from custom duties.

13. 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

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

Based on the figures of 2009, the total percentage of electricity generated by renewable energy sources does not exceed 1% of the total electricity generated in Jordan.

Please note that no statistics in relation to the percentage of each type of renewable energy generated in Jordan is published.

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GENERAL

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

Kazakhstan has world class reserves of oil, gas and coal. As a result, there has been less perceived need for the development of alternative energy sources than in many other countries. Most of the power stations in the country operate on coal, although some operate on gas or fuel oil. There are also a number of power stations that operate through hydroelectric power.

Notwithstanding the plentiful supply of natural resources in Kazakhstan, the Government of Kazakhstan has realized the benefits of encouraging the development of renewable energy sources. The Government is keen to pursue, and be seen to pursue, a policy of environmental conservation. The Government also sees a need for clean energy sources and the benefits of moving away from its dependence on coal.

Kazakhstan has a very favorable landscape for renewable energy, particularly solar, wind, biomass and bioethanol energy. Hydropower energy and wind energy have the greatest prospects for growth in terms of their commercial use in the short and medium-term. Hydropower is already used in Kazakhstan to

generate power. In addition, there are plans to develop wind power stations and solar power stations in Kazakhstan. According to the Plan of Measures for Development of Alternative and Renewable Energy in Kazakhstan, approved by the Government of the Republic of Kazakhstan ("RK") in January 2013, as amended, 106 plants using renewable energy should be commissioned in Kazakhstan until 2020. These 106 plants will include 34 wind power stations, 41 hydropower stations and 28 solar power stations. It is expected that these plants will generate in total 3054,55 MW of power.

The importance that Kazakhstan accords to renewable energy can be seen by its accession in 2009 to the International Renewable Energy Agency Charter (IRENA) and ratifying it on 22 March 2013. As emphasized by RK Government, Kazakhstan intends to stimulate the sharing of experience related to use of renewable energy as well as develop technologies and innovation in this area through the membership of IRENA.

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

Kazakhstan adopted Law on Support for the Use of Renewable Energy Sources on 4 July 2009, as amended (the "Renewables Law").

The Renewables Law defines renewable energy sources as follows:

"renewable energy sources shall mean sources of energy which are continuously renewed due to natural processes including the following types: solar radiation energy, wind energy, hydrodynamic water energy; geothermal energy: heat of ground, ground waters, rivers, and water bodies as well as man-made sources of primary power: biomass, biogas and other types of fuel from organic waste, which are used for generating electric and/or thermal energy."

Although coverage of renewable energy sources under the Renewables Law is quite broad, certain provisions of the Renewables Law do not apply to some renewable energy sources (see paragraph 8 below for the details).

REGULATION

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

The main law regulating renewable energy is the Renewables Law.

In July 2013 the Renewables Law was considerably amended to introduce a new approach for sale and purchase of the renewable energy (introducing a mechanism for determining differentiated tariffs for renewable energy, the absence of which has hitherto created uncertainty and a disincentive to invest in the sector). This approach has been implemented since then.

Any issues related to production, transmission and consumption of electric and/or heat energy which are not regulated by the Renewables Law are governed by the Law on Electric Power dated 9 July 2004, as amended (the "Electric Power Law").

Other relevant legislation includes *inter alia* the Water Code, the Land Code, the Law on

Energy Conservation, the Law on Natural Monopolies and Regulated Markets and the Law on Licensing.

There are numerous subordinate acts that regulate construction and use of renewable energy facilities as well as sale and purchase of the energy produced by such facilities. At present such acts include, *inter alia*:

- Resolution No. 43 of the RK Government dated 25 January 2013 On Approval of the Plan of Measures on the Development of Alternative and Renewable Energy in Kazakhstan for 2013-2020 (the "Renewable Energy Development Plan").
- Resolution No. 271 of the RK Government dated 27 March 2014 On Approval of the Rules for Defining of the Fixed Rates (the "Rules for Defining of the Fixed Rates");
- Resolution No. 645 of the RK Government dated 12 June 2014 On Approval of the Fixed Tariffs (the "Resolution on Fixed Tariffs");
- Resolution No. 644 of the RK Government dated 12 June 2014 On Approval of the Fixed Tariffs for the Solar Energy Stations that Use Photoelectric Modules Based on Kazakhstan Silicium for Transformation of Solar Energy (the "Resolution on Fixed Tariffs for Certain Solar Energy Stations");
- Resolution No. 876 of the RK Government dated 5 August 2014 On Approval of the Rules for Centralized Purchase by the RES Center of the Electric Energy Produced by the Renewable Energy Facilities (the "RES Center Purchase Rules") (see paragraph 4 for the definition of the RES Center);

- Resolution No. 878 of the RK Government dated 5 August 2014 On Approval of the Model Forms of Agreements on Purchase by the RES Center of the Electric Energy Produced by the Renewable Energy Facilities (the "Rules Approving Model Agreements");
- Resolution No. 1529 of the RK Government dated 5 October 2009 On Approval of the Rules of Monitoring the Use of Renewable Energy Sources (the "Monitoring Rules");
- Order No. 223 of the RK Minister of Energy dated 19 March 2015 On Approval of Feasibility Studies and Design Documents on Construction of Facilities for the Use of Renewable Energy Sources for the Purpose of Heating (the "Rules of Approval of Feasibility Studies") (these Rules of Approval of Feasibility Studies are not officially published as of date of preparing this review; Rules will become effective only upon official publishing);
- Order No. 117 of the RK Minister of Energy dated 20 February 2015 On Approval of the Rules of Determination of the Nearest Point of Connection to Electric or Heat Network of Facilities for the Use of Renewable Energy Sources (the "Connection Rules");
- Order No. 118 of the RK Minister of Energy dated 20 February 2015 On Approval of the Rules for Defining of the Rates for Support of the Renewable Energy Sources; (the "Rules for Defining of the Support Rates");
- Order No. 161 of the RK Minister of Energy dated 28 November 2014 On Approval of the Rules on Providing of the Targeted Aid to the Individual Consumers (the "Rules on Targeted Aid");

It should be noted that due to recent amendments of the RK legislation, a number of

subordinate acts that were subject to approval by the RK Government, are currently subject to approval by the authorized body responsible for development of renewable energy sources - the RK Ministry of Energy (the "MOE"). The MOE is taking steps for revision of such subordinate acts and approval thereof, as it is required by legislation. In particular, the Rules of Approval of Feasibility Studies, the Connection Rules and the Rules for Defining of the Support Rates have been recently revised and approved by the MOE's orders. It should be expected that some other subordinate acts, in particular, the RES Center Purchase Rules, the Rules Approving Model Agreements and the Monitoring Rules will be revised and approved soon by the MOE.

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

Renewable energy in Kazakhstan is regulated by the Government of Kazakhstan, the MOE (the RK Ministry of Energy) and certain local executive bodies.

The role of the Government of Kazakhstan includes, *inter alia*:

- development of the state policy in the area of use of renewable energy sources;
- approval of regulatory legal acts that establish fixed tariffs and define rules for establishing fixed tariffs.

The role of the MOE includes, *inter alia*:

- approval of the plan for location of renewable energy sources;
- development of the rules for establishing fixed tariffs;
- development and approval of all regulatory legal acts and technical regulations for the

- use of renewable energy apart from those that are approved by the RK Government;
- monitoring over use of renewable energy sources;
- coordination of the activities of state bodies, business entities and scientific organizations on development and use of renewable energy sources; and
- control over connection of the renewable energy facilities to the network of electric and heating lines of the energy transmitting companies.

The role of the local executive bodies includes, *inter alia*:

- coordination projects for the construction of renewable energy facilities for the production of heat energy for common (central) heat supply systems;
- reserving and providing land plots for construction of renewable energy facilities in accordance with the legislation on use of land and the plan for location of renewable energy facilities.

Finally, Renewables Law envisages that there should be an entity, so called accounting and financing center supporting renewable energy facilities (the "**RES Center**"). Although the RES Center is not a governmental body, some of its functions are close to regulatory. The role of the RES Center includes *inter alia*:

- purchase and sale of electric power produced by the facilities using renewable energy (in accordance with the procedures established by the Renewables Law); and

- determination of the expenses for support of renewable energy sources (which will be counted for 1 Kwt/hour of electric energy produced from all types of renewable energy sources and supplied to the national electricity grid) and publishing such information at the website.

Resolution No. 1281 of the RK Government dated 29 November 2013 established the RES Center in a form of a limited liability partnership. The recent revisions of the Renewables Law empower the MOE to define the RES Center (i.e. it is now role of the MOE and not the RK Government to define a company which shall act as the RE Center). It may be expected that the same entity that was established by the RK Government as RES Center would be approved as the RES Center by the MOE in the nearest future.

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

The Government continues to shorten the list of activities related to energy generation, distribution and supply which require a license. Currently a license is required only for purchase of electrical power for purposes of energy supply. As to generation, distribution or transmission of energy, these activities do not require license.

Presence of licenses should be considered for design and construction of a renewable energy facility. This is because design and construction activities in Kazakhstan are licensed. Employment of licensed contractors is possible and may be reasonable in certain cases due to some constraints for obtaining of such licenses. The design documentation would be subject to obtaining of approval from so called "integrated independent experts review and approval" prior to implementation.

In case of construction of a facility using hydrodynamic water energy, obtaining of

certain approvals and permits related to use of water resources should be considered.

Other permits, approvals and certifications may be required for equipment and personnel.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

Licenses for generation, distribution or transmission of energy were eliminated effective from August 2012 (i.e. a license is not required for producing and transmission of electric or heat energy, including when energy is produced with renewable energy sources).

INCENTIVES

7. Are tax incentives available to renewable energy generation companies?

There are currently no tax incentives available to companies generating energy with use of renewable energy facilities.

The RK Code on Taxes and Other Mandatory payments to the Budget dated 10 December 2008, as amended (the "Tax Code") envisages special taxation regimes for the companies operating in special economic zones. There are ten special economic zones, one of which is Innovation Technologies Park ("ITP Zone"). The ITP Zone was established for the purpose of development of technologies related to, *inter alia*, renewable energy and effective use of natural resources. The Tax Code stipulates that companies conducting scientific research and experimental design related to renewable energy within the territory of the ITP Zone are eligible for: (i) application of a zero coefficient when calculating land use tax (i.e. the companies are subject to application of special rates for calculation of land use tax but are exempted from increase

coefficients); (ii) application of a zero rate when calculate property tax; (iii) reduction on 100% of the amount of corporate income tax payable to the budget (however, construction of facilities aiming at support of activities in the ITP Zone are exempted from this incentive); and (iv) reduction on 100% of the amount of social tax provided that a number of conditions are met by the company.

It should be noted that there are special requirements that must be complied with by a company in order to be considered a company conducting activities within the territory of a special economic zone (e.g. requirements to place of registration, requirements to the activities forming total annual income and some others).

8. Is there a purchase guarantee provided for by the relevant legislation for generators of renewable energy?

Electric energy: Yes, generally there is a guarantee for purchase of the electric energy generated by the renewable energy producers.

Under the Renewables Law the RES Center (as defined in paragraph 4 above) is obligated to purchase electricity produced from renewable sources that is supplied to the national grid in accordance with the procedure established by this Law. The fixed rates should be applied for purchase of electric energy from the renewable energy producers (see paragraph 8 below for the details).

Renewable energy producers may also sell electricity to general consumers. However, if they do so, they would be bared under the Renewables Law to sell electricity to the RES Center.

Electricity purchased by the RES Center from renewable energy producers will be then need to be sold to the entities which are defined as 'conditional consumers'. The conditional

consumers include: (i) the companies producing energy with use of coal, oil, gas and nuclear fuel, (ii) the companies purchasing electric power from outside of Kazakhstan, and (iii) hydropower stations with the units producing more than 35 MW when such units are located within one hydro engineering complex. The Renewables Law provides for a special procedure for defining rate for sale of the electric energy by the RES Center to the 'conditional consumers'.

Heat energy: Heat energy which is generated by a renewable energy producers and which is supplied to a common heating supply system of a settlement, must be purchased by a company which supplies energy to such settlement. Heat energy must comply with the technical requirements of the system which accepts heat energy.

It is worth noting that the above provisions dealing with guaranteed purchases from the renewable energy producers are somewhat untested in practice as these became effective only in January 2014.

9. Is there a minimum price guarantee given by the relevant legislation for generators of renewable energy?

Electric energy: The Renewables Law envisages fixed rates for purchase of electric energy by the RES Center from renewable energy producers. These rates should be approved by the RK Government (in local currency) for a period of fifteen years.

The Resolution on Fixed Tariffs and the Resolution on Fixed Tariffs for Certain Solar Energy Stations, both approved by the RK Government on 12 June 2014 establish fixed rates as follows:

- (i) for all wind power stations apart from Astana – Expo 2017 wind power station –

22,68 tenge (about US\$0.122) for 1 kWt/hour;

- (ii) for Astana – Expo 2017 wind power station 59,7 tenge (about US\$0.321) for 1 kWt/hour;

- (iii) for small hydropower stations –16,71 tenge (about US\$0.09) for 1 kWt/hour;

- (iv) for the stations working with biogas – 32,23 tenge (about US\$0.173) for 1 kWt/hour;

- (v) for solar power stations apart from solar energy stations that use photoelectric modules based on Kazakhstan silicium (KazPV) – 34,61 tenge (about US\$0.186) for 1 kWt/hour; and

- (vi) for solar power stations that use photoelectric modules based on Kazakhstan silicium (KazPV) –70 tenge (about US\$0.377) for 1 kWt/hour.

The provisions of the Renewables Law on application of the fixed rates for purchase of electric energy do not apply to certain renewable energy facilities. In particular, these provisions do not apply to: (i) the hydroelectric power stations with total capacity of more than 35MW when the units are located within one hydroengineering complex and (ii) the renewable energy facilities with the term of operation longer than the term for repayment of capital cost as established by the feasibility study for such renewable energy facility.

The RK Government has the right to revise the fixed rates every three years. Such revised fixed rates, however, will not apply to the existing agreements between the RES Center and the renewable energy producers, what may have negative impact on such renewable energy producers.

The rates also will be subject to annual indexation. The Rules for Defining of the Fixed Rates approved by the RK Government on 27 March 2014 establish a procedure for indexation of fixed rates.

Heating energy: There is no minimum price guarantee for sale and purchase of heating energy.

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

Kazakhstan ratified the Kyoto Protocol on 26 March 2009. Currently under the Kyoto protocol Kazakhstan's status is as follows: "party included in Annex 1 for the purpose of the Kyoto Protocol and not included in Annex 1 for the purpose of the Framework Convention on Climate Change".

In practice it means that Kazakhstan accepts voluntary obligations on fulfilment of the provisions of the Kyoto Protocol but it is not listed in Annex 1 of the Framework Convention on Climate Change and assigned amount units are not defined for Kazakhstan.

Provisions on internal carbon emissions trading were introduced in December 2011 and became effective from January 2013.

Certain entities which emit greenhouse gases in an amount exceeding the equivalent of 20,000 metric tons of carbon dioxide per year (the "Regulated Entities") must obtain quotas for such emissions. Quotas will be granted by the authorised body in the area of environmental protection and its regional subdivisions in the form a certificate, and must be obtained for each source of emission of greenhouse gases. If the quotas are exceeded, the entity will need to purchase unused quotas from other entities and/or carbon units which are obtained as a result of emissions-reducing projects.

Market mechanisms for the reduction of emission and absorption of greenhouses gases should be implemented through:

- trading of greenhouse gas emission quotas;
- trading of units of absorption of greenhouse gases, units of certified emission reduction, units of emission reduction, units of internal emission reduction;
- international trading of units which is conducted among the countries which have limitations and/or obligations on reduction of emissions of greenhouse gases (and among the entities in those countries).

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

The energy transmission companies are obliged to determine the nearest point of electric or heating grid which complies with the technical requirements and connect the facilities producing renewable energy on a non-discriminatory basis.

Where there is any limitation in the transmission capacity of the transmission grids, the energy transmission companies must give priority to the transmission of electricity generated using renewable energy sources.

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

There are currently no incentives specifically for domestic manufacturing of equipment or materials used in the construction of renewable energy based power plants. However, legislation promotes the use of locally produced goods, work and services by various entities, including state bodies and state

companies, the companies which are controlled by the State National Welfare Fund.

13. What are the other incentives available to generators of renewable energy?

Preferences applicable to investment projects

Companies generating energy with use of renewable energy facilities may be eligible for certain "investment preferences" under the Law on Investments dated 8 January 2003, as amended (the "Law on Investments").

The Law on Investments permits the granting of investment preferences to, *inter alia*, investment projects.

A project is considered investment project and is eligible for investment preferences if (a) it is implemented by a Kazakhstan legal entity; and (b) it relates to one of priority activities as such are defined by the RK Government. There are 93 specific types of activities, one of which is production, transmission and distribution of electric energy. While it is not clear from the legislation what the position is with respect to the design and construction of facilities for the production and use of renewable energy, in our view the design and construction of facilities for the production and use of renewable energy should be considered a "priority activity" for the purposes of the legislation.

Investment projects may be granted with preferences in the form of: (i) customs exemptions and (ii) in-kind state grants.

In order to receive investment preferences, an investment contract providing for such investment preferences must be entered into with an "authorized body". The authorized body is currently the RK Ministry of Investments and Development. Contracts for granting of investment preferences are entered into only with legal entities incorporated in the Republic of Kazakhstan which are performing

an "investment project" (foreign investors must establish a legal entity in Kazakhstan to qualify for investment preferences).

- Customs exemptions may be available to entities implementing investments projects under investment contracts. For such projects, import customs duties exemptions may be granted for the import of technological equipment, component and spare parts as well as raw materials and/or supplies (subject to fulfillment of criteria established by the customs legislation). For technological equipment and component parts such exemptions may be granted for a term of not more than five years from the date of registration of the contract. For spare parts and for raw materials and/or supplies customs duties exemptions may be granted for a term of not more than five years from the date of commissioning of the fixed assets. The term will also depend on scale of investments.
- The following state in-kind grants may be granted: land plots, buildings, structures, machinery and equipment, computer facilities, measurement devices and control instruments, transport vehicles (except for passenger motor transport), production and household stock. Such grants provide for temporary free use of property or the right of temporary free land use with subsequent free transfer into ownership or land use upon performance of investment obligations under a relevant contract. State in-kind grants are valued at market price. The maximum amount of a state in-kind grant may be not more than thirty percent of the amount of investment in fixed assets of the investing legal entity. If the estimated value of the requested state in-kind grant exceeds the above, the recipient may receive the requested property and pay the difference between its estimated value and the maximum amount of the state in-kind grant. State in-kind grants are provided by the Ministry of Investments

and Development upon agreement with the State Property and Privatization Committee of the Ministry of Finance and/or Committee on Construction, Public Utilities and Land Resources Management of the RK Ministry of National Economy as well as certain local executive bodies.

Targeted Aid

Under the Renewables Law the state will compensate to individuals 50% of expenses on purchase of the units producing energy (electric or thermal) with use of renewable sources when: (i) such units are procured from Kazakhstan producers and (ii) total capacity of such purchased units is not more than 5 kW.

For the purpose of the Renewables Law, Kazakhstan producers are individuals and legal entities that are residents of Kazakhstan that either fully manufacture goods in Kazakhstan or sufficiently re-process such goods in Kazakhstan (in both cases in accordance with criteria established by the customs legislation).

There are Rules on Targeted Aid which establish specific procedure.

Training

As one of the conditions of the state regulation of the use of renewable energy, it is envisaged that the State will provide for the training of Kazakhstan personnel. The Renewables Law does not give any explanation on what is meant by this provision. However, we believe that the State will propose to allocate funds from its budget towards the training of Kazakhstan personnel, for example in the construction and operation of renewable energy facilities. If this is the case, it is likely that a tender will be held for companies capable of organizing training for Kazakhstan personnel.

Guaranteed provision of land plots for construction of renewable energy facilities

The local executive bodies are responsible for reserving and providing land plots for the construction of renewable energy facilities indicated in the plans for the location of renewable energy sources. We believe that the provision of the land plots for construction of the renewable energy facilities which are envisaged by the Renewable Energy Development Plan is guaranteed.

The right to exemption from payment for power transfer services

Entities producing electrical and thermal power generated from renewable energy sources are exempt from payment to energy transmission companies for power transfer services.

STATISTICS

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

According to publically available data, thermal power amounts to 87% of the total electricity generating capacity in Kazakhstan; the share of hydroelectric power amounts to nearly 12% while other sources make up the balance. In terms of thermal power generation, coal plays the leading role with a share of nearly 75%, gas nearly 23%, and fuel oil makes up the balance.

At present, apart from some hydroelectric power, Kazakhstan does not generate any significant amount of power through renewable energy sources. Most power generated from renewable energy sources is generated by small-scale entrepreneurs and local farmers who generate power for their own consumption. This would probably

amount to less than 1% of Kazakhstan's total power production.

Unfortunately, the development of the renewable energy industry is hampered by the cost of production of renewable energy as compared to the more traditional sources of power. It is therefore vital that Kazakhstan develops a sustainable system of subsidies and

other support mechanisms in order to promote the development of the renewable energy industry in Kazakhstan.

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KYRGYZSTAN



Magomed Saaduev

KALIKOVA & ASSOCIATES

GENERAL

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

In Kyrgyzstan, hydropower is the most common renewable energy source. More than 80% of all energy in the country is produced by the Toktogul cascade of hydropower plants (“HPPs”), built during the Soviet era. Kyrgyzstan’s hydropower sector has the capacity to produce approximately 140 billion kWh per year. However, today it produces not more than 10% of this amount. By the amount of electric power which can be produced by hydropower plants, Kyrgyzstan is ranked 3rd among CIS countries after Russia and Tajikistan. Other renewable energy sources (solar power, wind power, etc.) are practically not used in the republic.

The Kyrgyz electric power grid consists of 15 HPPs with a total capacity of 2,950 MW. Also, there are 2 thermal power plants, thus, the total power capacity of the energy sector is 3680 MW.

The electric power sector produces approximately 3.9% of the gross domestic product (GDP) and 16% of the industrial production volume, 10% of the national budget revenues. Thus, the electric energy sector has a material impact on the economy of the country.

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

The definition of renewable energy is given in the Law of the Kyrgyz Republic “On Renewable Energy Sources” of 31 December 2008 No. 283 (the “Law on Renewable Energy”). According to Article 3 of this Law, renewable energy is ecologically clean energy produced by renewable energy sources including renewable fuel.

Renewable energy sources include:

- energy of sun, earth, vacuum, wind, and water;¹

¹ Hydro power plants are considered renewable provided that the established capacity of HPP is less than 30 megawatts (MW). HPPs with the established capacity of 30 and more MW are considered traditional sources of energy. According to the Law on Renewable Energy, traditional energy is the energy gained from non-renewable energy sources, particularly from hydrocarbons (coal, oil, gas) and hydroelectric power

- 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).

However, as the Law on Renewable Energy Sources states, the list of the above sources of renewable energy and equipment is not final and can be extended with the development of science and technologies related to renewable energy and energy efficiency.

REGULATION

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

The energy sector is regulated by the Government of the Kyrgyz Republic and special authorized state body for energy. The principal laws and regulations governing renewable energy are: (i) the Law on Renewable Energy of 31 December 2008 No. 283; (ii) the Law “On Energy” of 30 October 1996 No. 56; (iii) the Law “On Electric Energy” of 28 January 1997 No. 8; (iv) the Law “On Energy Saving” of 7 July 1998 No. 88; (v) the Strategy of development of fuel and energy infrastructure until 2025, approved by Resolution of the Parliament of the Kyrgyz Republic of 24 April 2008 No. 346-IV; (vi) the Regulation on the Ministry of Energy and Industry approved by the KR Government Resolution No. 116 of February 20, 2012; (vii) the Regulation on the State Agency for Fuel and Energy Sector under the

stations with the established capacity of 30 and more megawatts.

KR Government, approved by the KR Government Resolution No. 650 of November 14, 2014; (viii) the Regulation on the Directorate of the project on development of small and medium scale energy in the KR approved by Presidential Edict No. 155 of May 2, 2008.

Also, at the moment, the Government is preparing the Concept of development of small scale hydropower of the Kyrgyz Republic for 2015-2017.

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

The principal regulatory bodies in the renewable energy sector are: (i) the Government; (ii) the Ministry of Energy and Industry as a special authorized body for energy, including renewable energy; (iii) the State Agency for regulation of fuel and energy sector under the Government as a body responsible for licensing, establishing tariffs for electricity and simultaneously acting as the antimonopoly body in the field of energy; (iv) the Directorate of the project on development of small and medium scale energy in the Kyrgyz Republic (the “Directorate”) formed by Presidential Edict of 2 May 2008 UP No. 155. The Directorate is controlled by the Government but it is not a state body. The Directorate is vested with the authority to attract investments to new generating capacities and to develop non-traditional and alternative energy sources.

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

Under the Law on Electric Energy, licenses for generation of electric energy from the renewable energy sources are no longer required.

However, under the Law on Electric Energy, the implementation of the renewable energy project requires certain licenses and permits, in particular:

- the license to sell electricity;
- the license to export/import electricity.
- the license to transmit electricity;
- the license to distribute electricity.²

Licenses are issued by the State Agency for regulation of fuel and energy sector under the Government.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

As noted above, at the moment, the generation of electricity from renewable energy sources does not require any license.

Apart from that, under the Law on Electric Energy, no license is required to generate electricity from any sources of energy provided that it is generated for personal use and its capacity does not exceed 1000 kW.

² The transmission and distribution of electricity are not necessarily carried out by the generating company. As a rule, the transmission and distribution of electricity are carried out by the state joint stock companies (National Electrical Grid of Kyrgyzstan, Sevelectro, Vostokelectro, Jalalabadelectro, Oshelectro), which own corresponding high voltage power transmission and distribution lines.

INCENTIVES

7. 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, offering favorable government loans.

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

Kyrgyz law provides that energy generated by renewable energy sources is subject to mandatory purchase by energy companies. According to the most recent amendments to the Law on Renewable Energy, electricity generated from RES and not consumed by the plant owner for its own purposes or not sold to other consumers on a contractual basis must be acquired by the largest power distribution company operating in the administrative territorial unit where the RES plant is located, irrespective of to which company’s power networks this RES plant is connected.

Thus, there is a legislative guarantee of purchase of energy generated. In Kyrgyzstan, there are 4 energy companies: Sevelectro OJCS, Vostokelectro OJSC, Oshelectro OJSC, and Jalalabadelectro OJSC. In all companies the majority shareholding is owned by the state. Energy companies not meeting their obligations to mandatorily purchase the electric power generated by renewable energy sources shall pay compensation to electric power producing companies for lost profit.

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

Under Kyrgyz law, the state sets tariffs for energy generated by renewable energy sources in the amount ensuring recoupment of renewable energy projects within up to 8 years. According to the most recent amendments to the Law on Renewable Energy during the payback period, tariffs for RES electricity should be determined by multiplying the maximum tariff for end consumers by a respective coefficient as specified below:

- for water power plants this coefficient is 2.1;
- for sun power plants this coefficient is 6.0;
- for biomass power plants this coefficient is 2.75;
- for wind power plants this coefficient is 2.5;
- for land power energy this coefficient is 3.35.

Upon expiration of the payback period, tariffs for RES electricity are determined by the State Agency for regulation of fuel and energy sector under the Government for each plant individually based on calculations taking into account the costs of electricity generation and fair profit. The newly determined tariffs for RES electricity are subject to annual indexation according to the procedure defined by Kyrgyz law.

Compensation for additional costs incurred by electric power companies when purchasing RES-generated electricity is taken into account by the State Agency for regulation of fuel and energy sector under the Government when calculating and determining traditional electricity tariffs for electric power companies.

Tariffs for electric and thermal power are set by the State Agency for regulation of fuel and energy sector under the Government. As of July 22, 2015, the following tariffs for electricity are effective:

- (i) for household consumers:
 - (a) 0.7 KGS/kWh if the monthly power consumption is below 700 kWh;
 - (b) 1.82 KGS/kWh if the monthly power consumption is above 700 kWh.
- (ii) for non-household consumers (including industry): 1.97 KGS/kWh.

However, from August 1, 2015, tariffs will be raised and will be as follows:

- (i) for household consumers:
 - (a) 0.77 KGS/kWh if the monthly power consumption is below 700 kWh;
 - (b) 2,16 KGS/kWh if the monthly power consumption is above 700 kWh.
- (ii) for non-household consumers tariff will be 2,24 KGS/kWh.

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

The Kyoto Protocol was duly ratified by the Kyrgyz Republic. The law on the ratification of Kyoto Protocol was adopted on 15 January 2003. Enterprises are required to obtain permits for carbon credits from the State Agency on Environmental Safety. Carbon credits are also subject to a charge. The opportunity of emission trading prescribed by the Kyoto Protocol has not been adopted by the Kyrgyz Republic due to underdevelopment of the relevant market.

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

Kyrgyz law envisages the guaranteed connection of small and medium HPPs to the grid. All power companies must ensure non-discriminatory access to their networks for electric power producers using RES to supply power generated by them to the power network, provided that it meets the required standards. All costs of constructing the power transmission lines up to the point of interconnection to the electric power company's network are borne by the RES plant owner.

The RES plant must be connected to the networks of the power company offering the lowest cost of connection. National electric station networks and power distribution companies must secure unimpeded transit of electric power from the RES producers to consumers.

12. 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. In particular, under the Law on Renewable Energy Sources:

- individuals and legal entities producing or re-equipping renewable energy facilities and devices are granted preferences;
- import and export of renewable energy equipment, systems and components are exempt from customs duties.

The Law on Renewable Energy Sources provides that scientific and technical researches aimed at the development and use of renewable energy sources can be funded with the money from the republican budget to the extent of the

funds provided for by the Law on republican budget for the corresponding year.

13. 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.

The Government of the Kyrgyz Republic promotes the use of renewable energy sources by:

- identifying priorities in the development of RES;
- ensuring the functioning of economic mechanisms and incentives provided by the laws on development and introduction of ecologically friendly technologies or technologies with a low and safe level of waste in the process of RES development, including wells, disposal of substances polluting the environment during the production and use of renewable fuel;
- supporting the construction of independent renewable energy systems in cities and in rural areas to ensure adequate power supply and local participation, and to improve living conditions of the population;
- promoting the activities related to the installation and use of a solar system equipment for hot water supply, heating, cooling and power generation;
- promoting the activities related to the installation and establishment of networks of biogas installations for rational use of organic waste in agricultural production and processing industries;
- supporting the establishment of service centers providing repair and maintenance

services for renewable energy facilities and established systems.

STATISTICS

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

As mentioned above, more than 80% of all electricity in the country is produced by the Toktogul HPPs cascade. The share of small and medium energy sector in the total volume of production does not exceed 0.5%. The use of other types of non-traditional renewable energy sources is insignificant and makes only 0.7% in the energy balance of the country.

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GENERAL

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

Renewable energy resources have historically gained an important role in the balance of primary energy resources in Latvia. In 2012 the share of renewable energy sources in total gross final energy consumption in Latvia comprised 35.8%. The majority thereof was provided by large hydro power plants (Kegums HES, Plavinas HES and Riga HES), while some was generated by wind power plants, biogas power plant, biomass combined heat and power plants, as well as small hydro power plants. The main types of renewable energy resources used in Latvia are hydro energy and solid biomass (wood-pulp). The share of energy generated from renewable energy sources in the entire transport was 2.1% of the final consumption of energy in the transport in 2012 (in 2010 the share of 3.3%, while in 2011 – 3.2% was reached).

According to Part A of Annex I of *Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC*, the objective of Latvia is to increase the share of energy from renewable sources in gross final consumption of energy

from 32.6% in 2005 to 40% in 2020, and to 50% in 2030. Likewise, the objective of Latvia also intends by the year 2020 to achieve at least a 10%, and by 2050 – 12,5% share of renewable energy in gross final consumption of energy in transport.

On 8 June 2015 Latvia among other states of Baltic Sea Region signed the Memorandum of Understanding with the European Commission in order to strengthen the Baltic Energy Market Interconnection plan. One of the key focuses of the Memorandum is to cooperate in realising the full potential of renewable energy.

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

The Energy Law defines renewable energy resources as wind, solar, geothermal, wave, tidal and water energy, as well as aerothermal (thermal energy accumulated in the air), geothermal energy (thermal energy deposited under the surface of soil) and hydrothermal energy (thermal energy found in surface waters), landfill gas and sludge gas and biogas, and biomass.

REGULATION

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

Renewable energy sector is regulated by the following principal laws and regulations:

- Energy Law;
- Electricity Market Law;
- Law on Bio-Fuel;
- Law on Public Utilities Regulators;
- Law on Subsidized Electricity Tax;
- Law on Natural Resources Tax;
- Law on Excise Tax;
- Cabinet of Ministers Regulations No.262 “Regulations on Production of Electricity, by Means of Renewable Energy Resources and Procedure for Determination of Pricing”; and
- Cabinet of Ministers Regulations No.221 “Regulations on Production of Electricity and Determination of Prices, when Generating Electricity in Combined Heat and Power Plants” and other.

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

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

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

Depending on the particular renewable energy project, the following permits/licenses might be necessary:

- building permit (also authorizations for construction at the territorial sea, use of earth entrails, etc.);
- permit for increase of power generation capacity or installation of new generation equipment;
- permit for performance of polluting activities (environmental impact assessment might be necessary as well);
- permit for connection of the power station to the grid, etc.

It has to be taken into account that in order to launch generation of electricity at power stations where the installed electric capacity exceeds 1 MW, or to produce electricity and heat in cogeneration, where the total installed electrical capacity of the cogeneration equipment in the cogeneration power plant is more than 1 megawattone, has to register with the Register of Electricity Producers (but no separate permit/license needed). Similarly, in order to sell electricity to any energy users if the total sales volumes exceed 4,000 megawatt hours per annum, it is necessary to register with the Register of Electricity Traders.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

There is no such concept under the Latvian legislation in the energy sector.

INCENTIVES

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

The Law on Natural Resources Tax provides that:

- hydro power plants are not required to pay natural resources tax for the use of natural resource (water) if their power exceeds 2 MW;
- there are tax exemptions for carbon dioxide gas emissions for stationary technological equipment and aircraft which are included in the EU emissions trading system and meet certain criteria to be able to trade in emissions quotas;
- there is no tax payable for emission of carbon dioxide (CO₂) generated, when using renewable energy resources and peat in certain stationary technological equipment.

The Law on Excise Tax provides for:

- exemptions to diesel made with specified levels of rapeseed oil and used in the agricultural sector.

The Electricity Tax Law states:

- Exemptions are applicable to electricity, produced:
 - 1) from renewable energy resources;
 - 2) in hydroelectric power plants;
 - 3) in combined heat and power plants, corresponding to efficiency criteria set forth by laws and regulations on generation of electricity in combined heat and power process.

Law on Subsidized Electricity Tax provides for:

- reduced subsidized energy tax rate for energy made from renewable energy sources.

8. 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 electrical capacity installed at the wind farm does not exceed 0.25 MW and it is connected to electricity distribution operator's transformer 20/0.4 kV on the side of 4 kV	0.27 %
4.	Power plants, generating or planning to generate wind energy, if power energy is or would be generated in power plants, not mentioned in Point 3 herein above	5.10 %

5.	Biogas power plants	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 %

These costs of electricity produced by renewable resources are accounted for separately by the Regulator, and covered by the end consumers.

Until this year the producers generating electricity by means of renewable energy resources could qualify for state aid by:

- 1) selling the produced electricity to the public trader in the form of mandatory procurable amount of electricity, and
- 2) by selling the produced electricity for a certain price (according to Electricity Market Law).

However, as of 1 January 2015 the state aid to those electricity producers has been limited for a period of 20 years since establishing the power plant. Moreover, the producers who had already used this right prior to 1 January 2015 may no longer qualify for the state aid.

The changes in Electricity Market Law were made in order to avoid providing inequitable benefits to some producers as opposed to others. Since the electricity market in Latvia was opened this year, such practices might have distorted the competition.

The producers generating electricity by means of renewable energy resources may still receive a fee for electric capacity installed (biomass, biogas) (according to Cabinet of Ministers Regulations No.262).

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

There is no such guarantee. However, the producers affected by the changes in Electricity

Market Law described in previous section can sell the electricity for 0,1112 *euro* per kwh for the first 20 years (if they were established until 1 January 2015, and have not used these rights prior to that date).

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

Latvia ratified the Kyoto Protocol in 2002 which came in effect in 2005. In 2005 Latvia also joined the European Union Emission Trading Scheme.

The emission allowances are received by operators (1) whose stationary installations perform certain polluting activities; and (2) whose stationary installations have permits for greenhouse gas emissions granted. The participants of the Emissions Trading Scheme have to conduct monitoring, submit verified emission reports, as well as by a set date deliver such volume of emission allowances to the government which conform to the volume referred to in the verified and approved emission report. If the annual emissions of the operator are lower than the annual emission allowance granted to him, then the operator may sell the surplus emission allowance on the market through the emissions register or accrue them for subsequent years. The operators may also buy emission reduction units (ERU) issued under the Clean Development Mechanism (CDM) and the Joint Implementation introduced by the Kyoto Protocol in order to fulfil their commitments towards the European Emission Trading Scheme.

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

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

12. 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.

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

There are various projects financed from the state budget and EU funds, as according to the Law on Control of Support of Commercial Activity, support is allowed for investments into generation of such energy, which is obtained by means of regenerative resources (energy resources, the renewal whereof is subject to natural processes, — sun, wind, biomass, ground heat and water potential energy), in the amount of up to 60 per cent of costs for investments:

- into land areas, necessary in order to achieve the purposes set for environmental protection; as well as
- into buildings and equipment, necessary, in order to reduce or liquidate pollution and noise; and
- investments, necessary, in order to adjust production technologies to the needs of environmental protection.

STATISTICS

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

Please find below the available information from the Ministry of Economics of the Republic of Latvia on the total share of the electricity generated from renewable energy sources in the gross electricity consumption in Latvia (%).

	2000	2005	2008	2009	2010	2011	2012
Hydropower plants	47,6	47,1	39,9	47,9	46,9	39,3	47,2
Key hydropower plants	47,2	46,3	39,0	46,9	45,9	38,5	46,2
Small hydropower plants	0,4	0,9	0,9	0,9	1,0	0,9	1,0
Biomass power plants	-	0,1	0,1	0,1	0,1	0,2	0,8
Biogas power plants	-	0,5	0,5	0,6	0,8	1,5	2,8
Wind farms	0,1	0,7	0,8	0,7	0,7	1,0	1,5
Total share	47,7	48,4	41,2	49,2	48,5	41,9	52,3

Please also see below the available statistical information from the Central Statistical Bureau of the Republic of Latvia regarding electricity generated from renewable energy sources, GWh.

	2009	2010	2011	2012	2013	2014
Hydroelectric power plants in total	3457	3520	2887	3706	2912	1993
Wind turbines	50	49	71	112	120	141
Biomass power plants	4	9	13	65	215	319
Biogas power plants	44	57	107	222	287	319
Total	3555	3635	3078	4105	3534	2803
Pro rata share	49,22	48,47	41,93	55,03	n/a	n/a

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LITHUANIA



Edvinas Beikauskas

ELLEX

GENERAL

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

The increase of the renewable energy share in Lithuania continually remains as one of the key objectives declared at the level of national energy policy and one of the main strategic pillars established by the National Energy Independence Strategy approved on 26 June 2012, which is highly focused on security of supply, competition of energy markets and sustainable development.

Taking into account the lack of local primary energy sources and dependency on fossil fuel imports, development of alternative energy production is an underlying target for the national energy sector. Renewable energy incentives constitute a part of the groundwork for the upcoming decade to ensure the national energy balance becomes more diversified and more sustainable.

Based on the Directive 2009/28/EC of the European Parliament and of the Council of 23 August 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, Lithuania is obliged to reach a total share of 23% of energy from renewable sources in gross final consumption of energy by 2020.

Following national energy policy strategies and international commitments, the Law on Renewable Energy, transposing the Directive 2009/28/EC, established minimum rates for the renewable energy share to be reached by 2020 in each specific sector, and in particular – at least 10% of gross final energy consumption in the transport sector, at least 20% in the electricity sector, and at least 60% in district heating and 80% in household heating.

With regard to the above mentioned objectives, strategic guidelines aim at reaching up to 18.6 % of renewable energy share in final energy consumption during 2015 – 2016. Statistics shows that growth of renewable energy is in line with strategic guidelines and even more successful than expected, thus in 2013 the share of energy from renewable sources was equal to 22.95% (in % of gross final energy consumption)¹. It means that Lithuania is less than 0.5 percentage points from its 2020 target. In the last several years, the use of renewable energy was growing in all sectors. The growth in the electricity sector was mainly determined by installed - new wind power plants, in the heat sector – new biofuel boilers and in the transport sector - mandatory requirements for fuel blending.

¹ <http://ec.europa.eu/eurostat/documents/38154/4956088/SHARES-2013-RESULTS.xlsx/216206e5-d337-48b1-8853-182f872899d0>

In 2013, the total electricity demand of 11,964 TWh was fulfilled by 5,112 TWh of local electricity generation (exported 0,783 TWh) and rest of electricity demand was fulfilled by 7,538 TWh of imported electricity. While the biggest stake of local electricity generation in Lithuania depends on imported fossil fuels that equals approximately 61,4% of local generation, the share of renewable energy sources is also constantly increasing and in 2013 covered approx. one third of total local electricity generation (excluding electricity generated by the Kruonis HPSP). The major part of electricity from renewable energy sources is produced by hydro power plants and wind power plants.

It may be well declared that the biggest potential of renewable energy development in the Lithuanian electricity sector lies with biomass and wind energy. It is expected that electricity generation using biomass could be increased over four times by 2020, comparing to the level of installed generation capacities in 2011. However, the fastest market expansion up to now has still been focused on wind energy facilities, given the established support schemes and private business initiatives. At the end of 2013 there were approximately 281.7 MW of total installed capacity of wind power plants in Lithuania. Taking into account that promotion quota for wind power plants (500 MW of installed capacity) is already given to producers through quota auctions, thus it is well expected to increase this stake significantly up to 500 MW in a short-term.

Under the Lithuanian legislation currently in force, only the development of small hydro power plants is legitimate, as specific environmental safety regime is established due to the ecosystems of the larger rivers. Currently Kaunas HPP of 100.8 MW installed capacity and smaller hydro power plants with capacity of 27 MW are operated in Lithuania. Irrespective of the said restraints reconstruction of older generation facilities

and development of new projects are expected to trigger a slight increase of the hydro energy share by 2020.

In the heating sector the share of renewables equaled approximately 37.72% of the fuel consumed for heating (and cooling) in 2013, compared to the majority of the remaining share left for fossil fuels and small share of other fuels. However, regulatory and business initiatives aim at reallocation of these shares: targeting for up to 45% of renewable energy sources in fuel balance for heat production. Especially it is aimed to increase amount of renewable energy sources in the district heating sector to 70% in 2020. Given the absolute majority of the current renewable share is covered using biomass fired power plants, including wood and wood-waste, agricultural produce waste and biogas, the usage of biomass for heat energy generation could be well developed by increased exploitation of wood lumber waste, short rotation sprouts, straw, utility waste and biodegrading waste.

In the transport sector the share of renewable energy reached up to 4.65% in final energy consumption for transport in 2013 (mainly by blending bio-fuels and small share of electricity usage in public transport). The main raw materials used for bio-fuels is rape and grain crops.

In 2012 there were 2 GWh of solar energy generated and supplied to the grid (in 2011 – 76 MWh). The installed capacity of solar power plants increased up to 68.3 MW in 2013, while in 2012 the capacity was only 7.5 MW of operating solar power plants. Such an explosive growth occurred due to regulatory loopholes and high feed-in tariffs. Therefore, in 2013 certain regulatory changes were made, which basically have stopped further uncontrolled expansion of solar power plants.

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

Following Article 2(a) of the Directive 2009/28/EC, the Law on Renewable Energy provides the definition of renewable energy sources covering wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.

Moreover the Lithuanian law extends the primary concept of renewable energy sources, thus covering “any other renewable non-fossil energy sources, exploitation of which is technologically feasible or will be feasible in the future”. Such extended definition enables the energy policy decision makers to apply relevant legislation for the benefit of new technologies becoming available for commercial use of energy production.

However, despite the renewable energy definition in force, for the purposes of electricity generation, currently the limited scope of power plants does fall under the established support framework: wind, biomass and solar power plants, as well as hydro power plants not exceeding 10 MW of installed capacity may only apply for support schemes, including fixed price (feed-in tariff) and other related guarantees, secured by the State.

REGULATION

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

In Lithuania the renewable energy sector is mainly regulated by the State, establishing general principles for development of renewable energy generation capacities, commercial activities of energy production and energy trading. Regulations of the renewable energy sector also include the framework for

the promotion of energy from renewable sources, or the support schemes secured by the State for renewable energy companies.

The regulatory framework of the renewable energy sector in Lithuania is structured based on the Law on Renewable Energy (adopted in 2011 as further amended), which transposes the Directive 2009/28/EC into the national law, as well as on other laws adopted by Parliament and promulgated by the President.

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

- The Law on Renewable Energy (adopted on 12 May 2011 as further amended) establishes legal background for public management, regulation, supervision and control of the renewable energy sector, as well as the basic principles for commercial activities in the renewable energy sector. The Law aims at sustainable development in the use of renewable energy sources, promotion of new energy generation technologies, and increased consumption of energy from renewable sources. The Law structures general national framework, i.e., schemes and legal instruments, for support of renewable energy;
- The Law on Implementation of the Law on Amendments and Supplement to the Law on Renewable Energy adopted on 17 January 2013. The key objective of this law is to review and slow down the uncontrolled expansion of small capacity solar power plants that occurred due to regulatory loopholes and extremely high feed-in tariffs during 2012. This law aims at changing the validity period of certain issued permits to develop electricity generation capacities for solar power plants, feed-in tariff application rules, as well as respective rights and obligations of developers active in the solar energy sector;

- The National Energy Independence Strategy, approved by the Parliament on 26 June 2012, sets key objectives for the Lithuanian energy sector for the period leading up to 2020 and outlining the vision of the energy sector up until 2050. As a task for development of the national energy sector, the Strategy *inter alia* targets an increase of the share of renewable energy sources in final gross consumption of energy;
- The Law on Energy (new wording adopted in December 2011, as further amended) establishes objectives of the State energy sector regulation, including promotion of the use of local and renewable energy sources as one of the principal objectives. The competence of the Government, as well as the competence of other public authorities acting within the energy sector is established;
- The Law on Electricity (new wording adopted in January 2012, as further amended) establishes the principle of public service obligations in the electricity sector related to the public safety, environmental safety, diversification of energy sources, as well as renewable energy generation; and
- The Law on Heat Sector (new wording adopted in 1 January 2008 as further amended) establishes the principle of promotion for usage of local fuel, bio-fuels and renewable energy sources for the heat energy generation. It is stated that the Government and local municipalities shall ensure support for take-off (purchase guarantee) of the heat energy produced using renewable energy sources, waste combustion and geothermal energy. Such take-offs are determined as a public service obligation.

Basic provisions established in the laws are further elaborated in a more detailed procedural level by the secondary legislation acts adopted by the Government, the Ministry of Energy, the

National Control Commission for Prices and Energy (National Regulatory Authority), or other competent public authorities.

By June 2015 the core secondary legislation acts establishing the legal background for renewable energy are as follows:

- The National Strategy for the Development of Renewable Energy Sector (adopted by the Government in 2010) defines strategic energy policy objectives with regard to increased use of energy for renewable sources. The Strategy also establishes targeted annual rates of renewable energy share in final gross consumption of energy in electricity, district heating and the transport sector. The Strategy is considered for update following the relevant provisions of the Law on Renewable Energy;
- The Regulation on the Promotion of the Use of Renewable Energy Sources for the Production of Energy (adopted by the Government in July 2012) regulates in detail the practical implementation of the renewable energy support schemes (mechanisms) set under the Law on Renewable Energy and therefore establishes general criteria, requirements, procedures and conditions for energy producers intending to apply for support schemes designed to promote the use of renewable energy sources;
- The Resolution on the Approval of Support Quotas and Auction Zones for the Use of Renewable Energy Sources for Production of Electricity (adopted by the Government in July 2012) establishes maximum support quotas for wind power, solar power, hydropower, and for biomass – applied as a cap limit for possible application of support schemes for the use of renewable energy sources for production of electricity. This Resolution also defines the auction

zones for allocation of respective support quotas among potential investors to renewable energy sector;

- The Resolution on Provision of Public Service Obligations in the Electricity Sector (adopted by the Government in 2012 as further amended) sets a complete list of activities in the electricity sector determined as the public service obligations, including electricity generation using renewable energy sources;
- The Regulation on Administration of Funds of Public Service Obligations in the Electricity Sector (adopted by the Government in 2012, as further amended) establishes the legal principles and procedures for the administration, collection and payment of funds of public service obligations, including payment of funds (as feed-in tariff) for electricity produced using renewable energy sources;
- The Regulation on Reimbursement of Costs Related to Solar Power Plant Project Development (adopted by the Government in 2013, as further amended) establishes the procedures for costs reimbursement for solar power plants developers who were affected by regulatory amendments which slowed down the uncontrolled expansion of small capacity solar power plants;
- The Rules of Trade in Electricity (new wording adopted by the Ministry of Energy in June 2012) establish the principles and procedures for trade in electricity in the wholesale market, including bilateral contracts, power exchange, balancing services and power reserve capacities;
- The Regulation on Connection to the Power Grid of the Energy Objects of Electricity Consumers and Producers (adopted by the Ministry of Energy in 2012) establishes procedural requirements for connection of power plants and other electrical facilities to the existing power grids operated by the transmission or distribution system operators;
- The Technical Rules of Connection of Wind Power Plants to the Electric Power System of Lithuania (adopted by the Ministry of Economy in 2004) establish specific technical requirements for connection of the wind power plants to the existing power grids;
- The Rules of Issuance of Permits for Activities in the Electricity Sector (adopted by the Ministry of Energy in 2013, as further amended) establish procedural requirements concerning application for and issuance of permits for activities in the electricity sector, including development of power plants and production of electricity;
- The Resolutions adopted by the National Control Commission for Prices and Energy on establishment of the State regulated feed-in tariffs for electricity generated using renewable energy sources. Starting from 1 February 2013 a quarterly setting of the feed-in tariffs substituted the previous annual regulatory practice;
- The Rules of Auctions for Allocation of Support Quotas (adopted by the National Control Commission for Prices and Energy in 2011, as further amended) establish principles and detailed procedural requirements for competitive and transparent allocation of support quotas for development of renewable energy capacities with guaranteed support schemes;
- The Rules of Financing the Development of the Bio-fuels Production (adopted by the Ministry of Agriculture in 2008, as further amended) establish a support scheme for bio-fuel producers from the rape and grain crops; and

- The Regulation on Conditions and Rules for Submission and Use of Security for the Performance of Obligations of Producers of Energy from Renewable Resources (adopted by the Ministry of Energy in February 2013, as further amended) establishes rules and conditions for submission and use of security for the performance of obligations undertaken by developers of electricity generation capacities in solar power plants not exceeding 30 kW of installed capacity.

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

The principle State authorities, performing the functions of public regulation, control and supervision of activities within the energy sector, including their competences, rights and obligations, are designated by the Law on Energy and other legal acts as described in detail hereinabove. Regulatory competencies within the renewable energy sector are further specified in the Law on Renewable Energy.

The principal regulatory bodies active in the renewable energy sector in Lithuania are as follows:

- *Government* – forms the energy policy of the State; submits the draft National Energy Independence Strategy for consideration and adoption by Parliament; adopts the National Program for Development of Renewable Energy Sources; has a right to adopt the principles for establishment of the State regulated energy prices; establishes terms and conditions for application of renewable support schemes; regulates provision of public service obligations etc.;
- *Ministry of Energy* – implements the national energy policy tasks; ensures international cooperation in the field of energy policy; drafts and reviews the National Energy Independence Strategy; establishes the requirements for connection of power plants to the existing electricity grids; adopts secondary legislation acts for electricity and heat energy sectors; controls implementation of public service obligations, including trade in electricity produced from renewable energy sources, etc.;
- *Ministry of Environment* – makes principal decisions regarding environmental protection, environmental impact assessment for construction of power plants; participates in preparation of renewable energy sources programs, etc.;
- *Ministry of Transport* – drafts the programs and implements the measures for effective usage of energy resources in the transport sector, etc.;
- *Ministry of Agriculture* – is responsible for the development of production of flammable liquid products produced from biomass; promotes cultivation of plants used for production of biofuel, bio-fuels for transport and bio-oils; prepares programs for promotion of and support for agriculture sector in usage of bio-fuels and bio-oils, etc.;
- *National Control Commission for Prices and Energy* – establishes the methodologies for calculation of the State regulated energy prices; establishes the price caps for the State regulated energy prices; establishes the connection fees to the existing power grids; establishes the regulated prices (feed-in tariffs and maximum tariffs for capacity auctions) for electricity from renewable energy sources; adopts the rules of and announces auctions for allocation of support quotas for development of renewable energy capacities with guaranteed support schemes; issues licenses for activities in the energy sector; controls effective unbundling and non-discriminatory activities of energy companies, etc.;

- *State Energy Inspectorate under the Ministry of Energy* – issues permits for activities in the energy sector (except for independent supply of electricity); issues the certificates for technical exploitation of the energy objects, including power plants; controls technical safety of energy generation facilities; performs official inspections of energy objects, etc.; and
- *Local Municipalities* – within their competence established by laws regulate supply of heat energy to the end consumers, etc.

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

The following permits are required for electricity generation issued by the State Energy Inspectorate under the Ministry of Energy (from 1 July 2015):

- Permit for development of electricity generation capacities - required in case new power units are intended for construction, or any extension of the existing capacities is planned. For renewable energy plants, developers to whom promotion quota and feed-in tariff apply, the permit for development of electricity generation capacities is issued after winning the quota auction and allows to start to develop project for 36 months (until 1 July 2015 it was 24 months period) with some possible extensions;
- Permit for generation of electricity - required in each case for commercial activities related to the generation of electricity. From a renewable energy promotion point of view, the generation permit is crucial as feed-in tariff shall be paid from the issue of the generation permit.

Other types renewable energy projects may require different permits/licenses.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

The aforementioned permits are not required if an electricity producer with an installed capacity of up to 10 kW produces electricity only for its own needs and does not provide generated electricity into the grid.

INCENTIVES

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

The tax advantages in Lithuania may be designated for certain groups of taxpayers, also including energy generation companies, solely on the basis of a specific law establishing certain tax as adopted by the Parliament and promulgated by the President.

Under the Lithuanian legislation currently in force, the specific tax advantages for renewable energy generation are established under the Law on Excise (adopted in 2001, as further amended). The law provides that electricity generated using renewable energy sources is free from excise tax. This principle includes both domestically produced and imported electricity. Further, the Law on Excise indicates that dehydrated ethyl alcohol for use in biofuels and/or its components and/or the production of biofuels is also free from excise tax. Moreover the same law provides excise tax exemption conditions for energy products made from biomass.

Additionally, renewable energy generation companies potentially may apply for general tax advantages depending on their activities or other criteria established by laws, though this does not presume for specific tax advantages related to usage of renewable energy sources.

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

Taking into account continual changes in the regulatory scheme during the past couple of years, several groups of the renewable electricity producers may be distinguished for the purposes of the purchase guarantee.

The first group are the producers to whom a permit to develop electricity generation capacities was issued not later than 23 May 2011 (i.e., before entrance into force of the Law on Renewable Energy), the power plants of which do not exceed 250 kW of installed capacity, and the producers, whose permit to produce electricity was issued from 24 May 2011 for power plants the installed capacity of which does not exceed 30 kW. All electricity generated by these producers and supplied to the electricity grid must be purchased by the energy company nominated by the Ministry of Energy or, if a producer requires, by public supplier for feed-in tariff set by the National Control Commission for Prices and Energy.

The other group are the remaining producers not indicated above (e.g., whose permit to produce electricity issued from 24 May 2011 for power plants which capacity is more than 30 kW and etc.). They have a right to sell all electricity generated and supplied to the electricity grid for the energy company nominated by the Ministry of Energy or energy suppliers for the market price and later to obtain the compensation for the remaining margin between the contract price and the feed-in tariff. That means that the purchase guarantee for these producers is optional and is implemented rather as ability to sell electricity in a centralized manner.

Following legislative amendments, which came into effect from 1 February 2013, producers

with installed capacity up to 10 kW producing electricity for their own needs and producers with more than 10 kW of installed capacity are now distinguished. Therefore, a purchase guarantee is ensured also for electricity consumers producing and using electricity from renewable energy sources for their own and/or household needs with installed capacity is up to 10 kW. It is ensured that the surplus electricity remaining from those producers' own and/or household needs (but not more than 50% of total electricity generation per year) shall be purchased by the public supplier in case the consumer fails to agree with any independent supplier or insists for purchase guarantee by the public supplier. The feed-in tariff for this electricity is set by the National Control Commission for Prices and Energy and ensured for no longer than 12 years period.

The amendments of the Law on Renewable Energy dated 9 December 2014 provided dual metering rules for consumers having small solar power plants. Net purchase and sale metering allows for electricity consumers with solar systems up to 10 kW and budgetary and public institutions in its buildings having systems up to 50 kW to export produced electricity into the electricity grid. Following this regime after one month billing period, the customer receives a bill for net electricity, which is the amount of electricity consumed minus the amount of electricity produced and exported by the utility customer's photovoltaic system. In case during the month consumer produces more electricity than consumed the surplus amount of electricity is transferred for next month billing period. The amount of electricity produced and provided into the grid which exceeds consumed amount of electricity during the ongoing year is not transferred for the next year and such consumer does not receive any payments for it. The law limits total amount of such power plants up to 10 MW.

The costs incurred by the energy company nominated by the Ministry of Energy or public supplier due to the said purchase guarantee are designated as public service obligations and are being respectively evaluated each year while establishing the tariff for grid services. The price guarantees for renewable electricity generation is discussed in detail herein below.

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

The Law on Renewable Energy introduced fundamentally reviewed framework for the promotion of energy from renewable sources which was amended in the beginning of 2013. The support scheme applicable to electricity producers, operating wind, biomass and solar power plants, as well as hydro power plants not exceeding 10 MW of installed capacity, is generally based on fixed price guarantee (feed-in tariff), which may be applied under couple of regimes.

As for the first case, the feed-in tariffs are applied to renewable energy companies having valid permit for development of renewable power generation capacities or permit to produce electricity issued before adoption of the Law on Renewable Energy. This allows securing the fixed price guarantee for companies that have been already granted with respective support schemes before regulatory changes in 2011.

For the aforementioned companies, the maximum feed-in tariff which was applicable in 2011 applies (except for solar power plants - if producer had not applied for generation permit until 1 July 2013, in that case applies feed-in tariff valid on the day the generation permit is issued). Such feed-in tariffs for each group of supported renewable energy producers was established by the National Control Commission for Prices and Energy and shall remain in effect for a 12 year support period.

Until adoption of amendments of the Law on Renewable Energy which have come into effect from 1 February 2013 the feed-in tariffs were applied to all renewable energy companies, irrespective of the moment of granting the support scheme, i.e., before or after adoption of Law on Renewable Energy, that produce electricity in power plants not exceeding 30 kW of installed capacity. Since 1 February 2013 new permits to develop electricity generation capacities in power plants not exceeding 30 kW of installed capacity are no longer being issued, however producers already holding issued permits to develop electricity generation capacities in power plants not exceeding 30 kW of installed capacity are provided with the right to feed-in tariff.

Since 1 February 2013, electricity producers who produce and use electricity from renewable energy sources for their own and/or household needs with installed capacity up to 10 kW surplus electricity remaining from those producers' own and/or household needs (but not more than 50% of total electricity generation per year) shall be purchased for fixed feed-in tariff at the rate applicable on the day of electricity supplies to the grid.

For the second case, the feed-in tariff guarantee may be applied by new market entrants, as well as by renewable energy companies developing new power generation capacities or the ones without formerly granted support schemes. The quota auction (as well sometimes called capacity auction) model was introduced by the Law on Renewable Energy aimed at transparent allocation of limited capacity quota with secured support schemes and increase of competition among renewable energy companies.

The Law on Renewable Energy indicates the targeted capacities for generation of energy using renewable sources to be reached by 2020, and being determined as top quotas with the State guaranteed support instruments.

These quotas are divided for each of renewable sources with biggest stake of 500 MW for wind power plants, 10 MW for solar power plants, 141 MW for hydro power plants and 105 MW for biomass power plants.

Renewable energy companies (until 31 January 2013 exceeding 30 kW of installed capacity and since 1 February 2013 exceeding 10 kW of installed capacity) may apply for capacity quotas with the State guaranteed support scheme through the auctions organized and announced by the national regulatory authority – the National Control Commission for Prices and Energy.

All perspective renewable energy developers participating in the auction are required to declare the proposal for a feed-in tariff which does not exceed the maximum feed-in tariff approved by the National Control Commission for Prices and Energy. The winning bidder is the one with the least feed-in tariff required.

Such auction model was established seeking to ensure transparent allocation of limited quotas with equal rights of participation to all renewable energy companies and also to ensure price competition between different technology suppliers. The feed-in tariff declared by the winning bidder is guaranteed unchanged by the State for 12-year support period.

The National Control Commission for Prices and Energy quarterly sets the rates of feed-in tariffs and maximum tariffs for capacity auctions. For 1 April 2015 – 30 June 2015 the surplus electricity feed-in tariffs, maximum tariffs and feed-in tariffs under prolonged development permits for the electricity produced using different type of renewable sources are set as follows:

- Hydro energy power plants up to 10 kW of installed capacity for surplus electricity –

0.078 EUR/kWh; tariff for producers up to 30 kW of installed capacity – 0.070 EUR/kWh; maximum tariffs for power plants from 10 kW up to 350 kW and from 350 kW up to 1000 kW of installed capacity – 0.070 EUR/kWh; from 1000 kW of installed capacity – 0.061 EUR/kWh;

- Wind energy power plants – up to 10 kW of installed capacity for surplus electricity – 0.078 EUR/kWh; tariff for producers up to 30 kW of installed capacity – 0.075 EUR/kWh; maximum tariffs for power plants from 10 kW up to 350 kW of installed capacity – 0.075 EUR/kWh; and from 350 kW of installed capacity – 0.061 EUR/kWh;
- New biomass power plants – up to 10 kW of installed capacity for surplus electricity – 0.081 EUR/kWh; tariff for producers up to 30 kW of installed capacity – 0.070 EUR/kWh; maximum tariffs for power plants from 10 kW up to 350 kW and from 350 kW up to 5000 kW of installed capacity – 0.070 EUR/kWh; from 5.000 kW of installed capacity – 0.064 EUR/kWh;
- Reconstructed biomass power plants – up to 10 kW of installed capacity for surplus electricity – 0.064 EUR/kWh; maximum tariffs for power plants from 10 kW up to 350 kW and from 350 kW up to 5.000 kW of installed capacity – 0.055 EUR/kWh; from 5.000 kW of installed capacity – 0.049 EUR/kWh);
- Landfill biogas power plants up to 10 kW of installed capacity for surplus electricity – 0.113 EUR/kWh; tariff for producers up to 30 kW of installed capacity – 0.110 EUR/kWh; maximum tariffs for power plants from 10 kW up to 350 kW and from 350 kW up to 500 kW of installed capacity – 0.110 EUR/kWh; from 500 kW of installed capacity – 0.087 EUR/kWh;

- Biogas (obtained by anaerobic method or otherwise processing biodegradable organic waste or substrates) power plants up to 10 kW of installed capacity for surplus electricity – 0.145 EUR/kWh; tariff for producers up to 30 kW of installed capacity – 0.133 EUR/kWh; maximum tariffs for power plants from 30 kW up to 350 kW and from 350 kW up to 500 kW of installed capacity – 0.133 EUR/kWh; from 500 kW up to 1.000 kW of installed capacity – 0.125 EUR/kWh; from 1.000 kW up to 2000 kW of installed capacity – 0.119 EUR/kWh; from 2.000 kW of installed capacity – 0.116 EUR/kWh and
- Solar (photo) energy power plants – up to 10 kW of installed capacity: for surplus electricity 0.2 EUR/kWh for power plants integrated into building and 0.156 EUR/kWh for not integrated into building; tariff for producers up to 30 kW of installed capacity – 0.180 EUR/kWh for power plants integrated into building and 0.142 EUR/kWh for not integrated into building; maximum tariff for power plants integrated into building over 10 kW starts from 0.168 EUR/kWh up to 0.18 EUR/kWh and for power plants not integrated into building starts from 0.133 EUR/kWh up to 0.142 EUR/kWh.

The auction model for allocation of capacity quotas and support scheme was introduced by the Law on Renewable Energy in 2011; however, in the beginning it was not developing very fast in practice. The very first auctions started in the end of 2012 and the peak thereon was in the first half of 2013.

A completely different situation appeared for solar power plants, the installed capacity of which does not exceed 30 kW, where expansion started grow uncontrollably. Since the adoption of the Law on Renewable Energy there has been introduced favorable conditions and high feed-in tariffs (especially for solar power plants) there were 4,710 permits to develop electricity generation capacities for

solar power plants the installed capacity of which does not exceed 30 kW issued until 12 December 2012. As this growth was based on high feed-in tariffs this meant a dramatic future growth of electricity price for final electricity consumers.

In the beginning of 2013 amendments to the Law on Renewable Energy and the controversial Law on Implementation of Amendments and Supplement to the Law on Renewable Energy were adopted following unprecedented expedited Parliamentary procedures. Key provisions of these laws are those regarding changing the validity period of issued permits to develop electricity generation capacities for solar power plants and changing the fixed feed-in tariff. It required that producers having the aforementioned permits must provide requests to issue generation permits (e.g., to finalize construction and installation of the power plant, and to prepare it for full operation) until 1 July 2013 (with possible extension for no longer than 7 month if more than 50% of project investments are made), while general rule applied before provided that permits to develop electricity generation capacities are valid for 24 months from their issue.

Most importantly it included clauses determining retroactive effect for feed-in tariffs, i.e., it has changed the rule, which ensured that feed-in tariff was fixed for producer at the day of issue of the permit to develop electricity generation capacities and will not be changed for 12 years since generation permit is obtained. It was determined that for producers who have provided requests to obtain permits to develop electricity generation capacities until 31 December 2012 and have obtained permits to produce electricity until 31 January 2013 for 12 years will apply feed-in tariffs which were applicable at the time of issue of the permits to develop electricity generation capacities. However for producers who have provided

requests to obtain permits to develop electricity generation capacities until 31 December 2012 and have not obtained permits to produce electricity until 31 January 2013 for 12 years will apply feed-in tariffs, which will be applicable at the time of issue of the permits to produce electricity.

Taking into account that feed-in tariffs and maximum tariffs for solar power plants were significantly reduced in the beginning of 2013, it determined a negative reaction in the market as the aforementioned changes conditioned that feed-in tariff was retrospectively reduced for a large number of persons holding permits to develop electricity generation capacities in solar power plants which previously did possess higher guaranteed feed-in tariff. Disputes regarding such legislative changes and their practical implementation were initiated in court, although adopted rulings and outcomes are not favorable to producers.

It should be noted that the aforementioned regulation indicated that producers whose validity of the permit to develop generation capacities will not be prolonged (for additional up to 7 month from 1 July 2013) as well producers who will not apply for such prolongation shall have a right for reimbursement of direct losses due to development of the solar power plant. A special purpose commission was formed by the Ministry of Energy and special rules adopted for this procedure in order to deal with evaluation of on-going projects, the level of their actual development, possible prolongations of permits to develop generation capacities, and possible compensations for non-developed projects due to respective legal amendments.

In case the support schemes are not applied to the electricity generated using renewable energy sources, whether because of non-supported energy generation or exceeding the quotas established by the Government, such electricity must be traded under bilateral

agreements or through the power exchange with no minimum price guarantees.

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

Lithuania ratified Kyoto Protocol to the United Nations Framework Convention on Climate Change on 3 Jan 2003 and it has entered into force on 16 Feb 2005. Up to now Lithuania has been successfully implementing the obligations imposed by the Kyoto Protocol.

As an EU member Lithuania participates in EU emissions trading system - system for trading greenhouse gas emission allowances. A greenhouse gas emission allowance trading is regulated by number of EU and national legislation. The Law on Financial Instruments for Climate Change Management adopted on 7 July 2009 by the Lithuanian Parliament is the main national law regulating the order of trading in greenhouse gas emission allowances and Kyoto units (i.e., assigned amount unit, emission reduction unit or certified emission reduction unit).

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

In Lithuania the renewable energy based power plants do have a priority for connection to the electricity grid comparing to other power generation capacities. In other words the part of free capacities of the power grid is required to be reserved for renewable energy based power plants during the project development period which is generally equal to 24 months after issuance of the permit for development of renewable energy capacities and may be extended on case by case basis following legal terms and conditions in force.

Also due to technological specificities, namely the installed capacity of generation facility, the

renewable energy based power plants potentially may be subject to less stringent construction planning and authorization regime, as it may significantly shorten the project preparation phase.

Under the Lithuanian legislation the grid operator is obliged to connect the energy producers or consumers after all necessary planning and authorization procedures are duly passed. The sole legitimate precondition for rejecting the connection application is technical inability criteria of the grid and energy system. The operators are required to issue design conditions, including technical requirements for connection to the grid, before the design procedure.

Renewable energy based power plants have a guaranteed discount for the grid connection fee equal to 60% of the total connection price for the power plants exceeding 350 kW and 80% for those not exceeding 350 kW. Previously cost-free connection of power plants not exceeding 30 kW of installed capacity was rejected from 1 February 2013 following recent amendments to the Law on Renewable Energy.

The connection fee discount is estimated on the basis of the contract price of the procured contractor for the connection works. The connection fee discount is covered by the grid operator and each year being reckoned into the energy tariffs as a public service obligation.

It has to be also emphasized that the abovementioned connection fee discount, as well as any other incentives for renewable energy generation, are applied solely for the said power plants falling within the scope of renewable energy support scheme.

12. 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.

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

Under Lithuanian legislation currently in force, the grid operators are obliged to ensure the priority transport of electricity generated using the renewable energy sources through the power grids in case the capacities of the latter are limited.

In addition to that, the abovementioned renewable energy based power plants that do fall under the renewable energy support scheme are not required for ensuring the reserve capacities or energy generation balancing services. During the entire period of

support scheme applied the responsibilities for reserve and balancing are being undertaken by the transmission system operator.

It could be also emphasized that the EU support mechanisms could be applied irrespective of national schemes in force. In this case it should be noted that granting of the EU financing for infrastructure investments to the renewable energy sector in Lithuania may preclude in certain cases from applicability of the feed-in tariff and the purchase guarantee, as doubled financing of renewable energy projects is not allowed under the Lithuanian legislation.

STATISTICS

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

In 2013 there were 5,112 TWh of electricity generated in Lithuania. 61.4% of it was generated from fossil fuel, 27.8% using renewable energy sources and 10.7% by the Kruonis Pumped Storage Plant.

There were 36.3% of whole generated electricity using hydro power sources, 42.1% using wind power sources, 15.5% using biomass power sources, 3% using biogas, 3.2% by solar power plants.

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MACEDONIA



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GENERAL

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

The importance of renewable energy in the Republic of Macedonia is expressed through the fact that the promotion of the consumption of Renewable Energy Sources is set out as one of the key targets that must be ensured by the Energy Law. According to this Law, the Government of the Republic of Macedonia is obligated to create a policy of consumption of the Renewable Energy Sources by establishing a Strategy on Renewable Energy Sources. This Strategy is proposed by the Ministry of Economy and enacted by the Government of Republic Macedonia each 5 years; and it refers to the period of the next 10 years. Drafting this Strategy on Renewable Energy Sources is financed by the State.

For the purpose of the implementation of the Strategy for Renewable Energy Sources the Government of the Republic of Macedonia, upon the proposal of the Ministry, passes an action plan for the renewable energy for a period of ten years. This Action plan defines the action for improvement of the consumption of the renewable energy sources.

Every two years the Ministry of the economy prepares a Report on the implementation of the action plan for Renewable Energy Sources in the past period. If, based on the findings of the report, it is found that the planned annual dynamics have not been realized, the Ministry has to propose to the Government of the Republic of Macedonia additional actions and adequate modifications to the Action plan.

The Government of the Republic of Macedonia passes a decision which provides the goals and the annual dynamics of the growth of the share of the energy from the renewable sources in the final energy consumption, in accordance with the Action plan for the Renewable Energy Sources and the obligations undertaken by the Republic of Macedonia upon the ratified international agreements.

The Energy Agency is the body which provides support to the Ministry in the preparation of the Strategy on the Renewable Energy Sources and the Action plan for renewable energy sources.

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

The matter of the Renewable Energy Sources is covered by the Energy Law in a special chapter titled “Renewable energy sources”.

Definition: Renewable Energy Sources are non-fossil energy sources, i.e., hydropower, wind, solar, aero thermal, hydrothermal and geothermal energy, biomass, landfill gas, biogas and gas obtained from sewage treatment plants and biomass.

REGULATIONS

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

The renewable energy sector is regulated within the framework of the integral energy sector. The principal provisions and regulations could be found in the Energy Law.

The implementation of the Law is ensured by the regulation which includes: Rulebook for Renewable energy sources; Rulebook on the guarantee of origin of the electricity produced from Renewable Energy Sources; Rulebook for acquiring of status of preferential/privileged producer of electricity from Renewable Energy Sources; Regulation for connection for the national grid; Manual for construction and operation of wind mills and the Rulebook on the method and procedure for establishing and approving the use of feed-in tariffs for electricity produced from biomass, small hydro power plants, wind power plants and photovoltaic systems.

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

The principal regulatory bodies in the Renewable Energy Sector are the Government, the Ministry of Economy (Energy Department), the Energy Agency and the Energy Regulatory Commission.

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

The main permits/licenses required for production of electricity from renewable energy sources are: License for the production of electric energy and Certificate for privileged producer of electric energy from renewable energy sources.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

The generation of electricity solely for the purposes of the producer of electricity is exempt from licensing on the condition it is not transferred through the electric distribution system.

INCENTIVES

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

According to the Energy law it is predicted that the tax advantages should present one of the measures for supporting the implementation of the Strategy on Renewable Energy Sources, and, the preferential VAT tax rate of 5% is determined (apart to the general one of 18%) for trading and importing thermal solar systems and their components. No other tax advantages are determined so far in respective legislation.

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

Yes, the operator of electricity, which is a state owned company, is obliged to purchase the total quantity of electricity generated by Renewable Energy Sources which is delivered by privileged producers.

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

Yes, in Macedonia there are guaranteed feed-in tariffs for electricity production from Renewable Energy Sources determined by the Regulatory Commission for Energy.

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

The Kyoto Protocol was ratified by the Parliament of the Republic Macedonia in February 2004 and the ratification was deposited to the Secretary-General of the UN on 18 November 2004. The protocol entered into force with respect to Macedonia on 16 February 2005. In 2007 the Macedonian government adopted a National strategy concerning the Clean Development Mechanism pursuant to the Kyoto protocol with the goal of encouraging domestic companies to participate in the carbon credits market. At the same time, the Parliament passed an amendment to the Law on environment which gave the Ministry of environment additional legal instruments to further promote carbon trading and assist the interested parties in finding foreign partners.

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

The Energy Regulatory Commission of the Republic of Macedonia may request that the relevant Operator cover the expenses for connection to the grid of the producers that require it, and the latter will be able to return these costs through the price of services.

12. 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.

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

Pursuant to the Energy Law it is set out that the certain measures for supporting the implementation of the Strategy on Renewable Energy Sources could apply, especially: investment financial support, tax advantages, guaranteed purchase of the total quantity of electricity delivered by the privileged producer and an obligatory sell of the mixture of fossil fuels and bio fuels, issuance of guarantees of origin of the electricity produced from Renewable Energy Sources, Feed-in tariffs for the electricity generated by Renewable Energy Sources, and increase of the prices which consumers are paying for consumption of the Renewable Energy Sources .

The Energy Law also provides that the implementation of these measures could be financially supported by the State.

STATISTICS

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

In the Republic of Macedonia the actual production of renewable energy covers hydro energy, solar energy, geothermal energy, biomass and biofuel.

According to the State Statistical Office preliminary data for 2013, the percentage of electricity generated from renewable sources in

the total electricity production is 26,1%, compared to 2012, when it added up to 16,7%. Hydroelectricity participates with 9.9% and Biomass with 10.66% in the total generation of electricity in Macedonia. Geothermal heat accounts for 0.66% of the total electricity production, while participation of biofuel and solar energy in the total generation of electricity for 2013 is minimal.

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MEXICO



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GENERAL

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

There is no doubt that Mexico's energy source depends, almost completely on petroleum, which also means that it is a petroleum based economy.

Notwithstanding, Mexico has a huge potential for the development of renewable energy due to its geographic location and landscape. For that reason, over the next ten years the Mexican Government expressed its intent to reduce its dependence on hydrocarbons as a primary source of energy and has established some general guidelines and specific targets that promote and regulate the use of these alternative sources. The Law for the Use of Renewable Energy and the Financing of Energy Transition (*Ley para el Aprovechamiento de Energías Renovables y el Financiamiento de la Transición Energética*, the "Renewable Energy Law"),¹ provides for specific goals regarding the decrease in the use of fossil fuels for power generation: By 2024, not more than 65% of the country's total electrical output shall be obtained from fossil fuels, which percentages

shall be reduced to 60% by 2035 and to 50% by 2050.

In the last ten years Mexico has achieved important developments in the field of renewable energy sources, especially in the sector of wind power, geothermal and hydropower plants.

In December 2013, the Federal Congress approved amendments to the Political Constitution of the United Mexican States in energy matters (the "Energy Reform"). The Energy Reform amends Articles 25, 27 and 28 of the Federal Constitution. In general terms, the main purpose of the Energy Reform is to allow private investment in virtually all areas of the energy sector, including the power sector. The Energy Reform included transitional articles that set forth the general framework for the secondary legislation that is required to give effect to the Energy Reform (the "Secondary Legislation"). On August 11, 2014 the Secondary Legislation was enacted which includes the following laws:

- Hydrocarbons Law;
- Hydrocarbons Revenues Law;
- Petroleos Mexicanos Law;

¹ Published in the Federal Official Gazette on 28 November 2008, as amended.

- Mexican Oil Fund for Stabilization and Development Law;
- Creation of the National Agency for Industrial Security and Environmental Protection of the Hydrocarbon Sector Law;
- Electric Industry Law;
- Geothermal Energy Law;
- Federal Electricity Commission Law; and
- Coordinated Regulating Energy Sector Agencies Law.

As of the date of this memorandum, certain provisions of the Secondary Legislation, including some provisions of the Electric Industry Law (*Ley de la Industria Eléctrica*, hereinafter, the “Electric Industry Law”), are not yet effective and other administrative and technical legal provisions, including those governing the wholesale market have not been published.

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

For purposes of the Renewable Energy Law, renewable energy is that which the source lies in natural events, processes or materials that may be transformed into energy that can be used by man, that are naturally renewed and that are permanently or periodically available.

Under the Renewable Energy Law, sources of renewable energy include the following²:

- Wind;
- Solar radiation;

- Water movement in natural or artificial vessels;
- Ocean in all its aspects: motor, thermal, tidal, currents and salt concentration;
- Geothermal deposits;
- Bio-energy, (as defined by the Law for the Promotion and Development of Bioenergetics); and
- Others, as further determined by the Ministry of Energy, so long as they comply with the first paragraph of this section.

The following sources of electricity are excluded from coverage by Renewable Energy Law:

- Radioactive minerals used to produce nuclear energy;
- Hydraulic energy projects with the power of generating more than 30 megawatts, except:
 - In the case of a dam with a capacity of less than 50,000 cubic meters of water or a dam with a surface of less than 1 hectare and that does not exceed such capacity of storage. These dams should be located in the property on which the generator has a real right;
 - In the case of existing dams, even with more capacity than the aforementioned, that could be eligible to generate electricity.
- The incineration or thermal treatment of industrial waste, and
- Use of landfills that do not comply with the environmental regulation.

The Electric Industry Law does not provide a definition of renewable energy sources but of “clean energies” and such definition is based solely on the disposal mechanism of each renewable source. It has to be noted that such

² Article 3 Paragraph II of the Renewable Energy Law.

definition is broader than the definition of renewable energies provided by the Renewable Energy Law and that, unlike such law, the nucleoelectric energy is included in the definition.

REGULATIONS

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

The Mexican legal system currently regulates renewable energy from three perspectives: (i) the generation of electricity from renewable resources; (ii) the production of bio-fuels and (iii) Geothermal Energy.

I. Power generation.

The framework associated with the generation of power through renewable sources is not regulated by a specific law, but rather by the Electric Industry Law which regulates the general electricity sector, regardless of the source used to generate power.

As further discussed below, the Energy Reform does not contemplate renewable energy regulations specifically, but it modifies the power generation sector, which is expected to have important implications (directly or indirectly) on renewable energy.

As of today, the framework associated with the generation of power through renewable sources in Mexico is as follows:

- The Electric Industry Law;
 - Electric Industry Law Regulations (*Reglamento de la Ley de la Industria Eléctrica*, hereinafter, the “Electric Industry Regulations”)³;
 - Directives and Form of Contracts Issued and Approved by the Regulatory Energy Commission (*Comisión Reguladora de Energía*, hereinafter, “CRE”);
 - Law for the Use of Renewable Energy and the Financing of Energy Transition (*Ley para el Aprovechamiento de Energías Renovables y el Financiamiento de la Transición Energética*)⁴;
 - Regulations of Law for the Use of Renewable Energy and the Financing of Energy Transition (*Reglamento de la Ley para el Aprovechamiento de Energías Renovables y el Financiamiento de la Transición Energética*)⁵;
 - Law for the Sustainable Use of Energy (*Ley para el Aprovechamiento Sustentable de la Energía*)⁶;
 - Regulations for the Law for the Sustainable Use of Energy (*Reglamento de la Ley para el Aprovechamiento Sustentable de la Energía*)⁷;
 - National Water Law (*Ley de Aguas Nacionales*)⁸;
- Art. 25, Paragraph 6 of Art. 27 (with respect to the electricity transmission and distribution restrictions), and the 4th Paragraph of Art. 28 (with respect to the activities which are not considered a monopoly of the State in these matters) of the Constitution;

³ Published in the Federal Official Gazette on October 31, 2014.

⁴ Published in the Federal Official Gazette on November 28, 2008, as amended.

⁵ Published in the Federal Official Gazette on September 2, 2009, as amended.

⁶ Published in the Federal Official Gazette on November 28, 2008, as amended.

⁷ Published in the Federal Official Gazette on September 11, 2009, as amended.

⁸ Published in the Federal Official Gazette on December 1, 1992.

- Regulations for the National Water Law (*Reglamento de la Ley de Aguas Nacionales*, hereinafter, the “Water Regulations”)⁹;
- Geothermal Energy Law (*Ley de Energía Geotérmica*)¹⁰;
- Regulations of the Geothermal Energy Law (*Reglamento de la Ley de Energía Geotérmica*)¹¹; and
- Guidelines which set forth the criteria to grant clean energy certificates and the requirements for their acquisition (*Lineamientos que establecen los criterios para el otorgamiento de certificados de energías limpias y los requisitos para su adquisición*, hereinafter, “Guidelines for clean energy certificates”)¹² issued and approved by the Ministry of Energy.

Generating power through renewable sources has created challenges that the Mexican laws, regulations, authorities, and other participants need to face.

As a result of the Energy Reform, the electric market in Mexico faces a profound and complex restructure in order to enhance the private investment in the power sector.

Prior to the Energy Reform, the generation, transmission and distribution of electricity, to the extent it was undertaken for public service purposes, was reserved to the Mexican State through the governmental utility company, Federal Electricity Commission (*Comisión Federal de Electricidad*, hereinafter, “CFE”), which was a

vertically integrated entity. In that regard, private investment was allowed only under certain legal conditions by means of exceptions in the then applicable secondary legislation, of what is not considered to be “public service”, which include the following:

- Independent power production (“IPP”) which power shall be sold to CFE;
- Co-generation¹³;
- Self-supply projects;
- Importation and/or exportation of power; and
- Small production (under 30 MW).¹⁴

Pursuant to the Electric Industry Law, private companies are now permitted to make the following investments in the electricity sector:

- *Generation* – Power generation is no longer reserved to the Mexican State and, thus, can be undertaken by private entities subject to obtaining the relevant permit. Private companies may obtain permits to construct, own and operate power generation plants with a generation capacity greater than or equal to 0.5 MW for purposes of selling electrical energy to authorized suppliers or to qualified users in the wholesale electricity market. The acquisition of electrical energy from generation facilities located abroad only requires an authorization from the CRE, and the generation of electrical energy

⁹ Published in the Federal Official Gazette on January 12, 1994, as amended.

¹⁰ Published in the Federal Official Gazette on August 11, 2014.

¹¹ Published in the Federal Official Gazette on August 31, 2014.

¹² Published in the Federal Official Gazette on August 31, 2014.

¹³ It has to be noted that pursuant to Renewable Energy Law, cogeneration projects may take advantage of the benefits and instruments granted to renewable energy projects, provided that the cogeneration systems are recognized as “Efficient Cogeneration” in terms of the CRE guidelines.

¹⁴ Arts. 3 and 36 of the Power Law. The excess of energy produced by these power generation projects, if any, shall be sold to CFE (except section d) above), as provided by subsections III and IV of the abovementioned article.

by a private company in quantities limited to its own consumption does not require a permit.

- *Transmission and Distribution* – Transmission and Distribution services continue to be reserved to the Mexican State, however, private companies may enter into partnerships or agreements with CFE or the Ministry of Energy for the financing, installation, maintenance, management, operation and expansion of transmission and distribution infrastructure. As a productive state enterprise, CFE will continue to provide the public service of transmission and distribution of electricity and continue to be responsible for the National Transmission Network (*Red Nacional de Transmisión*) and the General Distribution Networks (*Redes Generales de Distribución*), which networks will be operated exclusively by the National Center for energy Control (*Centro Nacional de Control de Energía*, hereinafter, “CENACE”). To avoid conflicts of interest, considering that now CFE will compete in the power generation and marketing markets, the CENACE, which will now be a separate entity of CFE, will operate the national transmission and distribution grids.
- *Marketing* – Similar to power generation, power marketing is no longer reserved to the Mexican state and, thus, can be undertaken by private entities subject to obtaining the relevant permit. Private companies may obtain permits to supply electrical energy to end users under a regulated tariff regime as well as to sell electrical energy in the wholesale electricity market. Private companies may also sell electrical energy to qualified users under freely negotiated power purchase agreements, provided that they inform the CENACE accordingly pursuant to the Market Regulations (*Reglas del Mercado*) to be issued by the Ministry of Energy.

The Electric Energy Law provides for a temporary regime in order to facilitate the gradual implementation of such law, and in order to ensure that the objectives set forth in the Electric Energy Law are achieved. During this transitional period, the CFE will continue to provide generation, transmission, distribution, and marketing services as it has previously done. Likewise, CENACE will continue to exercise operational control of the National Electric System. Eventually CFE will be required to segregate its various activities, namely generation, transmission, distribution, and marketing, providing each functionality with separate accounting, operational and legal capacities. However, the Electric Energy Law does not provide any deadline for CFE to undertake this separation. Contracts entered into by CFE and third parties that are currently in effect, or that include contingent liabilities on the date of such separation, will be transferred to productive state companies, productive state subsidiaries, affiliates, or to CENACE, as applicable, under terms defined by the Ministry of Energy. This transfer will under no circumstances result in the termination of such contracts.

As mentioned before, electricity transmission and distribution remain as an activity that shall be exclusively provided by the Mexican government to the extent it is undertaken for public service purposes. Under the Energy Reform, and pursuant to the Electric Industry Law, CFE was required to transfer to CENACE all necessary human, material and financial resources for the operation of the National Power System and the wholesale electricity market. Accordingly, on November 28, 2014, CFE transferred to CENACE the following assets:

- The National Center located in the Federal District;
- The Alternate National Center located in the State of Puebla;

- Eight control areas located in the States of Mexicali, Hermosillo, Gómez Palacio, Monterrey, Guadalajara, Distrito Federal, Puebla and Mérida;
- The control centers in La Paz and Santa Rosalía;
- The Planning Office of the Budget Department (*Coordinación de Planificación de la Subdirección de Programación*) located in the Federal District; and
- Employees and assets associated with the operation of the abovementioned centers.

The Renewable Energy Law foresees three main instruments aimed at promoting the use and investment in projects for the generation of energy from renewable resources:

- The National Strategy for the Transition and Sustainable Use of Energy (Estrategia Nacional para la Transición Energética y el Aprovechamiento Sustentable de la Energía)* aimed at promoting the use of clean technology; the use of and investment in renewable energy projects, as well as reducing the country's dependency on hydrocarbons.
- The Special Program for the Use of Renewable Energy (Programa Especial para el Aprovechamiento de Energías Renovables)*, which sets forth elements of public policy, lists goals and describes actions to be taken on the subject.
- The Fund for the Transition and Sustainable Use of Energy (Fondo para la Transición Energética y el Aprovechamiento Sustentable de la Energía, the "Fund")*.

In accordance with the Water Regulations, no concession will be required for the exploitation, operation or use of water, in the

case of hydraulic energy generation, which capacity does not exceed 30 megawatts¹⁵.

II. Biofuel production.

Enacted in February of 2008, the Law for the Development and Promotion of Biofuels (*Ley de Promoción y Desarrollo de los Bioenergéticos*) is aimed at fostering the production of ethanol and other biofuels as a means to reduce Mexico's dependence on fossil fuels. It also promotes cleaner and environmentally friendly fuels and develops Mexico's rural economy, specifically through the participation of the economy's agriculture sector. The law emphasizes the importance of research and development as well as technology transfer related to biofuels, tax exemptions and subsidies to organizations.

The law also highlights the importance of preventing risks to national food requirements, and limits the issuance of biofuel production permits to those applicants whose activity may create such a risk. In addition to fines that may exceed US \$300,000 to those that produce biofuels without the corresponding permits, the law foresees the possibility of total or partial closure of the production facilities.

The Mexican Government has imposed on Petroleos Mexicanos ("PEMEX") the obligation of elaborating programs of progressive substitution of hydrocarbons by renewable energies and allocating a certain percentage of its incomes to such purpose.

III. Geothermal Energy

The Geothermal Energy Law sets forth the legal framework through which private entities will be entitled to develop investigation, exploration and production activities in the geothermal sector, subject to any applicable registrations, permits and concessions to be

¹⁵ Art. 120, paragraph I of the Water Regulations.

granted by the Ministry of Energy. Below is a brief summary of the possible authorizations private companies may obtain:

- *Investigation Registry* – Pursuant to Article 10 of the Geothermal Energy Law, registration is required in order to undertake geophysical, geochemical, geological analysis or remote sensing technologies to determine the existence of geothermal resources in a determined area. The applicant shall demonstrate its experience to develop the aforementioned activities. The registry shall be valid for 8 months.
- *Exploration Permit* – In accordance with Article 17 of the Geothermal Energy Law, this permit allows interested private companies to engage into exploration drilling activities in areas up to 150 km². To obtain the exploration permit the applicant shall demonstrate: (i) technical and financial capacity; and (ii) technical feasibility of the exploration program with schedule milestones. For more information regarding the characteristics of the permit please refer to articles 22 and 23 of the Geothermal Energy Law.
- *Concession for the exploitation of geothermal resources* – Article 26 of the Geothermal Energy Law sets forth that the holders of exploration permits that have fulfilled all their obligations during the exploration period may be eligible to obtain a concession title for the exploitation of geothermal resources in a delimited area, for a period of 30 years.

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

The main regulatory bodies in the renewable energy sector are the following:

- *Federal Ministry of Energy (Secretaría de Energía)*. In charge of crafting public policy for a better use of renewable energy and of issuing permits for the production, transportation, storage and distribution of biofuels.
- *Energy Regulatory Commission* Among other things, the CRE is in charge of:
 - ✓ Issuing standards, directives, methodology and other provisions of an administrative and/or technical nature that regulate the generation of energy from renewable resources;
 - ✓ Determining rates to be paid for energy generated, supplied and transmitted;
 - ✓ Issuing methodology to determine capacity of generation and contribution to the National Electricity System by each of the technologies;
 - ✓ Issuing general rules for interconnection to the National Electricity System; and
 - ✓ Issuing permits for the generation, transmission and distribution of electricity in the modalities available for private parties.
- *National Commission for the Efficient Use of Energy (Comisión Nacional para el Uso Eficiente de la Energía)*. The authority of this entity includes:
 - ✓ Issuing administrative provisions on matters related to the efficient use of energy, based on applicable legal provisions;
 - ✓ Propose the creation or review of official Mexican standards (Normas Oficiales Mexicanas) to promote the efficient use of energy;

- ✓ Issue opinions that are binding for other agencies of the Federal Administration in connection with best practices for the sustainable use of energy.
- *National Center of Energy Control (Centro Nacional de Control de Energía).*

On August 28, 2014, CENACE, a decentralized public entity of the Mexican government, was created to act as the independent operator of the National Power System, the wholesale electricity market and ensure open and non-discriminatory access to the electric transmission grid and distribution systems. The CENACE is also responsible for submitting proposals to the Ministry of Energy to promote the expansion and modernization of the general distribution networks.

- *Federal Electricity Commission (Comisión Federal de Electricidad).*

CFE ceased to be a public instrumentality, and became a “state productive company” by means of the entry into force of the CFE Law. Through various affiliate entities, including both “state productive” subsidiaries and other affiliates (i.e., companies of a “private” nature), CFE is now able to compete with private enterprises in the electricity generation and marketing industry. At the same time, CFE will continue to manage transmission and distribution of electricity as a public service. In its capacity as a state productive company, CFE enjoy a special legal regime with regards the following: (i) procurement, leases, services, and construction work; (ii) assets; (iii) budget and public debt; (iv) administrative responsibilities; and (v) remunerations, as well as with regards to other matters pertinent to the effective realization of its goals.

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

As of today, all power generation schemes require a prior permit by the CRE. In addition, the Renewable Energy Law and the Geothermal Energy Law provide more specific registrations, permits and concessions to carry out clean energy projects. It has to be noted, that the Electric Industry Law sets forth a very stringent procedure for purposes of acquiring or creating legal easements for the development of certain energy projects.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

As stated in section 1 above, only the generation of electrical energy by a private company in quantities limited to its own consumption does not require a permit.

INCENTIVES

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

Although certain tax benefits are available, those are limited. Additionally, more coordination is required at the Federal and Local level to provide adequate tax benefits for the development of renewable energies more in line of what is offered in other parts of the world. Among the available benefits we find the following:

- Accelerated deduction. The Income Tax Law provides that investors are allowed to the deduction of 100% of the investment made in machinery and equipment used for generation of energy from renewable sources (including biomass) so long as the equipment is to be used for at least 5 years.

- Exemptions. At a Federal or Local level certain exemptions apply for the payment of fees related to permits or other public procedures.
- Clean Energy Certificates. The Ministry of Energy shall issue Clean Energy Certificates to implement mechanisms to allow the compliance with policies regarding diversification of energy sources, energy security and promotion of clean renewable energies.

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

Neither the Energy Reform nor the Secondary Legislation set forth a purchase guarantee for the electricity generated by renewable energy companies. Although, the energy will be sold through the wholesale electricity market, as of the date hereof the Ministry of Energy has not issued the market regulations that will establish, among others, the regulatory framework applicable to the wholesale electricity market, and consequently, such market is not yet operational.

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

The Renewable Energy Law states that CFE, with the prior opinion from the Ministry of Finance (*Secretaría de Hacienda y Crédito Público*), the Ministry of energy, the Ministry of Environment and Natural Resource, and the Ministry of Health, shall determine the maximum and minimum considerations to be paid to the generators who use the renewable sources of energy. These considerations must include all costs associated with production capacity and energy generation. And will vary depending on the technology used, on the

geographic location of the projects and the arising externalities, in connection with the generated energy by non-renewable sources.

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

Mexico ratified the Kyoto Protocol on 7 September 2000, and is a non-Annex I country, having no mandatory emission reduction commitments. Mexico has actively participated in the global climate change negotiations, seeking a commitment from other countries (both developing and industrialized) to adopt a new international treaty that substitutes the Kyoto Protocol. Mexico has acted as host Party to numerous projects regarding the reduction of greenhouse gas (“GHG”) emissions, being the authorities (including the designated national authority) well acquainted with the Clean Development Mechanism. Mexico has also participated with other mechanisms and institutions, such as the Climate Action Reserve, to implement GHG emissions reduction projects that will generate carbon credits.

Mexico issued the General Law of Climate Change (“Climate Change Law”) on 6 June 2012, which has as one of its goals the creation of a voluntary carbon market.

The Climate Change Law establishes as an objective the reduction by 30% of national GHG emissions by 2020 and 50% by 2050, taking 2000 levels as the basis thereof, conditioned to the establishment of an international regime which enables financial and technological support from developed countries. Another goal is to promote the use of clean technologies so that by 2024, 35% of the production of electricity is generated by clean or renewable sources.

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

The energy related laws and regulations issued as of today do not include the provisions governing priority for connection to the grid for renewable energy based power plants.

All dispatch activities shall be carried out by CENACE as described in question 3 above.

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

No other than as described under question 7 above.

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

The federal government has set the foundations for the Fund, which is set to receive approximately 28 million dollars from the Federal government in 2014.¹⁶

The specifics and public policies related to this Fund are described and regulated by the Rules for the Operation of the Fund for the Transition and Sustainable Use of Energy (*Reglas de Operación del Fideicomiso Público de Administración y Pago denominado Fondo para la Transición Energética y el Aprovechamiento Sustentable de la Energía*) published in the Federal Official Gazette on 30 January 2014. According to the rules, the resources of Fund shall be used to promote the use, development and investment in the renewable energy sector.

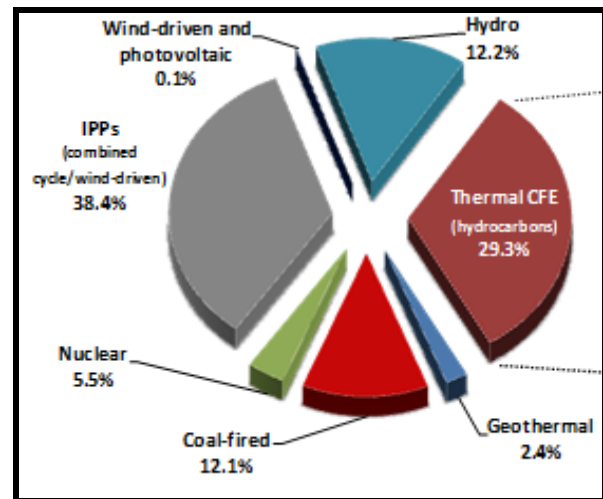
In addition to the foregoing, the National Strategy of Energy 2013-2027 (*Estrategia Nacional de Energía 2013-2027*) aims at

providing the framework under which Mexico will meet its future energy needs in a cost-effective and sustainable manner, establishing certain objectives, recommendations and strategies to guide authorities and private companies. Some of said strategies specified in the plan are: (1) produce, deliver and use energy more efficiently; (2) support development of renewable energy supplies; (3) invest in energy and transportation infrastructure; and (4) reduce the production of carbon-based electricity. It is important to consider that the strategy plans to generate 35% of electricity from non-fossil energy in 2024.

STATISTICS

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

According to CFE as of March 31st, 2015 the generation of electricity according to source is as follows:¹⁷

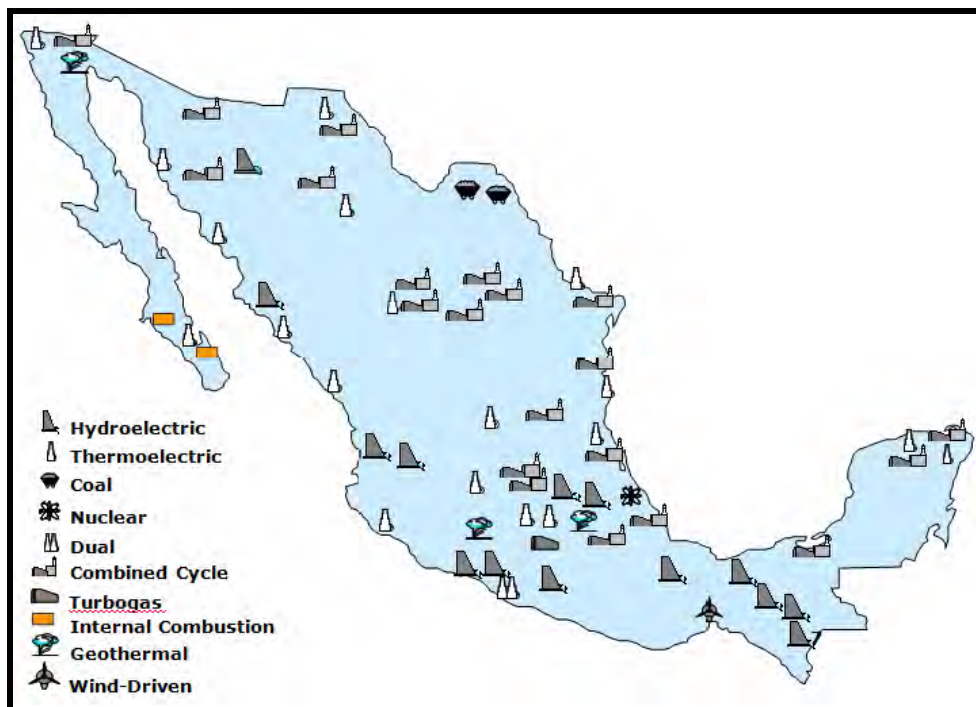


¹⁶ Considering an exchange rate of approximately MXN \$ 15.477 per dollar.

¹⁷ CFE 2014 Annual Report.

According to CFE’s 2014 Annual Report, as of March 31, 2015, the Mexican Electrical Segment is distributed as follows:

Mexican Population	112,337 inhabitants
Energy Installed Capacity (Public and Private Service)	54,997 MW
Transmission Network	57,500 km (35,736 miles)
Sub-transmission and Distribution Lines	822,000 km (510,770 miles)



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MONTENEGRO



Jelena Vujisic

LAW OFFICE VUJACIC

GENERAL

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

In accordance with all obligations arising from the current legal and regulatory framework in Montenegro, and pursuant to all key international documents Montenegro had acceded to, as well as taking in consideration all the potentials of Montenegro, the energy sector is recognized as a pillar of overall, sustainable and long-term stable growth of Montenegro, with evident positive macroeconomic effects.

Therefore, the Energy Policy of Montenegro for the period to 2030, adopted in March 2011, recognized and determined the main three priorities to be achieved in this area for the proposed period of time, as: security of energy supply; development of the competitive energy market and sustainable energy development, with more than 20 key strategic objectives, of which more than 50% is directly related to activities in the field of renewable energy sources.

Taking in consideration that development of renewable energy sources is recognized as one of the strategic points, the Ministry of Economy, competent for the energy framework, has initiated various studies and

projects in cooperation with and financed by different international institutions with the aim of detailed analysis of the potential of renewable energy sources, and in order to provide information to domestic institutions and companies operating in Montenegro about possible changes and improvement of the energy sector.

A great job has been done concerning the changes related to the legal and regulatory framework. Some of the new legislation acts has been adopted, while other important acts are in the phase of preparation, or in the process of adoption.

The plan for 2011 and 2012 was to adopt a whole new regulatory framework in the area of renewable energy sources, in order to establish the complete set of rules for this area. The competent governmental bodies are well on “track” to achieve these plans.

However, most of the work remains to be done. The implementation of the newly established laws will be a major challenge, as well as creation of the positive environment for the development and investment in this area or promotion of renewable energy sources as most attractive, all previously mentioned in order to achieve national goal for renewable energy sources for Montenegro designated as 29.5%.

Considering all aforementioned it is possible to conclude that renewable energy sources in Montenegro become one of the most growing field with huge potential and more than enough space to be developed.

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

Pursuant to the Energy Law (“Official Gazette of Montenegro”, No. 28/10 from May 2010 to No.10/15 from March 2015) renewable energy sources are defined as follows: energy sources existing in nature, fully or partially renewable, particularly the energy of water courses, wind, non-accumulated solar energy, bio fuel, biomass, biogas, geothermal energy, hydrothermal energy, aero thermal energy, wave, tidal, landfill gas, and sewage treatment plant gas energy.

REGULATION

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

The principal laws and regulations applicable to the area of renewable energy sources are:

- Energy Development Strategy of Montenegro to 2025, adopted in 2007;
- Action plan for the implementation of the Energy Development Strategy for the period 2008-2012;
- Energy Development Strategy of Montenegro to 2030, adopted in 2014;
- Energy Policy of Montenegro for the period to 2030, adopted in March 2011;
- National Renewable Energy Action Plan to 2020 Montenegro, adopted in December 2014;
- Energy Law (“Official Gazette of Montenegro”, from No.28/10 from May 2010 to No.10/15 from March 2015);
- Law on Efficient use of Energy (Official Gazette of Montenegro” No.57/14 from December 2014 and No.003/15 from March 2015)
- Action plan for the energy efficiency for the period of 2010-2012, adopted in December 2010;
- Action plan for the energy efficiency for the period of 2013-2015, adopted in November 2013;
- Rulebook on criteria for issuance of an energy license, content of request and registry of energy licenses (“Official Gazette of Montenegro”, No. 49/10 from August 2010 and No.38/13 from August 2013) ;
- Rulebook on the types and classification of plants using renewable energy and cogeneration plants (“Official Gazette of Montenegro”, No. 28/11 from June 2011);
- Rulebook on detailed conditions to be met by a legal entity to measure and explore the potential of renewable energy sources (“Official Gazette of Montenegro”, No. 28/11 from June 2011);
- Regulation on the wind power plants (“Official Gazette of Montenegro”, No. 67/09 from September 2009);
- Regulation on the tariff system for determining the incentive prices of electricity from renewable energy sources and high efficiency cogeneration; (“Official Gazette of Montenegro”, No. 52/11 from November 2011);
- Decree on the manner of exercising the rights and status of privileged producer of electricity; (“Official Gazette of

Montenegro”, No. 37/11 from July 2011 and 28/14 from July 2014);

- Decree on means of issuance, transfer and cancellation of guarantees of origin for energy generated from renewable energy sources and high efficient cogeneration, adopted in June 2011;
- Decree on tariff system for determining the incentive prices for electricity produced from renewable energy sources and high efficient cogeneration (“Official Gazette of Montenegro No.52/11 from October 2011 and No 28/14 from June 2014
- Decree on incentive fees to encourage production of electricity from renewable energy sources and cogeneration (Official Gazette of Montenegro No.8/14 from February 2014);
- Market rules that regulate a manner of organizing and managing the electricity market in Montenegro, issued by Montenegrin Electricity Market Operator in July 2012.

Other Laws and regulations applicable to the renewable energy sources among others are: Law on concessions, Law on Ratification of Agreement between European Union and Montenegro on forming the Energy Community, Law on construction of objects and special planning; Water Law, Law on Geological Exploration, Law on Mining, Procedure for Acquiring Concession for Detail Geologic Exploration and Exploitation of Mineral Resources, Competition Law, Company Law, as well as a number of other acts.

It is important to emphasize that in order to adopt whole new regulatory framework in the area of renewable energy sources, several other acts are in phase of preparation or in process of adoption, such as:

- The Program of development and use of renewable energy sources, which will define the dynamic of development of renewable energy sources in accordance with the requirements of the energy community and strategic goals of Montenegro;
- The National target for the total part of renewable energy sources in the total final energy consumption;
- Regulation on the types and manner to encourage production of renewable energy sources and cogeneration;
- Decree on the manner of issuance, transfer and withdrawal of the guarantee of origin of energy produced from renewable energy sources and high efficiency cogeneration;
- Decision on the preparation of the Strategic Environmental Impact of Energy Development Strategy of Montenegro to 2030;
- The Study of distributed source connection and operation in the electric power system of Montenegro;

Pursuant to the Energy Law development and use of renewable energy sources shall be set in the Program for development and use of renewable energy sources that shall be adopted by the Government for the period of 10 years in accordance with the Energy Development Strategy, and that shall contain specifically the national indicative target with regard to use of renewable energy sources and time schedule, i.e., timing for its implementation, together with support schemes.

Furthermore, according to the Energy Law the national indicative target for renewable energy sources means the contribution of energy produced from renewable energy sources to the gross final energy consumption that is

expressed as a percentage and shall be calculated based on the methodology set by the Ministry.

The development and use of high-efficiency cogeneration in accordance with the Energy Development Strategy shall be set in the Program for development and use of high-efficiency cogeneration that shall be adopted by the Government for a period of 10 years, and which Program shall specifically set available and feasible potential for use of high-efficiency cogeneration with planned indicative target for a period covered by the program, barriers, support schemes, time schedule, i.e., timing for its implementation and tentative financial resources required for its implementation.

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

In accordance with the Energy Law the main bodies in charge for the area of renewable energy are the Ministry of Economy and the Energy Regulatory Agency, each of them under the framework of their competencies, while some other public authorities might be included or authorized for performing some of the activities in connection with the various aspects in the area of renewable energy sources.

Some of the most important authorities of the Ministry of Economy concerning the area of renewable energy sources are the establishment of the legal, institutional and regulatory framework; a supervisory role, inspection authorities and responsibility for facilitating the procedures for new subjects in this sector, while Energy Regulatory Agency has authorities such as: supervision over the work of energy market subjects, issuing licenses, authorizations, establishing prices and tariffs prescribed by the Law, and promoting competition within the sector.

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

In accordance to the Laws and Rulebooks that regulates production and distribution of energy produced from renewable energy sources, for participation in or implementation of renewable energy projects there are three main permits/licenses that must be obtained. A License for conducting energy activity, and Energetic license and a Use permit. The License for conducting energy activity is required for any subject in order to conduct energy activity as its business activity. An Energetic license is required for building or reconstruction of facilities for the production of energy, and a Use permit is required for using of such objects for the purpose they are built for. All the permits/licenses are obtained at the competent state authorities and regulatory bodies, through the procedures defined by the Law and Rulebooks of those authorities or regulatory bodies. It is also important to point out that all the licensees/permits are interconnected and issuance of the next one is conditioned through issuance of previous one. In addition stipulated licensees are also required to have signed contracts for connection of the energetic facility to the distributional network or transmission system.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

The Energy Law prescribed the category of “license – exempt generation”. In accordance with the Article 57 of the Energy Law, the category of “license-exempt generation” includes the following activities: 1. generation of electricity for one’s own needs; 2. generation of electricity in plants with an installed capacity of up to 1 MW; 3. storage oil and petroleum products for one’s own needs; 4. retail trade in liquid petroleum gas in

cylinders; 5. generation of heat for one's own needs; 6. generation of heat in plants with an installed capacity of up to 1 MW; 7. trade in electricity and natural gas for resale, not involving sale to final customer, mediation or representation on energy market; and 8. wholesale and retail trade in petroleum products that are not used in burning process (bitumen, oils, lubricants, rubber, cosmetics products etc.). Concerning the question, it should be noted that the Energy Law does not make any difference between renewable energy producers and other energy producers in terms of regulating license-exempt generation and implementation of this Article depends only on the capacity of the energy facility. At last, pursuant to Article 57 of the Energy Law, energy facilities based on renewable energy resources with a maximum installed capacity of 1 MW are exempted from the requirement to obtain a license from the Energy Regulatory Agency. Furthermore, it should be noted that under the Law, these type of producers, under certain conditions, are treated as privileged producers and prescribes special rules which apply to their power sale arrangements.

INCENTIVES

7. 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.

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

Apart from the previously stated incentives, the Energy Law recognizes also the purchase guarantee due to the fact that based on the Program for development and usage of renewable energy sources, and Program for development and usage of high-efficiency cogeneration, the Government shall determine minimum share of electricity generated from renewable energy sources in the total electricity supply which shall be taken over by each supplier of electricity.

Evidence about compliance with the minimum contribution from renewable energy sources requirement shall be a guarantee of origin.

Moreover, energy undertakings shall implement measures aimed at increasing a contribution of electricity generated from renewable energy sources to the total electricity generation.

A purchase guarantee for renewable energy companies is also given by the Regulation for wind energy plants adopted by the Government, where there is an obligation on

the state to purchase all energy generated from these companies.

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

The regulation of the tariff system for determining the incentive prices of electricity from renewable energy sources and high efficiency cogeneration shall regulate the manner of determining incentive price for electricity generated by plants using renewable energy sources and high efficiency cogeneration plants, which has previously acquired the status of the privileged producer.

According to the Law, the status of privileged producer lasts for 12 years, therefore the proposed incentive guarantees privileged price to producers for the same period. The tariff system of purchase prices for energy is different for different types or groups of facilities, as well as for different types of renewable sources.

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

The Kyoto Protocol was ratified by the Parliament of Montenegro on 27 March 2007 by adopting the Law on ratification of Kyoto Protocol (Official gazette of Montenegro, No. 17/07).

Since Montenegro is still considered to be a developing country and a small emitter of carbon, it is not yet obliged to obey the Protocol and accordingly there are no domestic regulations that define the regime for carbon credits in Montenegro. However, since Montenegro is a candidate for membership in the European Union, through association to European Union obligations from Kyoto Protocol will eventually become obligatory.

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

An energy undertaking of generated electricity from the renewable energy resources, and if satisfied some other requirements provided by the Law may obtained the status of privileged generator.

A privileged generator shall be entitled to: a purchase price for electricity in accordance with a tariff system and a priority in delivery of total electricity generated into the transmission or the distribution system. Article 151 of Energy Law prescribed that in the process of operating transmission and distribution system and dispatching, operator of electricity transmission and distribution system shall give a priority to connection of a facility for generation of electricity from renewable energy sources, in accordance with technical capabilities of the system.

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

No incentive in this field is given if the material for plant construction is locally produced, notwithstanding the fact that the costs of transport would be less and no other taxes could be applicable in this case, and way of payment with domestic manufacturers could be arranged in a way that enables easier paying.

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

The general obligation of the Ministry, by the Law, is to facilitate easier licensing procedures for renewable energy sources, and the intention of the State to enable renewable energy production in Montenegro, with special attention to the surveys and further identification of the renewable energy sources potential, which

incentives would be provided through different projects recently established or initiated in cooperation with different international institutions.

STATISTICS

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

It is estimated that the total hydro potential in Montenegro is approximately 9,846 GWh/per year, and that is possible to realize 400 GWh/per year just with small hydro power plants.

In addition, according to the preliminary estimation undertaken, Montenegro shows a wind potential of 100 MW considering only the windiest areas (wind speeds above 7 m/s) and an

overall potential of 400 MW taking also into account the zones with medium potentiality.

Pursuant to the researches Montenegro has one of the greatest solar energy potential in the South-Eastern Europe: It ranks above its neighbors, as the annual amount of the solar energy estimated in Podgorica, of the order of 1.600 KWh/(m²*d) is greater than the corresponding reference values for the most of the cities from the region.

The study has shown that great potential existing even in the area of the biomass (approximately to the amount of 400 GWh), as well as of some of the other renewable energy sources that is possible to exploit.

There is no available data on the percentage of electricity generated based on each type of renewable energy sources in the total generation of electricity on a country-wide scale.

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POLAND



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GENERAL

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

The importance of renewable energy in Poland has increased significantly during the past few years, in line with the recent European legislation and in particular due to the adoption of Directive No. 2009/28/EC of the European Parliament and the Council of 23 April 2009, on the promotion of use of energy from renewable resources.

The Polish Energy Policy, adopted by the Council of Ministers on 10 November 2009, follows the principles enshrined in the European legislation. One of its main objectives is to increase the use of renewable energy sources, including biofuels. The Polish Energy Policy is furthermore based on the approach that the use of renewable energy sources will be a stabilizing factor for national energy security.

The main objectives in the field of renewable energy sources include:

- Increasing the share of renewable energy in final energy consumption up to 15% by 2020 and further increasing in the following years;

- Achieving a 10% share of biofuels in the transport fuel market by 2020 and increasing of the deployment of second generation biofuels; and
- Protecting forests from excessive exploitation for the purposes of production of biomass as well as the sustainable use of agricultural areas as renewable energy sources in order to prevent competition between renewable energy and agriculture.

Currently the Council of Ministers is working on a new policy document – Polish Energy Policy until 2050, which modifies the above-mentioned approach to the development of renewable energy sources. It states in particular that the increase of the share of renewable energy in final energy consumption beyond 15% which Poland is obligated to achieve by 2020 under the EU legislation will be subject to renewable technologies becoming economically sustainable. The new energy policy stresses that renewables' support systems should not distort the market and cause energy prices to increase. It also states that the state support for the development of renewable energy sources should not extend beyond 2030.

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

According to the Act on Renewable Energy Sources¹ (the “RES Act”), renewable sources of energy are renewable, non-fossil energy sources that include wind power, solar power, aerothermal, geothermal, hydrothermal and hydro energy, sea waves and tidal energy, biomass, biogas, agricultural biogas and bio liquids. 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?

Energy production from renewable sources is regulated by general provisions on the functioning and access to energy generation activities set forth in the Energy Law² (the “Energy Law”). Specific regulations on energy production from renewable sources are set out in the RES Act.

These regulations are supplemented by subordinate legislation issued by the competent authorities on the basis of delegations included in the Energy Law and in the RES Act. These subordinate acts regulate, for example, technical requirements for grid connections and the terms of operation of enterprises using renewable energy sources (the Ordinance of the Minister of Economy of May 4, 2007³, the “System Ordinance”).

¹ The Act of February 20, 2015, on renewable energy sources (Journal of Laws of 2015, item 478).

² The Act of April 10, 1997, Energy Law (Journal of Laws of 2012, item 1059, as amended).

³ Journal of Laws of 2007, No. 93, item 623, as amended.

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

The President of the Energy Regulatory Authority (the “President of the ERA”), a central body of government administration, is the regulator of the fuel and energy sector, including the renewable energy sector. The President of the ERA regulates the activity of energy enterprises aiming to balance the interests of energy enterprises and customers. The President of the ERA is also the concession-granting authority.

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

The development of a renewable energy project would generally require obtaining a number of administrative decisions, including the main administrative decisions in a typical investment process, i.e., an environmental permit (determining environmental conditions for the development of the project), a planning decision (setting land development conditions for the project) and a building permit (granting permission to commence construction works and approving a building design).

Economic activity in the field of generation of energy (including the generation of electricity from renewable energy sources) is also subject to obtaining a concession. Concessions are granted by the President of the ERA for a definite period of no less than 10 years and no more than 50 years, except where the entrepreneur has requested that the concession be granted for a shorter period. Energy enterprises that are granted a concession must pay an annual fee to the state budget, which is treated as a cost of their activity and is calculated according to the following formula: the enterprise’s annual revenues (only those revenues connected with the activity covered by the concession) multiplied by 0.0006.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

The generation of electricity:

- in micro installations (i.e., installations of total installed capacity of no more than 40 kW, or thermal capacity in cogeneration of no more than 120 kW);
- in small installations (i.e., installations of total installed capacity of more than 40 kW and up to 200 kW, or thermal capacity in cogeneration of more than 120 kW and up to 600 kW);
- from agricultural biogas; and
- from bio liquids (as the sole fuel)

does not require a concession.

However, all these activities, except for energy generation in micro installations, are regulated activities. Prior to the commencement of such activities, they should be registered in the relevant register held by the President of the ERA (in case of energy production in small installations) or by the President of the Agricultural Market Agency (in case of energy generation from agricultural biogas and bio liquids).

INCENTIVES

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

Electric energy generated from renewable energy sources is exempt from excise tax on the basis of documents confirming the cancellation of a certificate of origin (i.e., a certificate confirming that energy was generated from a renewable energy source).

Renewable energy generated outside of the support system of certificates of origin (including energy generated in the auctioning regime) will not be exempted from excise tax.

Payers of agricultural taxes enjoy investment relief if expenses were born for the purchase and installation of devices for the use of natural energy sources (wind, biogas, solar power and water) for production purposes if such expenses were not fully or partially financed from public means. The investment relief is granted after the investment's completion and consists of a decrease of the agricultural tax due for land situated in the community where the investment was undertaken in the amount of 25% of the properly documented investment expenditure. The relief for the same investment cannot be applied for a period longer than 15 years.

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

Until the end of 2015, all renewable energy installations benefit from purchase guarantee of renewable energy generated in such installations. Mandatory purchases of energy produced in renewable energy installations are performed by certain energy enterprises called “obligated suppliers” at an average price of energy on a competitive market published by the President of the ERA on a yearly basis. This obligation to buy energy generated in renewable energy installations is unlimited in volume and in time.

From January 1, 2016, the current regime for mandatory purchases of energy generated from renewable energy sources will change. The change is connected with the gradual departure from the current support system based on tradable certificates of origin (so-called “green certificates”) and the obligation of certain market participants to either purchase green certificates in amounts corresponding to a

given percentage of their energy sales/consumption/trading or to pay a substitute fee (the “quota obligation”) to auctioning system in which renewable energy installations will bid to receive support in the form of guaranteed prices for pre-determined amounts of energy generated each year.

Under the regime applicable from January 1, 2016, mandatory purchase obligation will still apply to (i) producers entitled to remain in the green certificate regime who will not exercise an option for voluntary transition to auctioning regime (ii) micro installations and (iii) installations of capacity below 500 kW who have won auctions. Its term will be, however, limited to 15 years from the date energy was produced in a renewable energy installation for the first time. Other renewable energy producers will not benefit from purchase guarantee. They will sell energy on the market according to the same principles as other (conventional) energy producers.

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

Under the current regime applicable until the end of 2015, there is no guarantee on minimum prices for renewable energy. Such prices, as well as prices of green certificates, are determined by the market.

Under the regime applicable from January 1, 2016, feed-in tariffs have been introduced for newly-built smallest renewable energy installations (i.e., installations of capacity up to 10 kW). They will be, however, only available to a limited number of installations – until the total capacity of such newly built installations connected to the grid reaches (i) 300 MW – for installations of a capacity up to 3 kW, and (ii) 500 MW – for installations of a capacity between 3 kW and 10 kW). Installations which will fit in the above mentioned caps are to benefit from the feed-in tariffs for the period

of 15 years from the date they were commissioned for use.

Furthermore, under the regime applicable from January 1, 2016, auction winners will benefit from guaranteed energy prices in the amounts declared in their winning bids. Support to auction winners will, in principle, last up to 15 years from the date on which a renewable energy installation generated energy for the first time. The support will be granted in the form of:

- (i) for installations of a capacity below 500 kW guaranteed energy prices in offtake contracts concluded with obligated suppliers;
- (ii) for other auction winners – payments from OREO S.A. – a special purpose vehicle established by the state to manage the support for renewable energy installations in the auctioning system. These payments will cover negative balance (if any) resulting from the difference between average energy prices on the market (determined based on energy prices on Polish commodity exchange) and prices of energy established in the bids of the auction winners.

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

Poland ratified the Kyoto Protocol on 26 July 2002, and undertook to reduce greenhouse gas emissions by 6% in the 2008-2012 period as compared with the 1988 level of emissions. Poland has fulfilled this obligation (by 2011 the level of emissions was 29% lower than in 1988).

The Polish regime for carbon credits is part of the EU European Trading System (EU ETS), which works on the “cap and trade principle.” The system covers around 45% of the EU’s greenhouse gas emissions and, as far as

individual sectors are concerned, includes power plants, a range of energy-intensive industry sectors and civil aviation. Recently, the system has entered its third phase (2013-2020), which differs significantly from the two previous ones by introducing auctions as the main method of allocating allowances, with free allowances becoming an exception to the auctioning rule. During the third phase of the EU ETS, free allowances will, however, still be allocated to certain energy-intensive industries deemed to be exposed to a significant risk of “carbon leakage.” Poland is also one of the countries benefiting from a derogation on the basis of which free allowances can also be granted to existing power plants.

The principles of the EU ETS have been implemented in Poland in the Act on Greenhouse Gas Allowances Trading System⁴ and the Act on Greenhouse Gas Emissions Management System.⁵

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

Renewable energy power plants are granted priority in connection to the grid. Energy companies engaged in the transmission or distribution of energy are obligated to interconnect renewable energy installations to their grids with the priority over other installations, provided that they fulfill the interconnection conditions, and provided that the interconnection is technically and economically feasible.

Furthermore, if, due to the lack of technical or economic conditions, the interconnection cannot be performed in accordance with the motion submitted by the interested renewable energy producer at the time of the submission

of such motion, the energy company which operates the grid to which the producer intends to be interconnected, while refusing the interconnection, is obligated to indicate a date on which the interconnection will be technically possible following the necessary expansions or modernizations of the grid. If such energy company possesses certain capacities which do not satisfy the needs of the interested producer entirely, it is nevertheless obligated to offer to perform the interconnection at least partially (up to the current limits of the capacity of its grid).

If a given energy company refuses to execute an interconnection agreement, it is obligated to inform the President of the ERA of the refusal in writing, giving grounds for such refusal.

Moreover, renewable energy power plants enjoy priority in transmission and distribution of electric energy. Pursuant to the Energy Law, the electricity system operator is obligated to grant priority in transmission and distribution of electric energy generated from renewable energy sources.

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

Generation of electricity from renewable energy sources is one of areas supported within the framework of the EU grants awarded under the Operational Program Infrastructure and Environment 2014-2020. In addition, there is a possibility to apply for EU grants from regional operational programs.

Investors planning to implement renewable energy related projects can also apply for financial means from national funds for environmental protection. In particular, the National Fund for Environmental Protection and Water Management offers (i) loans for development of distributed renewable energy

⁴ Journal of Laws of 2011, No. 122, item 695, as amended.

⁵ Journal of Laws of 2013, item 1107, as amended.

production and (ii) loans or subsidies for purchase and installation of new facilities serving for production of energy (and heat) from renewable energy sources in residential buildings.

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

Polish law provides for additional incentives in particular for smaller renewable energy based power plants. Power plants of a capacity not exceeding 5 MW are exempted from concession fees and enjoy reduced fees for connecting to the grid – in the amount of 50% of the connection fee (the connection fee is calculated on the basis of the real expenditures borne for performing the grid connection). Interconnection of micro installations is performed free of charge.

Furthermore, a specific support scheme is established in the Act on Biofuels⁶ and it regards the promotion of biofuels. It is called the National Indicative Target. An entity implementing the National Indicative Target is obligated to ensure that during each year a specified minimum share of bio components

and other renewable fuels in the overall amount of liquid fuels and liquid biofuels sold, traded in another form or used by it for its own purposes has been met. The obligation to fulfill the National Indicative Target requirement applies to the entrepreneurs conducting business activity in the scope of production, import or intra-community purchase of liquid fuels or liquid biofuels that sell or dispose of it in any other way on the territory of the Republic of Poland or use such fuels for their own purposes. The National Indicative Target for 2015 and 2016 is 7.10%.

STATISTICS

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

The table below presents the generation of electricity (MWh) by each type of renewable energy source in Poland in 2005 – 2013 based on data published by the Energy Regulatory Authority.

⁶ Journal of Laws of 2006, No. 169, item 1199, as amended.

Type of renewable energy source	2005	2006	2007	2008	2009	2010	2011	2012	2013
	Energy generated [MWh]								
Biogas based power plants	104 465,281	116 691,863	161 767,939	220 882,924	295 311,796	363 595,743	430 537,322	529 384,449	665 143, 194
Solar power plants	0	0	0	0	1,328	1,672	177,805	1 177,532	1 418,771
Biomass based power plants	467 975,678	503 846,206	545 764,936	560 967,435	601 088,244	635 634,844	1 101 188,962	2 208 508,115	3 281 775,130
Wind based power plants	135 291,628	257 037,412	472 116,429	806 318,563	1 045 166,230	1 823 297,061	3 128 672,517	4 612 893,792	6 077 358,308
Water based power plants	2 175 559,099	2 029 635,604	2 252 659,312	2 152 943,187	2 375 767,238	2 922 051,638	2 316 833,384	2 031 689,647	2 439 274,973
Co-combustion	877 009,321	1 314 336,612	1 797 217,058	2 751 954,127	4 287 815,430	5 243 251,417	5 99 582,057	6 711 677,611	3 717 534,077
Total	3 760 301,007	4 221 547,697	5 229 525,674	6 493 066,236	8 605 161,802	10 987 832,375	12 976 992,047	16 095 366, 111	16 182 504,453

In 2013, the national consumption of energy amounted to 157 980 GWh (0.6% higher than it was in 2012), whereas the total volume of energy generated in Poland was 162 501 GWh (1.7% higher than in 2012). Electricity generated from renewable energy sources amounted to: (i) 13.20% of the aggregate amounts of energy sold to final consumers, calculated based on the numbers of green certificates issued; and (ii) 12.56% of the aggregate amounts of energy sold to final consumers, calculated based on the numbers of green certificates submitted for cancellation.⁷

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⁷ Source: Energy Regulatory Authority.

ROMANIA



Irina Moinescu



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GENERAL

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

In accordance with the provisions of Directive 2009/28/EC on the promotion of the use of energy from renewable sources, Romania undertook towards the European Union (EU) the obligation to reach a certain percentage of electricity generated from renewable energy sources out of the final gross electricity consumption, namely 24% by 2020.

In view of accomplishing such national objective, Romania implemented a support scheme for the generation of renewable energy, namely the system of mandatory quotas for green certificates acquisition combined with green certificates trading.

The implementation of such support scheme triggered extensive investments in the renewable energy sector, as a result of which Romania has exceeded its annual intermediary targets of electricity generated from renewable energy sources and is expected to exceed also the 2020 target. Against such background, the support system has undergone several limitations as of the date when it was first implemented (1 November 2011) and new amendments requested by the European Commission (EC) have recently been enacted.

It should be noted that, as per such latest amendments, the Government will approve a mechanism for opening the green certificates support scheme to the electricity produced from renewable sources in other EU member states. Nevertheless, such mechanism will become applicable only after the execution by Romania of bilateral agreements with such other EU members states and based on the terms thereof.

Following the implementation of such mechanism, the electricity generated from renewable energy sources in another EU member state which is imported into Romania will benefit from the green certificates support scheme as if produced in Romania. Similarly, renewable electricity producers will be able to export to other EU member states the electricity generated in Romania, in which case they will no longer benefit from the Romanian green certificates support scheme, but from the support scheme applicable in the relevant member state.

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

Under Romanian law, renewable energy comprises the energy generated from the following sources: (i) wind; (ii) solar; (iii) aero thermal; (iv) geothermal; (v) hydrothermal and ocean energy; (vi) hydraulic energy; (vii) biomass; (viii) landfill gas; (ix) sewage treatment plant gas; and (x) biogas.

In terms of support granted for the generation of electricity from renewable energy sources, the green certificates system applies to hydro energy, if the capacity of the generation unit does not exceed 10MW, wind energy, solar and geothermal energy, biomass, bioliquid and biogas, as well as energy generated from landfill gas and sewage treatment plant gas.

Also, the Romanian law provides that the promotion system shall not apply to the following types of electricity: (i) electricity generated from fuel deriving from imported biomass and industrial/municipal waste, irrespective of the installed capacity of the power plant; (ii) electricity generated in pumped-storage stations from the water previously pumped to the higher elevation reservoir; (iii) electricity generated in power plants using both renewable and conventional sources in the same burning installation, if the energetic content of the conventional fuel exceeds 10% of the total energetic content; (iv) electricity used for the technological consumption of the plant; (v) electricity generated by photovoltaic projects which were located on lands which are qualified as agricultural lands on 31 December 2013; (vi) dispatchable generation units, which exceed the quantities notified through the hourly physical notifications submitted by the producers to the transmission and system operator; and (vii) electricity generated from renewable sources sold at negative prices.

REGULATION

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

Overview of the governing legal framework

As previously mentioned, in view of encouraging investments in the renewable energy sector, which are essential for fulfilling the targets undertaken by Romania towards the

EU, Romania implemented a system of mandatory quotas for green certificates acquisition combined with green certificates trading. As it will be further detailed herein below, such system entails an award to producers of electricity from renewable energy sources, accredited by the regulatory authority, of a certain number of green certificates for each generated MWh (depending on the type of technology used), while the suppliers (and in some limited cases, producers as well) have the obligation to purchase a number of green certificates corresponding to the quantity of electricity invoiced to final consumers and used for their own consumption purposes multiplied by a mandatory quota of green certificates acquisition determined by the regulatory authority.

The main piece of legislation regulating the support system is Law No. 220/2008 establishing the system for promoting the power produced from renewable sources of energy, as subsequently amended and supplemented (Renewable Energy Law).

The support system was notified to and approved by the EC in July 2011. However, during the authorization process, the Romanian authorities undertook to bring some amendments to the then existing legal framework with the purpose of aligning it with the clearance to be obtained from the EC. Hence, the support scheme became applicable starting 1 November 2011 after the amendment of the Renewable Energy Law through Government Emergency Ordinance No. 88/2011 and after the issuance by the National Energy Regulatory Authority (ANRE) of secondary legislation for the implementation thereof.

In 2013, the Renewable Energy Law was amended by means of Government Emergency Ordinance No. 57/2013 (GEO No. 57/2013), whereby severe limitations were introduced to the support scheme effective as

of 1 July 2013. Several other amendments have also been implemented further to the enactment of Law No. 23/2014 approving GEO No. 57/2013 (Law No. 23/2014).

Since the Renewable Energy Law has been successively amended after its initial clearance by the EC, a new review of the Renewable Energy Law thus amended was recently conducted. Within such process, following some specific requests from the EC, new amendments have been recently approved by the Romanian Parliament and the amending law entered into force on 6 June 2015.

Aside from the primary pieces of legislation already referred to above, for the implementation of the green certificates promotion system there were several secondary enactments issued since 2011 until present. The currently in force main secondary enactments are as follows:

- Government Decision No. 994/2013 approving the measures for reducing the number of green certificates in the circumstances provided in article 6 (2), letters a), c) and f) of Law No. 220/2008 establishing the system for promoting the power produced from renewable sources of energy (GD No. 994/2013);
- Government Decision No. 495/2014 establishing a State aid scheme in order to exempt certain categories of final consumers from the application of Law No. 220/2008 establishing the system for promoting the power produced from renewable sources of energy, as subsequently amended and supplemented;
- Government Decision No. 1110/2014 approving the 2015 annual mandatory quota of renewable energy benefiting from the green certificates support system;

- Regulation on the accreditation of producers of electricity from renewable energy sources for the application of the green certificates support system, approved by ANRE Order No. 48/2014, as subsequently amended and supplemented;
- Methodology establishing the annual mandatory quotas of renewable energy benefiting from the green certificates support system and the annual mandatory green certificates acquisition quotas, approved by ANRE Order No. 144/2014;
- Methodology on the monitoring of the green certificates system for the promotion of electricity generated from renewable energy sources, approved by ANRE Order No. 78/2015;
- Regulation on the organization and functioning of the green certificates market, approved by ANRE Order No. 60/2015;
- Regulation on the issuance of green certificates, approved by ANRE Order No. 4/2015.

It should be noted that producers of electricity and heat from cogeneration which use renewable energy sources have the obligation to choose one of the support schemes, i.e., either the system of mandatory quotas combined with green certificates trading, or the bonus support scheme for high efficiency cogeneration.

Such latter scheme has been implemented in Romania starting with 2007 by Government Decision No. 219/2007. After having been authorized by the European Commission, ANRE has adopted, during the course of 2010 and 2011, extensive secondary legislation for the implementation thereof, the scheme being applied as of 1 April 2011.

Under this scheme, qualified producers are granted bonuses on a monthly basis for each MWh of electricity produced from high efficiency cogeneration and delivered into the grid; the funds for such bonuses derive from the monthly contributions (the value of which is established by ANRE) from all electricity consumers (through their suppliers). This support scheme is applicable for the period 2011-2023, provided that no producer can benefit from it for more than 11 consecutive years. Should the aggregate capacity of combined heat and power units benefiting from the scheme reach 4,000 MW, then only high efficiency cogeneration units replacing the existing cogeneration plants shall be eligible for the support scheme.

Overview of the green certificates promotion system

Application period

The green certificates promotion system shall apply for a period of (i) 15 years for electricity generated by new units, (ii) 10 years for electricity generated by refurbished hydropower plants, with an installed capacity of no more than 10 MW, (iii) 7 years for wind power generated by units previously used on the territory of other states, if such units are used in the isolated energy systems or have been commissioned prior to application of the support scheme regulated by the Renewable Energy Law, or (iv) 3 years for power generated by non-refurbished hydropower plants with a maximum installed capacity of no more than 10 MW.

The support scheme shall apply to all producers accredited by ANRE provided that the commissioning, the refurbishment respectively, of the generation units occurs by the end of 2016.

Mandatory quotas of renewable energy benefiting from the promotion system

As of the entry into force of Law No. 23/2014, the annual quotas of renewable energy benefiting from the support scheme (representing the percentage of renewable energy from the final gross consumption of electricity, except for the electricity generated in hydropower plants having an installed capacity of more than 10 MW) for the period 2014-2020 provided by the Renewable Energy Law (which increased gradually from 15% in 2014 to 20% in 2020) have been eliminated.

These quotas will be estimated, published and communicated by ANRE to the Government by 30 June for the subsequent year and will be approved by the Government within 60 days as of the communication thereof by ANRE.

The 2015 quota has been determined by ANRE and approved by the Government at 11.9% of the final gross electricity consumption. The grounds presented by ANRE for such a low quota is that Romania is already close to reaching its 2020 target concerning the percentage of renewable electricity in the final gross consumption.

Number of green certificates awarded to producers

Electricity producers are awarded a number of green certificates for each MWh of electricity generated by plants using renewable sources of energy (with the exception of the electricity used for own technological consumption), which number varies depending on the renewable energy source. The green certificates awarded to accredited producers under the 2011 version of the Renewable Energy Law were as follows: (i) 3 green certificates for each MWh of electricity generated in new hydropower units having an installed capacity of maximum 10 MW, 2 green certificates for each MWh of electricity generated in the refurbished hydropower units having an

installed capacity up to a maximum of 10 MW and 1 green certificate for each 2 MWh of electricity generated in other hydropower units than the new and refurbished units mentioned above, having an installed capacity of maximum 10 MW; (ii) 2 green certificates up to 2017 and 1 green certificate as of 2018 for each MWh of wind power; (iii) 2 green certificates for each MWh of electricity generated from geothermal energy, biomass, liquid biofuel, biogas (an additional green certificate/MWh is awarded for biomass resulting from energetic cultures), (iv) 1 green certificate for each MWh of electricity generated from landfill gas and sewage treatment plant gas; and (v) 6 green certificates for each MWh of solar power. During the testing period, irrespective of the renewable source of energy used, producers will be granted 1 green certificate/MWh.

Postponement from trading of green certificates

For the period 1 July 2013 – 31 March 2017, GEO No. 57/2013, as amended by Law No. 23/2014, postponed the allocation from trading of: (i) 1 green certificate for each MWh of electricity generated in wind power plants and in new hydro power plants with installed capacities not exceeding 10 MW; and (ii) 2 green certificates for each MWh of photovoltaic energy. The postponed green certificates will be recovered gradually starting from 1 April 2017 (for photovoltaic and hydro energy) and from 1 January 2018 (for wind energy), but not later than 31 December 2020. The mechanism under which the green certificates will be recovered is left to the regulatory competence of ANRE, which should issue secondary legislation on this matter. Such postponement measures apply to all electricity producers already accredited by 31 December 2013.

Reduction of the number of green certificates due to overcompensation

ANRE has the obligation to monitor on an annual basis the producers benefiting from the support scheme. Should the monitoring report conclude that the support scheme leads to overcompensation for one or more technology(ies), the Government may decrease the number of green certificates for the respective technology(ies) by means of a Government decision; the measures of reducing the number of green certificates shall apply to producers accredited after 1 January following the enactment of said Government decision.

The first monitoring report referred to the year 2012 and, based on its conclusions, the Government adopted GD No. 994/2013. According to this decision, the producers in the wind, solar and hydro sectors, accredited after 1 January 2014, shall benefit from a reduced number of green certificates, as follows: (i) wind power plants - 1.5 green certificates/MWh until 2017 and 0.75 green certificates/MWh starting from 2018; (ii) solar power plants - 3 green certificates/MWh and (iii) new hydro power plants with installed capacities not exceeding 10 MW - 2.3 green certificates/MWh.

ANRE reported that no overcompensation was registered in 2013 and 2014; therefore, the Government did not introduce new reduction measures as of 1 January 2015, nor shall it introduce such measures as of 1 January 2016.

Exclusions from the application of the promotion system

GEO No. 57/2013 excludes from the application of the support system the quantities of renewable electricity delivered by dispatchable generation units, which exceed

the quantities notified through the hourly physical notifications submitted by the producers to the transmission and system operator.

An additional exclusion from the support system refers to the photovoltaic plants built on lands which are qualified as agricultural lands on 31 December 2013. No such restrictions apply to other types of renewable technologies.

Also, as per the latest amendments to the Renewable Energy Law, no green certificates are to be issued for electricity generated from renewable sources if such is sold at negative prices. Within 90 days as of the entry into force of such legal provision, ANRE should amend the existing secondary regulations in order to implement this exemption.

Cumulating green certificates with other State aid(s)

In the case of plants benefiting from one or several forms of State aid(s) (including EU grants), within the accreditation process, ANRE shall reduce the number of green certificates to be awarded to such producers in order to maintain the internal rate of return considered during the authorization process of the promotion system by the EC.

However, in this scenario, to the extent the reduction of the number of green certificates leads to sub-unitary number of green certificates, the postponement measure introduced by GEO No. 57/2013 mentioned above will no longer be applied.

Also, such reduction mechanism shall apply only after the EC issues its clearance on the latest amendments of the Renewable Energy Law.

Specific rules applicable to renewable projects the capacity of which exceed a certain threshold

Until recently, developers of plants generating renewable energy which had an installed capacity of more than 125 MW were subject to a detailed assessment performed by the EC and were entitled to benefit from the green certificates support system only after the completion of such assessment. In this case, ANRE may modify the number of green certificates to be awarded to the developer of the respective power plant, in accordance with the provisions of the authorization decision of the EC.

However, meanwhile, new EU guidelines have been issued which raise the 125 MW threshold to 250 MW and the Renewable Energy Law was aligned with such EU guidelines.

Market players having the legal obligation to purchase the green certificates

Electricity suppliers have the obligation to purchase a number of green certificates corresponding to the quantity of electricity (i) purchased and used for their own consumption purposes and (ii) supplied and invoiced to final consumers, multiplied by a mandatory quota of green certificates acquisition determined by ANRE (as a number of green certificates/MW) for the respective year.

Similarly, electricity producers have the obligation to purchase a number of green certificates corresponding to the quantity of electricity used for their own consumption purposes (other than technological consumption) and for supplying consumers connected directly to the electricity plant, multiplied by the mandatory quota of green certificates acquisition determined by ANRE for the respective year.

Such acquisitions of green certificates shall be made quarterly, based on the quantity used or invoiced in the respective quarter.

The value of the green certificates acquired by the suppliers/producers for meeting the mandatory green certificates acquisition quota is further invoiced to final consumers, either at the average weighted price of the centralized market transactions concluded in the month preceding the invoice issuance month or at the last available average monthly weighted price. However, certain final consumers (i.e. energy intensive industrial consumers) are exempted from the obligation to pay the green certificates' value for part of their energy consumption. The requirements for qualifying for the exemption, as well as the exempted quantities have been approved through a Government decision and authorized by the European Commission on 15 October 2014.

Trading green certificates

As regards the trading of green certificates, GEO No. 57/2013 imposed the obligation that such be traded in a transparent, centralized and non-discriminatory manner, on the centralized markets managed by OPCOM S.A. (i.e. a joint stock company wholly owned by the Romanian transmission and system operator, in charge of the administration of the energy and green certificates markets). Consequently, as of 1 July 2013, green certificates may no longer be traded through sale purchase agreements concluded by means of direct negotiations.

Nevertheless, Law No. 23/2014 has implemented an exception to such rule, namely (i) the producers operating plants which have an aggregate capacity not exceeding 1 MW per producer, accredited for the green certificates support system, and (ii) the producers operating high efficiency cogeneration plants based on biomass with an aggregate installed capacity not exceeding 2 MW per producer,

accredited for the green certificates support system; which may sell the green certificates based on directly negotiated agreements concluded with the suppliers of the final consumers on the green certificates bilateral agreements market (part of the green certificates market operated by OPCOM).

For the period 2008—2025, the trading value of the green certificates may not be less than EUR 27 (minimum value) or higher than EUR 55 (maximum value) per green certificate; starting from 2011, such values are indexed with the average inflation rate of the Euro zone within the European Union calculated for the previous year and communicated by Eurostat. For the year 2015, such indexed values amount to EUR 29.3971 and EUR 59.8856 respectively.

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

The Romanian energy sector (*i.e.* electricity, including renewable sources, natural gas and cogeneration) is regulated by ANRE, an autonomous authority, under the control of the Parliament, independent from decision-making, organizational and functional perspectives.

ANRE is entirely financed from its own income deriving from tariffs charged for the release of authorizations and licenses, annual contributions of the participants to the energy market and funds granted by international bodies.

In brief, ANRE's main duties consist of drafting, approving and monitoring the application of the mandatory national regulations aimed at ensuring that the energy market works in efficient, competitive, transparent and consumer protective conditions.

With particular view to the renewable energy sector, ANRE is responsible for issuing the secondary legislation governing the system for the promotion of electricity from renewable sources.

Also, OPCOM, in its capacity as administrator of the electricity and green certificates centralized markets, issues specific procedures on the registration and operation of such markets, which are subsequently endorsed by ANRE.

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

An outline of the main permitting and other requirements to be complied with for the development (*i.e.* reaching the ready to build phase) and operation of a power generation project from the perspective of the relevant regulations applicable in the real estate, environmental protection and energy sectors, is presented herein below. Depending on the specificity of the project, other permits and requirements may prove necessary to be obtained/observed.

Development Phase

Real estate related permitting requirements

- **Urban planning certificate**

An urban planning certificate is an informative act issued by the public authorities with a view to (i) provide information about the legal, economic and technical regime of the real estate property where the project is envisaged to be located, as per the approved urban planning documentations; (ii) establish the urban planning requirements, depending on the specificity of the location; (iii) provide a list of endorsements and permits, necessary for the authorization of construction works; and (iv) establish the applicant's obligation to address the competent environment protection

authority, in order to obtain the point of view of such authority and, if applicable, the relevant administrative act.

Obtaining an urban planning certificate is mandatory for the purpose of performing the construction works for an electricity generation plant and for obtaining a building permit.

- **Urban planning documentation (if applicable)**

Under Romanian law, the area corresponding to each locality is subject to three types of urban planning documentation: (i) the general urban plan (in Romanian "Plan urbanistic general" - PUG) having a general applicability to the entire locality area and establishing, inter alia, the delimitation of the *intra muros* territory, the use of the *intra muros* land plots, the protected areas, the areas with a special protection regime as per the legislation in force, the development of the urban technical infrastructure, requirements pertaining to the location and characteristics of the constructions; (ii) the zoning urban plan (in Romanian "Plan urbanistic zonal" - PUZ) having applicability on certain specific areas of the locality and ensuring the correlation of the integrated urban development programs of the zone with the provisions of the PUG; and (iii) the detailed urban plan ("Plan urbanistic de detaliu" - PUD) having applicability on one parcel in connection with the neighbouring parcels and containing requirements on the drawbacks from the lateral and back limits of the parcel, vehicle and pedestrian access, the occupancy of the land.

If following the application for the issuance of the urban planning certificate for a construction project, the issuer thereof concludes that the envisaged project, the specificity of the location or the nature of the investment does not comply with the urban planning documentation approved for the

respective area, in principle, it has the right either to condition the issuance of the building permit on the approval of new urban planning documentation; or, in case the change of the urban parameters is not legally possible under the urban regime of the respective area, to simply deny the request.

Once the new urban planning documentation is approved, the technical documentation for obtaining the building permit for the project may be drafted, exclusively in compliance with such new urban planning documentation.

- **Prior approvals and endorsements established in the urban planning certificate**

An urban planning certificate lists all the endorsements and approvals necessary for the issuance of the building permit. Generally, such endorsements are related to the access and connection to the urban infrastructure, as per the conditions imposed by the emplacement and characteristics of the energy transmission/ distribution systems in the area, the connection to the communication networks, the fire security, civil safety and public health safety, the specific requirements for certain areas with restrictive construction conditions established by special regulations and the point of view of the competent authority for the environment protection.

- **Building permit**

A building permit is the final administrative act authorizing the performance of construction works and ensuring the compliance with the legal provisions regarding emplacement, design, execution, operation and post-use of constructions and afferent installations. It may include relevant requirements to be observed during the execution of construction works, such as (i) conditions for the use of public property; (ii) protection of the neighboring real estate property; (iii) social and sanitary

protection measures in case of temporary workers' accommodation; and (iv) measures for fire prevention.

A building permit is issued based on specific documentation which includes *inter alia* (i) the title over the real estate property, land and/or constructions; (ii) the urban planning certificate; (iii) the approvals and endorsements mentioned in the urban planning certificate; and (iv) technical documentation etc.

Environmental protection related permitting requirements

- **Environmental permit**

An environmental permit is necessary if the construction of the project entails drafting or amendment of plans or programs within the meaning of Directive 2001/42/EC on the assessment of the effects of certain plans and programs on the environment - SEA Directive (e.g. drafting / amendment of the urban plans etc.).

- **Environmental agreement**

An environmental agreement is required for projects listed under Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (EIA Directive) and attests that the development of the project complies with the environmental requirements. This agreement only focuses on the project; it may not be regarded as an authorization for the operation phase.

When deciding upon the issuance of the environmental agreement, the authorities base their decision on an environmental impact assessment prepared by an authorized expert, which analyzes the impact over all relevant environmental factors (soil, air, water etc.).

The competent authority may refuse to issue the agreement if the project would cause a severe impact on the environment. However, in most situations, rather than refusing to issue the agreement, the competent authorities provide for a series of obligations aimed at reducing the impact on the environment.

If the envisaged project may generate a possible impact on protected areas, the environmental authorities must conduct an adequate assessment on such impact and seek the opinion of the relevant manager / custodian of the respective protected area.

- **“Natura 2000” permit**

Where the development of the project might create an impact on Community interest protected areas, a special environmental permit “Natura 2000” shall be issued. For plans/programs/projects that are subject to assessments for issuing the environmental permit, or the environmental agreement, the adequate assessment on possible impact on Community interest protected areas is integral part of the SEA/EIA procedure, therefore no other application is necessary for the issuance of the “Natura 2000” permit.

- **Water location endorsement**

Certain buildings to be erected (i) at less than 500 m outside the 30 m meteorological platforms protection zone, as well as (ii) within floodable areas or within protection areas around waters are subject to the issuance of a water location endorsement.

The competent authority may refuse to issue the endorsement if the relevant building is not secure. However, in most situations, rather than refusing to issue the endorsement, the competent authorities provide for a series of obligations or indications aimed at reducing the risk.

- **Water management permit**

This permit is required if the construction of the project would cause an impact on waters and attests that the construction of the project complies with the requirements in the water management field. This agreement only focuses on the building phase; it may not be regarded as an authorization for operating the facility.

Energy related permitting and other requirements

- **Grid connection permit**

The grid connection permit represents the offer made by the grid operator for connecting a certain generation unit to the electricity grid and contains the technical-economic terms for such connection. The issuance thereof is preceded *inter alia* by the elaboration of a solution study which analyzes the available options for connecting the project to the grid and is endorsed by the relevant grid operators.

Access to the grid may be restricted in case the connection of the project affects the safety of the national energy system due to the failure to observe the technical norms and performance standards or if the grid operator does not have the necessary capacity.

Generally, the permit is valid until the issuance of the connection certificate (please refer to the Operation Phase), but it ceases its validity prior to such moment in certain cases among which if within 12 months as of its issuance date the connection agreement is not concluded or if the connection agreement is terminated.

- **Connection Agreement**

In case the project’s connection to the grid entails performing certain works, following the issuance of the grid connection permit, the holder of the grid connection permit has to

conclude a connection agreement with the relevant grid operator. The subject matter of this agreement shall be the performance of the necessary works for connecting the project (*i.e.* works concerning the installations located between the connection point - physical point of the grid to which the project will be connected, and the delimitation point - point delimitating the installations owned by the developer of the facility from the installations belonging to the grid operator) and the energization of the project. The works for the installations located downstream the delimitation point fall under the responsibility of the developer. In exchange for the performance of the above mentioned connection works, the developer pays the connection tariff.

- **Setting-up authorization**

The execution of any electricity generation capacity having an installed capacity exceeding 1 MW is conditional upon obtaining the setting-up authorization from ANRE.

Such authorization is released based on specific documentation, which includes, *inter alia*, documents attesting the financing sources for building the generation capacity (pre-contractual arrangements attesting the financing sources may also be accepted, while the actual financing contracts may be submitted within the specific term set out in the authorization), the grid connection permit, the environmental agreement and documents attesting the rights over the lands where the generation capacity shall be located.

Operation Phase

Real estate related permitting requirements

- **Reception of the construction works**

The reception of construction works is part of the constructions' quality system and represents the act which certifies the

completion of the construction works according to the building permit, the various permits and approvals obtained during the permitting process, as well as with the approved technical project.

- **Reception for the commissioning of the project**

In case of construction works related to machinery, equipment, technological installations and generation capacities, beside the reception of the constructions themselves, there is also a special reception which has to be carried out for works related to the technological installations, equipment and machineries, as well as for the commissioning thereof. Consequently, the developer should perform both a reception of the construction works and a commissioning reception, each one applied to the relevant parts of the project.

- **Registration for tax purposes**

According to the relevant legal provisions, all types of constructions must be registered for tax purposes with the local fiscal authorities.

Ownership taxes are due starting with the month following the one when the developer acquired the ownership right.

- **Registration with the Land Book**

Registration with the Land Book of the ownership right over the constructions part of the project is a mandatory procedure in order to ensure the enforceability against third parties and stability of the right so acquired. The registration with the Land Book must be performed based on cadastral measurements reflected within the cadastral documentation submitted to the Land Book Office.

- **Civil protection authorization and fire security authorization**

The civil protection authorization is an administrative act attesting to the fulfillment of the measures for complying with the civil safety requirements, while the fire security authorization is an administrative act attesting to the fulfillment of the measures for complying with the fire security requirements and applies, *inter alia*, to constructions having a build up area equal to or exceeding 600 sqm.

Environmental protection related permitting requirements

- **Environmental authorization**

The environmental authorization is mandatory in case of performing activities causing an impact on the environment. It establishes the requirements and the parameters for the operation of the project from the environmental perspective and is valid for 5 years.

- **Water management authorization**

The water management authorization establishes the requirements and the parameters for the operation of the project from the water management perspective and should be obtained for projects which may generate impact on waters. The water management authorization is valid for a maximum of 5 years, but it can be renewed without any overall limitation.

Energy related permitting and other requirements

- **Preliminary energization for tests**

Such procedure is mandatory to the extent the technical norms in force impose the performance of tests for the project. In this case, the preliminary energization shall be

provided in the connection agreement and it will last until complying with the conditions for final energization, but no more than 24 months.

- **Connection certificate**

The connection certificate certifies the fulfillment of the conditions provided in the grid connection permit and further establishes technical conditions for using the grid after energizing the project. The final energization of the project is conditional upon the issuance of the connection certificate.

- **Final energization**

The connection process is deemed completed after the final energization of the project. If the preliminary energization of the project is not mandatory, the issuance of the connection certificate shall be succeeded directly by such final energization.

- **Electricity generation license**

The performance of the electricity generation activity is conditional upon obtaining from ANRE the corresponding license based on specific documentation (which includes, *inter alia*, documents attesting the right of ownership/use over the generation capacities, the connection certificate, documents attesting to the initiation of the process for obtaining the environmental authorization).

The license is issued for a maximum period of 25 years. The duration thereof may be further extended subject to filing an application together with specific documentation at least 60 days prior to the expiry date.

- **Accreditation for accessing the green certificates support system**

The accreditation of the project is a compulsory step for benefiting from the green

certificates promotion system and may be obtained either in two stages (*i.e.* a preliminary accreditation during testing period and a final accreditation, after commissioning the project) or in a single stage, after commissioning the project.

The accreditation decision shall be issued based on specific documentation, which includes, *inter alia*, technical documentation, information on investment costs/other State aid, certificates of origin (in case of biomass/bio liquids/biofuel based projects), and commissioning reception minutes etc.

- **Registration on the Green Certificates Market**

The Green Certificates Market is a competitive market for trading green certificates (independent from the trade of electricity) and comprises two segments, namely: (i) the market of bilateral agreements, where participants conclude green certificates sale-purchase agreements, either further to a public auction process, or directly, only in case of renewable producers (up to 1 MW) and high efficiency cogeneration producers based on biomass (up to 2 MW); and (ii) the centralized market, which ensures a transparent competitive trading environment and offers a reference price for the bilateral agreements.

Registration is mandatory in order to trade green certificates.

- **Undertaking balancing responsibilities**

In order to participate on the wholesale electricity market, every operator should undertake the financial responsibility towards the Transmission and System Operator (TSO) for the impact caused by participants' actions over the national energy system, either by registering as a balancing responsible party or by delegating such responsibility to another balancing responsible party.

- **Registration as participant on the Balancing Market**

The Balancing Market is a centralized market operated by the TSO for collecting the delivery offers for the balancing electricity transmitted by the participants and for using such in order to ensure the operational safety and stability of the national energy system and resolving the grid restrictions.

Participation in the Balancing Market is mandatory for electricity producers licensed to operate dispatchable generation units (*i.e.* a (generating) unit which can comply with a dispatch order and which has an installed power of more than 10 MW – hydropower units / 20 MW - turbo generating units (including nuclear/biomass generators, etc.) / 5 MW – wind/solar units/plants with internal combustion engines).

- **Registration on the centralized wholesale markets**

As it shall be further detailed in a subsequent section, wholesale electricity transactions can only be performed in the centralized markets operated by OPCOM. As such, in order to be able to trade the generated electricity, producers should first register in any of the centralized markets referred to below.

Centralized Market of Bilateral Agreements

The Centralized Market of Bilateral Agreements is an organized market where bilateral agreements are awarded either through extended auction (an auction in which bids are accepted from both sides, *i.e.* sale and purchase) or through continuous negotiation (a negotiation method whereby both the bid price of the initiators, and the bid price of the respondents are subject to change, and the transactions are completed whenever the correlation conditions are met).

In this centralized market, transactions shall be performed based either on framework agreements (*i.e.* agreements with predefined structure and provisions, which contain (i) standard clauses, accepted by all market participants, that cannot be modified; and (ii) specific clauses which refer exclusively to payment terms and methods, as well as financial guarantees or penalties), in case of transactions concluded further to an extended auction; or on standard agreements (*i.e.* agreements having predefined structure, terms and conditions, accepted by all market participants, not subject to any amendments), in case of transactions concluded further to continuous negotiation.

Over the Counter Market

The Over the Counter Market ensures a platform for real time trading by means of bilateral sale-purchase agreements in transparent conditions and a non-discriminatory access to the market, based on the eligibility criteria of each participant. The participants shall have their own eligibility list of potential contractual partners with which they have already agreed on the form of the sale-purchase agreement (EFET agreements).

Day Ahead Market

In the Day Ahead Market, electricity sale and purchase transactions are performed based on the offers submitted by the participants on such market and the electricity is delivered the day subsequent to the trading day. OPCOM acts as counterparty for each transaction performed on this market.

Intra Day Market

The Intra Day Market is aimed at providing its participants with a supplementary instrument for improving the balance of their portfolio for one delivery day. On this market, transactions are performed in sessions organized between the

conclusion of transactions on the Day-Ahead Market for the respective delivery day and a certain time interval prior to delivery, based on firm hourly offers submitted by the participants.

Just as in the case of the Day Ahead Market, OPCOM acts as counterparty for each transaction in this market.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

From a permitting perspective, the Romanian law does not make any distinction between conventional sources and renewable sources projects and thus the exemptions provided for by the law apply to the same extent to renewable energy projects.

As such, setting-up authorizations are not required if the project’s capacity does not exceed 1 MW, while electricity generation licenses are not mandatory for generation capacities which may be switched on without electricity from the system and which are used for the safety supply of the equipment or installations of the holder of such capacity.

Other than that, the licensing regulation provides for shorter terms for the issuance of authorizations and licenses in the renewable sector (*i.e.* 30 days as of filing the complete documentation as opposed to 60 days applicable to conventional sources of energy).

INCENTIVES

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

Currently, the Romanian legislation does not provide for any tax advantages for producers of electricity generated from renewable sources.

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

As detailed under section 3 above, the generation of electricity from renewable energy sources is supported only by the green certificates system. As such, in principle, renewable electricity is traded following the general trading rules applicable to electricity, irrespective of the generation source.

However, until the fulfillment of the national targets regarding the percentage of electricity obtained from renewable energy sources out of the total final gross consumption, the electricity produced from renewable sources which benefits from the promotion system may be traded only with a view to cover the gross final consumption of electricity in Romania.

As regards applicable trading rules, while the former energy law (in force until 19 July 2012) allowed for wholesale electricity transactions to be carried out both by means of bilateral agreements concluded through direct negotiations, as well as in the centralized markets operated by OPCOM, the current energy law requires transactions to be concluded in a transparent, public, centralized and nondiscriminatory manner. According to ANRE's official interpretation of such legal provisions, wholesale electricity transactions can only be performed in the centralized markets operated by OPCOM, namely: (i) the Centralized Market of Bilateral Agreements; (ii) the Over the Counter Market; (iii) the Day Ahead Market and the (iv) Intra-Day Market, each having its specific trading rules.

Nevertheless, in accordance with Law No. 23/2014, as of 17 March 2014, the following categories of producers benefiting from the support system, may conclude electricity sale-purchase agreements by means of direct negotiations with the suppliers of the final

consumers: (i) the producers operating power plants, which have an aggregate capacity not exceeding 1 MW per producer; and (ii) the producers operating high efficiency cogeneration plants based on biomass, which have an aggregate capacity not exceeding 2 MW per producer.

In addition, as per the latest amendment to the Renewable Energy Law, renewable power producers operating power plants with installed capacity (a) between 1 MW to 3 MW per producer and (b) between 2 MW to 3 MW per producer in case of high efficiency cogeneration based on biomass, which benefit from the support scheme and qualify as small and medium sized enterprises under the law, may conclude electricity sale-purchase agreements through direct negotiation.

Furthermore, in accordance with the Renewable Energy Law, the electricity generated from renewable energy sources in plants having an installed capacity of no more than 1 MW, or 2 MW in case of high efficiency cogeneration plants using biomass, can be sold at regulated prices, in which case the so sold quantity of electricity shall not benefit from the green certificates promotion system. Upon the request of such producers, the suppliers are obliged to purchase these quantities of electricity. The trading conditions and the regulated prices should be established by ANRE based on a methodology and notified to the EC; nonetheless, up to this date, ANRE has not enacted such methodology.

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

Currently, the electricity generated from renewable energy sources benefits from the green certificates support system, as detailed in section 3 above.

However, as mentioned in the previous section, the electricity generated from

renewable energy sources in plants having an installed capacity of no more than 1 MW, or 2 MW in case of high efficiency cogeneration plants using biomass, could be sold in the future at regulated prices to be established by ANRE, but the secondary implementing legislation has not been issued yet.

Furthermore, a measure envisaged by the recent legislation amending the Renewable Energy Law is the implementation of a new State aid scheme relying on regulated prices for each type of technology, aimed at supporting generation of electricity from renewable energy sources in units having an installed capacity of less than 500 kW. The State aid scheme should be drafted by ANRE together with the competent ministry within 90 days as of the entry into force of the latest amendments to the Renewable Energy Law and approved by Government decision within another 30 days.

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

General

In 2001, Romania was among the first states to ratify the Kyoto Protocol on climate change. In 2006, Romania transposed Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community (Directive 2003/87/EC). As of 1 January 2007, Romania has implemented the carbon allowance trading scheme and a limit is set on overall emissions from high emitting industry sectors, this limit being reduced each year.

Greenhouse gas emission allowances and permits

The greenhouse gas emission allowance/certificate is the title granting its holder the right to release one tonne of CO₂ equivalent in a certain period of time (a tonne of carbon dioxide equivalent meaning one metric tonne of CO₂ or an amount of any

other greenhouse gas listed in Annex No. 2 to Government Decision No. 780/2006 on the establishment of the trading scheme for greenhouse gas emission allowances, as further amended and supplemented (GD No. 780/2006), with an equivalent global-warming potential).

Starting with the 1st of January 2007, for the installations where one or more of the activities provided in Annex No. 1 to GD No. 780/2006 are performed and which generate specific emissions, the operator must (i) hold and submit an adequate number of greenhouse gas emission certificates allowing it a limited level of greenhouse gas emissions and (ii) have a greenhouse gas emission permit issued by the Ministry of Environment, Waters and Forests in accordance with Order No. 3420/2012 of the Minister of Environment, Waters and Forests approving the procedure for the issuance of greenhouse gas emission permits for the period 2013-2020.

The authority issues the greenhouse gas emission permit for the entire installation or for a part thereof if the operator meets the requirements on the monitoring and reporting of greenhouse gas emissions, as provided in Commission Regulation (EU) No. 601/2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council. The operator must inform the Ministry of Environment, Waters and Forests on the planned or actual changes of the capacity, activity level or operation of an installation, in accordance with Article 24(1) of Commission Decision 2011/278/EU of 27 April 2011 determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC. The Ministry reviews the greenhouse gas emission permit every 5 years at the most or whenever it is necessary.

Allocation of greenhouse gas emission allowances in the electricity production sector

The revised Directive 2003/87/EC introduces the concept of a harmonized EU approach for the allocation of greenhouse gas emission allowances, providing that from 1 January 2013 to 31 December 2020, the basic rule for the allocation of allowances in the electricity production sector will be the acquisition of greenhouse gas emission allowances by auction (except for emissions generated by combustion gas and for transitional derogations). The auctioning procedure of greenhouse gas emission allowances is regulated in Romania under Government Emergency Ordinance No. 115/2011 establishing the institutional framework and authorization of the Government, through the Ministry of Public Finance, to auction the greenhouse gas emission certificates attributable in Romania at EU level.

As of the third period of the scheme for the trading of free allocations of greenhouse gas emission allowances, *i.e.* 2013-2020, the quantity of greenhouse gas emission allowances allocated annually shall be decreased in a linear manner.

For electricity producers which were operating as of 31 December 2008 or the investment process of which had been initiated by the same date, transitional free allocations of greenhouse gas emission allowances are granted, provided that the equivalent value of the allocated allowances is used to finance certain specific investments (as included in the National Investment Plan). The mechanism for the free allocation of greenhouse gas emission allowances to electricity producers for 2013-2020 (as well as the national Investment Plan) are approved under Government Decision No. 1096/2013.

Registration of greenhouse gas emission allowances

Greenhouse gas emission allowances are registered in accounts opened in the names of the relevant holders; the Ministry of Environment, Waters and Forests is the national manager of the accounts in the sole register. The register ensures the record of greenhouse gas emission allowances which are issued, held, transferred and annulled, including the operations with greenhouse gas emission units provided in the Kyoto Protocol.

The operator of each installation must return, by 30 April of each year, a quantity of greenhouse gas emission allowances corresponding to the total amount of greenhouse gas emissions resulting from such installation during the previous calendar year, and these allowances shall be annulled subsequently. For failure to comply with the provisions of the above paragraph, a penalty of EUR 100 shall be applied, for each tonne of issued carbon dioxide equivalent for which the operator did not return the greenhouse gas emission allowances. The payment of the penalties does not exempt the operator from the obligation to return the greenhouse gas emission allowances and the penalty may be applied again in the next calendar year. The obligation to return the greenhouse gas emission allowances does not apply to the emissions which, according to the verifications, are caught and conveyed, for permanent storage purposes, in a site for which a valid storage permit is issued, in accordance with Government Emergency Ordinance No. 64/2011 on the geological storage of carbon dioxide implementing Directive 2009/31/EC on the geological storage of carbon dioxide.

Greenhouse gas emission allowances can be transferred (i) between Romanian residents and residents from other Member States of the European Community and (ii) between Romanian residents and those from third states, other than members of the European

Community, only if the greenhouse gas emission allowances are mutually recognized on the basis of the international agreements executed by the European Community and other countries provided in Annex B to the Kyoto Protocol. The greenhouse gas emission allowances issued by the competent authorities of other EU Member States are recognized by the Romanian central environmental protection authority.

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

Considering the limited capacity of the Romanian electricity grids, access thereto proved to be one of the crucial steps in the development of new electricity generation projects in Romania. The projects for which grid connection permits have been issued and grid connection agreements have been concluded (and which are not yet developed) significantly exceed the capacity of the power grid.

As such, most of the grid connection permits issued during the last period of time (especially those approving the connection to grids located in the most crowded areas, *i.e.* Dobrogea, Moldova and Banat) provide that the connection to the grid is conditional upon the performance of specific reinforcement works to the existing transmission/distribution grids. To this end, to the extent the generation capacity has an installed capacity of more than 1 MW and for the connection thereof to the grid, grid reinforcement works are necessary, the beneficiary of the grid connection permit has the obligation to provide financial guarantees to the benefit of the grid operator issuing the grid connection permit. Until 31 December 2014, the maximum value of the guarantee could have not exceeded 20% of the connection tariff; following such date, the maximum value should be revised annually upon the proposals of the grid operators (no revised value is currently available).

As regards the operation phase, grid operators are required under the law to ensure, based on transparent and non-discriminatory criteria, for all producers of electricity generated from renewable sources, irrespective of the installed capacity of their projects, the transmission and priority dispatch of the electricity, including the possibility to modify the notifications during an operation day, so that the limitation or interruption of the production of electricity generated from renewable sources be applied only in exceptional cases, if such is necessary for the stability and security of the national electro-energetic system.

Also, as per the Renewable Energy Law, the electricity benefiting of the support system, contracted and sold on the market, has guaranteed access to the grid (defined under the law, as the technical and commercial conditions based on which the take-over of electricity benefiting of the support system, contracted and sold on the market, is guaranteed), while the electricity generated from renewable sources which is sold at regulated prices (and does not benefit from the support system) has priority access to the grid (defined under the law as the technical and commercial conditions based on which certain categories of producers of electricity from renewable sources are ensured the possibility of taking over at any time and sale of the entire electricity generated at a given moment, depending on the capacity of the connection to the grid and the availability of the eligible units/resources, to the extent the safety of the national electro-energetic system is not affected); however, until the establishment by ANRE of the regulated prices, such energy benefits from priority access as well.

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

Under the current legal framework, there are no specific incentives aimed at promoting the

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

Such incentives, however, would be available under the general framework on regional aid granted for initial investments. Based on GEO No. 85/2008 on stimulating investments (general framework), the relevant authorities acting as State aid suppliers may grant ad hoc incentives or issue general State aid schemes aimed *inter alia* at, “promoting the production of equipments for increasing power efficiency and the use of renewable energy”. Different types of incentives may be granted: non-refundable financial allocations to purchase tangible and intangible assets, incentives for newly-created jobs, interest bonuses and premiums granted upon contracting credits and other facilities.

Recently, a *de minimis* State aid scheme (namely the *de minimis* aid scheme for "Financing projects from the Energy Efficiency Program (RO 05) of the Financial Mechanism of the European Economic Area 2009-2014", approved by Order of the Economy Minister No. 1212/2014) for initial investments, aimed at promoting energy efficiency was adopted. The objective would be to reduce the energy consumption in Romania in line with the Europe Strategy 2020, the Green Paper "European Strategy for Sustainable, Competitive and Secure Energy", the document "An Energy Policy for Europe", the Kyoto Protocol to the United Nations Framework Convention on Climate Change and Gothenburg Protocol.

The State aid scheme aims to: a) encourage the use of inventions and innovations in order to reduce energy consumption and the purchase of specific innovative equipment; b) limit the emission of greenhouse gases, with positive influences on sustainable development; and c) create jobs. The incentive is addressed to small and medium enterprises which perform initial investments (*i.e.* an

investment in tangible and intangible assets related to: 1) the setting-up of a new establishment; 2) the extension of the capacity of an existing establishment; 3) the diversification of the output of an establishment into products not previously produced in the establishment; or 4) a fundamental change in the overall production process of an existing establishment) in any of the 8 regions of Romania.

The support measures granted to companies consist of non-reimbursable amounts from EU and national funds. The maximum value of the financing is of 70% of eligible costs, respectively minimum EURO 60,000 and maximum EURO 200,000. The total number of beneficiaries is 115 and maximum budget allocated to the scheme is EURO 6,953,000. The scheme is valid until 30 April 2016.

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

For the period 2014-2020, the EU has allocated to Romania funds of approximately EUR 22.4 billion within the cohesion policy financed from structural funds, *i.e.* the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund (CF).

The negotiations between Romania and EU as regards Romania's funding priorities from the EU budget during the period 2014-2020 resulted in a Partnership Agreement between Romania and the EU, approved by the EC on 26 August 2014.

The objectives of the cohesion policy will be fulfilled via 9 operational programs, out of which renewable energy projects could be financed mainly from the Regional Operational Program (ROP) 2014-2020 that was submitted to the EC in January 2015, but not approved yet.

Also, some additional measures related to the energy sector could be financed from the Large Infrastructure Operational Program (LIOP) 2014-2020, submitted to the EC in October 2014, but has not been approved yet.

Once the operational programs are approved, the management authorities of these programmes will initiate periodically, during the period 2015-2020, until the allocated funds are exhausted, call for proposals for each measure in each priority axis of an operational program, along with the rules according to which the funds are to be granted and the rules on the financing applications and the eligible beneficiaries of the financing.

STATISTICS

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

Publicly available information reveals that in 2014, out of the total electricity generated in

Romania, more than 43% was generated from renewable sources as follows:

Hydro	31.32%
Wind	9.64%
Solar	1.55%
Biomass	0.64%
Others	0.03%

(Source ANRE Report on the results of the electricity market monitoring in December 2014)

As regards the total generation capacity installed as at 1 April 2015, out of a total of 23,024.527 MW, renewable energy generation capacities covered 10,969.281 MW, as follows:

Hydro	6648.869 MW
Wind	2962.569 MW
Solar	1256.185 MW
Biomass	101.608MW
Geothermal	0.050 MW

(Source: The official website of the Romanian transmission and system operator (Transelectrica))

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GENERAL

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

As Russia has abundant reserves of traditional energy resources, with the exception of hydroelectric power, renewable sources of energy in Russia have historically played a relatively small role in the country's fuel mix. However, the outlook is slowly beginning to change, as a number of policy initiatives have been undertaken to develop wind energy, hydropower, biofuels, geothermal power and solar energy.

In 2009 the Russian Government approved a set of Guidelines for State Policies in Increasing the Effectiveness of Use of Renewable Energy Sources for the period until 2020.¹ The Guidelines noted that renewable sources of energy (save for large-scale hydroelectric power generation) currently provided only 1% of the total volume of electricity generated in Russia and stated that this proportion should be increased. Under the Guidelines, it is planned that Russia will achieve the following targets for electricity generation based on renewable sources: in 2015 – 2.5%, and in 2020 – 4.5%.

¹ Government Decree No. 1-r, dated 8 January 2009.

Recently, the Russian Government approved a new State Program on Energy Efficiency and

Energy Sector Development to guarantee government financial support (including in the form of subsidies) to encourage the development of renewable energy in Russia.² Notably, this State Program refers to a less ambitious target of 2.5% for electricity generation based on renewable sources by 2020. In addition, the Russian Government's Energy Strategy for the period up to 2030³ (adopted in 2009) also addresses the development of renewable energy sources and energy-saving technologies.

Hydropower potential

Hydropower is one of Russia's greatest energy resources. 9% of the world's hydropower resources are located in Russian territory, mostly in Central and Eastern Siberia and in the Far East. The North Caucasus and western Urals are also understood to have considerable hydropower potential.⁴

Russia currently has 102 hydro-electric plants in operation with a capacity of over 100 MW.

² Government Decree No. 321, dated 15 April 2014, which replaced the old State Program approved by Government Decree No. 512-r, dated 3 April 2013.

³ Government Decree No. 1715-r, dated 13 November 2009.

⁴ minenergo.gov.ru/activity/powerindustry/powersector/structure/manufacture_principal_views/

Russia is the world's fifth largest producer of hydropower, with a total installed capacity of hydroelectric units of about 46,000 MW. In 2011 hydroelectric plants accounted for 15.2% of Russia's total electric power production.⁵ Moreover, a recently approved national scheme of territorial power sector development until 2030 involves the construction (expansion) of a significant number of large-scale hydro-electric plants with a capacity of over 100 MW.⁶

The investment program of RusHydro, the state-controlled hydropower generator, reflects the country's continued investment in hydropower generation. At present, RusHydro is constructing several hydroelectric plants in various regions of Russia, including Nizhne-Bureiskaya in the Amur Region, Ust-Srednekanskaya in the Magadan Region and Gotsatlinksaya in Dagestan. At the end of 2014, after forty years of construction, RusHydro commissioned one of the biggest hydroelectric plants in Russia – Boguchanskaya hydroelectric plant, which is expected to reach its full capacity this year.

Wind power potential

Russia has extensive wind resources, in particular along the Pacific and Arctic coasts and in the southern steppes, although its total installed wind power capacity is not significant. According to a report of the Russian Association of the Wind Power Industry⁷ the total capacity of wind projects at different stages of development (including feasibility) amounts to 3,000 MW, and total installed capacity for all announced projects amounts to 10,000 MW. The national scheme of territorial

power sector development until 2030 envisages the construction (expansion) of up to 16 wind farms in Russia by 2030.⁸ Most of the power projects are located in the south and north-western parts of Russia. Five major wind power projects are planned for the Southern Federal District, including the 100 MW Astrakhan wind farm and the 900 MW Volgograd Lower Volga project, both of which are likely to be commissioned by 2030.

Biofuels potential

Russia has approximately 24% of the world's forests located on its territory. Forests cover approximately 45% of the entire landmass of Russia.⁹ However, biofuels have an insignificant share in the overall energy production matrix of Russia, estimated at 1.2%, with biomass accounting for only 0.5%. The Ministry of Energy also reports that there are no government-backed biofuel projects in operation at this time. The majority of biofuel ventures in Russia are supported by regional governments or financed by foreign investors.

However, the Government is making efforts to improve the regulation of bioenergy in Russia. In April 2012, the Government approved the Complex Program for the Development of Biotechnologies for the period until 2020¹⁰ which addresses the establishment of the technological and technical basis for the development of bioenergy and support for regional projects in the sphere of production of energy and heat from biofuel. The bioenergy measures envisaged by the Program are to be implemented in the framework of the national program "On Energy Efficiency and

⁵ Ibid

⁶ Government Decree No. 2084-r, dated 11 November 2013;

⁷ <http://ravi.ru/en/main.php?lang=EN>;

⁸ Government Decree No. 2084-r, dated 11 November 2013;

⁹ <http://lesa-rossii.ru/>

¹⁰ VP-P8-2322. Complex Program for the Development of Biotechnologies in the Russian Federation for the period until 2020 approved by the Russian Government on 24 April 2012

Energy Development”, which was recently approved by the Government to support biofuel production in Russia.¹¹

The use of biomass and waste for heat generation is considered to be economically viable in a number of Russian regions, and a number of pilot research projects have been undertaken. In particular, the Food and Agriculture Organization of the United Nations has conducted a forestry sector study in the Russian Far East in cooperation with the EBRD. This study has identified initial opportunities for liquid biofuel investments in this particular region due to a high volume of under-utilized low-quality wood, wood residues, and forest industry waste.¹² The Russian Federal Forestry Agency has developed a list of priority projects for biofuel production in Russia.

There are also a number of projects that are being implemented as investment projects within the framework of national climate change policy.¹³

With respect to biogas, currently there is no government program to promote the construction of biogas facilities in Russia. So far there are four major biogas projects in 3 regions that are operating in Russia, including one in the Kaluga region that produces biogas from agricultural waste, having a thermal power capacity of 300 KW and electrical capacity of 200 KW. A number of agreements have been signed recently for the construction of an additional 50 bioenergy

stations in Russia using agricultural waste, including in the Belgorod, Voronezh and Rostov regions.

Geothermal power potential

Geothermal energy is used in Russia both for heat supply and for electricity generation. Russia's geothermal resources are located primarily in Kamchatka, the Kuril Islands, the Northern Caucasus and in the Kaliningrad Region. Currently there is understood to be somewhere in the range of 92-129 MW of geothermal power generation capacity in operation.¹⁴ 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.¹⁵ In 2011, a Russian-Icelandic inter-governmental agreement on cooperation in geothermal energy development was signed, under which the parties agreed to design and build geothermal energy-generating facilities in Russia. In June 2011, Rushydro signed a cooperation agreement with Reykjavik Geothermal to build geothermal power plants in Russia (primarily in Kamchatka), with total installed capacity of up to 200 MW.¹⁶

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. 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.

¹¹ Clause 4 of VP-P8-2322, Complex Program for the Development of Biotechnologies in the Russian Federation for the period until 2020, approved by the Russian Government on 24 April 2012; Government Decree No. 321, dated 15 April 2014.

¹² <http://www.ebrd.com/pages/workingwithus/procurement/notices/csu/42057.shtml>

¹³ 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

¹⁴ EBRD Renewable development initiative: Russia (country profile, 2009)

¹⁵ Report on Geothermal Energy Projects in Russia published in the Bulletin of Russian Academy of Physical Science, No. 1 2009

¹⁶ Rushydro official press release, dated 15 June 2011

The process of construction of new solar power plants continues. Thirty-three solar projects were selected for construction under capacity supply agreements in 2014, and a further 32 in 2015.¹⁷ In February 2015 the first solar power plant construction of which was financed in this was certified by the Market Council – Kosh-Agachskaya solar power plant in Altay, with installed capacity of 5MW.

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”)¹⁸. Renewable energy sources so defined include:

- solar energy;
- wind energy;
- water energy (including energy from waste water), excluding use of such energy at pumped hydroelectric power plants;
- tidal energy;
- wave energy;
- geothermal energy using natural underground heat carriers;
- low heat energy of earth, air and water with the use of special coolants;
- biomass, including plants specially grown for energy generation and trees, as well as industrial and consumer wastes (excluding wastes from the use of hydrocarbon

material and fuel), biogas, gas separated from industrial and consumer waste dumps; and

- gas from coal workings.

REGULATION

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

The renewable energy sector is governed in particular by the Electricity Law, which sets out the main provisions for the trade in power and capacity derived from renewable energy sources. Further provisions are contained in resolutions of the Russian Government, decrees of the Russian President and orders of the Ministry of Energy. More detailed procedural rules are set out in instruments adopted by the governing body of the wholesale and retail electricity markets, the Market Council.¹⁹

Apart from the Electricity Law, the following are the principal laws and regulations concerning renewable energy sources:

- Federal Law No. 261-FZ “On Energy Saving and Increasing Energy Efficiency and on Amendments to Certain Legislative Acts”, dated 23 November 2009. This law establishes a legal framework for activities supporting and promoting energy saving and increasing energy efficiency by, among other things, using renewable sources.
- Government Decree No. 1-r, approving the guidelines for state policy for increasing the effectiveness of the use of renewable energy sources for the period until 2020, dated 8 January 2009 (the “Policy Guidelines”).

¹⁷ <http://www.atsenergo.ru/vie/proresults/>

¹⁸ Article 3 of the Electricity Law

¹⁹ 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”).

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 recognition of generating facilities as operating using renewable energy sources, which can be granted pursuant to an application submitted by the facilities' owner to the Market Council.
- Government Resolution No. 850, approving the criteria for granting subsidies from the federal budget to compensate for the costs of technological connection of generating facilities with a capacity not exceeding 25 MW qualified as facilities using renewable energy sources, dated 20 October 2010 (the “Compensation Rules”). In addition to this, on 22 July 2013 the Ministry of Energy issued Order No. 380 approving the rules for granting subsidies from the federal budget so that renewable projects investors may benefit from the compensation scheme.
- Rules for maintaining the register of issuance and cancelation of certificates confirming volumes of power generated by generating facilities based on renewable

energy sources, approved by Government Resolution No. 117 dated 17 February 2014 (the “Registration Rules”). The Registration Rules set out the procedure for maintaining a register of certificates confirming the quantity of power produced by generating facilities using renewable energy sources.

- Part XV of the Rules of the wholesale power and capacity market (Government Resolution No. 1172 dated 27 December 2010), concerning the system of tenders for renewable generation projects to qualify for agreements for the delivery of renewable capacity.
- The rules of the retail power and capacity market (Government Resolution No. 442 dated 4 May 2012) (“Retail Market Rules”) contain a procedure for the compulsory acquisition of power produced from renewable sources by the distribution network operators in order to compensate for network losses.
- Government Resolution No. 117 with respect to certain issues related to certificates confirming the volumes of power produced by generating facilities using renewable energy sources, dated 17 February 2014. The Resolution, in particular, establishes a procedure for the issuance, amendment and cancellation of such certificates as well as maintenance of a register of them. (Previously the procedure for maintenance of the register was defined by the Ministry of Energy).

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

The principal regulatory body having immediate responsibility for the administration of incentives for power generators using renewable sources is the Market Council, which has responsibility for the wholesale power market generally. In particular, the

Market Council is responsible for recognizing generating facilities using renewable energy sources as qualifying generating facilities and for maintaining the register of certificates which confirm the volumes of power generated by them.

The Ministry of Energy and the Russian Government have joint responsibility for developing and adopting applicable subordinate legislation under the Electricity Law, with the adoption of detailed market rules being further delegated to the Market Council.

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

In order to implement a renewable power project, a generating company must obtain a number of permits and approvals as required by Russian law.

In principle, it is possible for generating companies to operate on either the wholesale or the retail electricity market. The wholesale market is open to generators whose level of installed capacity is equal to or exceeds 5 MW. Subject to limited exceptions, any generating object connected to the grid having a capacity of 25 MW or more can *only* sell its power and capacity on the wholesale market. Also participation in the tender system to enter into agreements for the delivery of renewable capacity described in response to question 7, below is only open to registered wholesale market participants. In order to be able to operate on the wholesale power market, a generator must be registered as a market participant, enter into the accession agreement governing participation in the trading system and a number of other standard form agreements covering grid connection, dispatch and various aspects of the trade in power and capacity, and fulfil certain

technical requirements. The requirements for participating as a generator in the retail market are less extensive.

For the purposes of benefitting from the various forms of support available, a generating company using renewable energy sources has to obtain a *qualifying certificate* confirming volumes of power generated using renewable energy sources. The Market Council is responsible for issuing such certificates and maintaining the relevant register. For this purpose, the Market Council treats a facility as a qualifying facility operating on a basis of renewable energy sources if such facility:

- uses only renewable energy sources or a combination of renewable and other energy sources for generating purposes;
- is in operation (commissioned and not closed for repairs nor decommissioned);
- is connected to the grid and equipped with metering equipment as required by Russian law; and
- is included in the general scheme and program of long-term development of the electric power sector in a particular region of the Russian Federation where such facility is located.

In addition, power generating facilities are treated as hazardous industrial facilities the operation of which may require additional permits, including environmental approvals.²⁰

²⁰ Federal law No. 174-FZ "On Ecological Expert Review" dated 23 November 1995; Federal law No. 7-FZ "On Environmental Protection" dated 10 January 2002; Federal Law No. 96-FZ "On Air Protection" dated 4 May 1999; Federal Law No. 116-FZ "On Industrial Safety of Hazardous Industrial Facilities" dated 21 July 1997.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

No special licenses as such are required to generate power in Russia although, as we describe above, access to the wholesale power market is subject to a number of formal requirements. There is no general exemption from these requirements for renewable generation. However, as mentioned above, any generating facilities with a capacity of less than 25 MW can sell power and capacity on the retail market, which is more lightly regulated.

INCENTIVES

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

Taxpayers who invest in the creation of facilities that pertain to sources of renewable energy are permitted to apply for investment tax credit. The credit is given in the form of a deferral of profit tax and regional and local taxes (e.g., property tax, motor vehicle tax) for a term from 1 to 5 years. The credit is offered in respect of 100% of the value of the qualifying investment. The interest rate applicable to the deferred tax is to be within the range of half to three quarters of the Russian Central Bank's refinancing rate (being, since 14 September 2012, 8.25%).

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

In general, the Electricity Law provides for the following possible support mechanisms for generating facilities using renewable energy sources:

- Either (a) the addition of a premium to the wholesale market price for power (such premium to be determined in accordance with a procedure to be approved by the Russian Government) or (b) preferential treatment of renewable generators in the capacity market.²¹ In practice, the Government has chosen to implement the latter, as described below.
- A requirement for network companies to buy power for the purposes of compensating for line losses primarily from renewable energy sources. The procedure for this was added to the Retail Market Rules in early 2015.²²
- Compensation by the state for the connection costs of renewable energy installations with an installed capacity of not more than 25 MW.²³

Recent developments regarding these mechanisms include the following:

- In October 2012, the Russian Government issued a decree requiring the preparation of a set of measures to encourage renewable generation, including pricing parameters and a tariff calculation methodology for the supply of power generated from renewable sources for the compensation of line losses.²⁴
- In May 2014, the Government issued a decree approving a new state program for energy efficiency and the development of the electric power sector to allocate resources from the Federal Budget, including for the purposes of subsidizing the network connection costs of renewable

²¹ Article 21(1) of the Electricity Law.

²² Article 32(3) of the Electricity Law. Government Decree No. 47 dated 23 January 2015

²³ Article 21(1) of the Electricity Law.

²⁴ Government Decree No. 1839-r, dated 4 October 2012.

generation projects.²⁵ In May 2013, the Ministry of Energy issued a decree for the provision of such subsidies.²⁶

- In May 2013, the Government issued a resolution to establish a mechanism to support renewable generation through the capacity market.²⁷ The resolution provides for a system of tenders for the selection of renewable generation projects which projects will, upon completion, be assured certain capacity payments over a period of time.
- In January 2015, a decree was adopted which amended certain legal acts (including the Retail Market Rules) in order to stimulate use of renewable energy sources on the retail electricity markets. Among other things, this decree set out certain formulae and indices to be taken into account in approving tariffs for energy generated from renewable sources.

The support mechanisms envisaged are for the benefit of generating facilities that are acknowledged as qualifying facilities using renewable energy sources, as noted above. However, the support mechanisms are limited to solar, wind and small-scale (less than 25 MW) hydroelectric projects.

For the purposes of the capacity market support system, a certain volume of renewable generation projects is to be selected through an annual tender process, operated by the Commercial Operator of the power market (the Administrator of the Trading System).

Successful bidders qualify to enter into long-term agreements for the delivery of renewable capacity (“ADRCs”)²⁸, analogous to similar agreements that have existed for some time to support investment in conventional thermal generation. The contract entitles the operator of the project to capacity payments over a fifteen-year supply period calculated on a basis set out in the resolution that is intended to allow for recovery of capital invested and a certain rate of return (up to 14% for projects selected before 1 January 2015 and 12% for projects selected thereafter). The introduction of the ADRC system has also been accompanied by amendments to the Policy Guidelines to promote localization of renewable projects (i.e., a policy objective that relevant equipment be built in Russia). In order to qualify for the tender selection process, a project must meet certain minimum projected levels of localization, and a significant discount is applied to the capacity payments received by projects that do not in fact meet the target level.²⁹ The first tender for participation in the scheme was held in September 2013.

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

Russian law does not provide for any minimum price guarantee but, as noted above, makes general provision for an incentive mechanism through either the addition of a premium to the wholesale market price or preferential treatment in the capacity market, and the Russian Government has chosen the latter option (which provides assurance of a certain level of capacity payment for projects that are successful in the tender process).

²⁵ Decree No. 321 dated 5 May 2014.

²⁶ Decree No. 380 dated 22 July 2013.

²⁷ Resolution No. 449, dated 28 May 2013.

²⁸ The full name is “*agreements for the delivery of capacity of qualifying generating objects functioning on the basis of renewable energy sources*”.

²⁹ Government Decree No. 861-r amending the Policy Guidelines, dated 28 May 2013.

Further, the tariff regulation applies to the purchase of power from renewable generators for the compensation of line losses.³⁰

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

Having signed the Kyoto Protocol in 1999, Russia was the last country to ratify the agreement, which came into effect on 16 February 2005, and it has been relatively slow in implementing the measures necessary to establish a national trading program. Russia adopted a number of regulations between 2006 and 2008 in order to comply with its commitments under the first compliance period of the Kyoto Protocol (2008 – 2012) and to be eligible to transfer and acquire emission reduction units (“ERUs”) generated by joint implementation projects (“JI Projects”). In particular, in May 2007 the Government issued key Resolution No. 332 (which is no longer in force), which outlined a procedure for reviewing and approving JI Projects. More than 40 JI Projects were submitted for approval under Resolution No. 332, but none were approved under that system.

In June 2009, the Russian Government issued a decree that required the preparation of further legislation aimed at establishing an operational emissions trading mechanism in Russia (in line with Article 17 of the Kyoto Protocol) and facilitating the procedure for approving JI Projects.³¹ In October 2009, the Government reaffirmed Russia’s interest in implementing the Kyoto protocol by introducing significant changes to the approval procedure for JI Projects, under Government Resolution No. 843. Public administration of JI Projects was primarily assigned to Sberbank,

a major Russian bank, which was appointed as the operator of carbon units, with the Ministry of Economic Development (“MED”) to act as a coordination point. JI Projects that were submitted under Resolution No. 332 could be resubmitted for approval through the new tender procedure, at the request of the investor (only Russian companies). This change resulted in the approval of the first Russian JI Projects through a number of tenders held by Sberbank.

In June 2011, the Russian President announced the need to make full use of the possibilities offered by the JI mechanism before the end of the first Kyoto Protocol compliance period and also stressed the need to amend applicable law in order to simplify the procedure for approving JI Projects. This resulted in the issue of a new regulation designed to simplify the approval process for JI Projects, which repealed Resolution No. 843.³²

In December 2012 during the meeting held in Doha, Qatar, the parties to the Kyoto Protocol adopted new amendments to the Kyoto Protocol which include, among others, new quantitative emission limitation or reduction commitments for the second commitment period (2013-2020). Russia, which remains a party to the Protocol, decided not to undertake any quantitative commitments on reduction of greenhouse gas (“GHG”) emissions under the Protocol, but instead chose to set a national target for limiting the level of GHG emissions.

In particular, on 30 September 2013 the President issued Decree No. 752 “On the Reduction of Emission of Greenhouse Gases” which establishes a national goal to achieve by 2020 a level of GHG emissions in the country not exceeding 75% of the 1990 level of such emissions. Following this Decree,

³⁰ Article 3(2) of Regulation No. 1178, dated 29 December 2011, On Price Formation in the Sphere of Regulated Prices (Tariffs) in Electrical Power.

³¹ Government Decree No. 884-r, dated 27 June 2009.

³² Government Resolution No. 780 dated 15 September 2011.

on 2 April 2014 the Government approved a national action plan (specific measures) to achieve this national goal.³³

On 22 April 2015 the Russian Government issued Resolution No 716-r, which approved a concept for the establishment of a system of monitoring, reporting and review of the volume of emissions of greenhouse gases in Russia. This concept is to be implemented in three stages over the period from 2015 until 2020.

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

Power plants using renewable energy do not enjoy priority in connection. However, as noted above, there is provision for smaller renewable energy units to be granted subsidies from the federal budget towards connection costs.

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

As noted above, the Policy Guidelines and the regulations for the support of renewable generation through the capacity market contain provisions to promote renewable generation facilities with a high degree of localization. For this purpose, the Government has introduced a numerical measure of localization (expressed as a percentage), and published target levels for the degree of localization of renewable generating facility of each type. These are: (i) for wind projects, 35% for 2014, rising to 65% from 2016; (ii) for solar projects, 50% for 2014, rising to 70% from 2016; and (iii) for hydroelectric projects, 20% for 2014 (with capacity less than 25 MW), rising to 65% from 2018.

³³ Government Decree No. 504-r, dated 2 April 2014.

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

In addition to the measures already mentioned, the Policy Guidelines and Energy Strategy³⁴ envisage in general terms that further initiatives may be adopted by the Russian state aimed at promoting the renewable power sector and encouraging investment in it, but few details are given.

STATISTICS

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

If large scale (25 MW or more) hydroelectric stations are excluded, in 2009 the total installed capacity of generating facilities using renewable energy sources did not exceed 2200 MW, which was approximately 1% of Russia's total power generation capacity.³⁵ Likewise, the percentage of power generated from renewable sources did not exceed 1% (8.5 billion KWH) of the total volume of generation.³⁶ We are not aware of any officially published statistics breaking down this aggregate figure by specific types of renewable energy source on a country scale.

As already noted, however, large-scale hydroelectric stations make a significant contribution to Russia's power production (at approximately 15.2%).

³⁴ Part III of the Policy Guidelines, Article 10 of the Energy Strategy.

³⁵ Part II of the Policy Guidelines.

³⁶ Ibid.

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SERBIA

Selma Šehović

MARIĆ & CO

GENERAL

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

In Serbia over 97% of gross final electricity consumption is covered by local generation. In 2012, the total supply of electricity reached up to 37,910 GWh, out of which 36,926 GWh was produced locally, mainly – in coal fired thermal power plants (approx. 70%) and hydropower plants, including small and pumped storage hydropower plants (approx. 28%). Serbia also imported 6,441 GWh and exported 5,457 GWh of electrical energy.

At the end of the first quarter of 2013, the operational capacity of hydropower plants in Serbia was 2,835 MW, including 44 MW in small hydropower plants and 614 MW in pumped storage. Also 2 MW in biogas power plants were operated, as well as 0.5 MW in wind and 2.4 MW in solar (photovoltaic) power plants.

Serbia has a promising potential for renewable energy, including a largely untapped hydropower potential, mainly for medium-sized and small power plants, of about 4.6 GW, as well as 2.3 TWh per year for wind, 50 MW for geothermal and 33 MW for solar energy. Biomass from wood and agricultural

waste is arguably considered as the highest potential among all renewable energy sources at an estimated 19 TWh per year.

Following its commitments under the Treaty establishing the Energy Community, Serbia transposed the Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and, consequently, committed to a binding 27% target of energy from renewable energy sources in gross final energy consumption in 2020, compared to the share of 21.2% in 2009.

In June 2013, the Government adopted the National Renewable Energy Action Plan (NREAP), together with a revised forecast document on the measures of cooperation between the EU Member States and Contracting Parties of the Energy Community. The NREAP foresees achieving a 27.3% target of energy from renewable energy sources in 2020. It envisages increases of renewable energy shares in electricity to 36.6% from 28.7%, for heating and cooling to 30% from 28.7%, and for the transport sector to 10% from 0% in 2009.

To this end, as regards the production of electricity from renewable energy sources, Serbia is aiming for EUR 2 billion of investments, mostly from the private sector, to

install 1.1 GWh of new renewable energy capacities starting from 2014, much of it by exploiting its hydropower potential. However, an ambitious project for the development of a 1 It is also important to mention, that Serbia is the only Contracting Party of the Energy Community that plans to enter into a cooperation mechanism and to transfer excessive renewable energy to the EU Member States. Italy and Serbia concluded an agreement allowing for the electricity produced in the newly built 10 small hydropower plants in Serbia, as estimated at 976.9 MWh in the years 2016-2020, to be physically transferred and consumed in Italy.

The legislative framework regulating the renewable energy sector in Serbia guarantees favourable feed-in tariffs for electricity produced from renewable energy sources for a period of 12 years, after which power purchase guarantees are locked in at the market price. Moreover, competent institutions are further trying to improve the business environment for energy investors, including simplified authorisation procedures.

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

Renewable energy is defined by the Energy Law 2011 (as further amended) as energy produced from non-fossil renewable energy sources, such as: watercourses, biomass, wind, sun, biogas, landfill gas, sewage treatment plant gas and sources of geothermal energy.

The definition and coverage of renewable energy under the legislation in force is considered as corresponding with the respective concept established in the Directive 2009/28/EC. Furthermore, the coverage of the renewable energy sources, as defined by the Energy Law 2011, is not finite and may be therefore extended under the applicable legal acts in case new renewable energy technologies will require for regulation.

REGULATION

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

Regulation of the renewable energy sector in Serbia is based on the domestic transposition and implementation of the measures stipulated in the Directive 2009/28/EC, as required under the terms and conditions elaborated by the Energy Community law. The legal framework for renewable energy is split among several laws and secondary legal acts.

The main law regulating the renewable energy sector in Serbia is the *Energy Law 2011* (as further amended), which defines the legislative framework for renewable energy, including the transport sector. It has transposed to a great extent the main principles arising from the Directive 2009/28/EC related to support measures for renewable energy producers of electricity, heat and for biofuel producers, as well as the definition of privileged producers eligible for support schemes, and the introduction of guarantees of origin for the electricity and heat produced from renewable energy sources.

The Energy Law 2011 foresees that implementing acts are to be adopted by the Government or Ministry responsible for energy. Currently, four Governmental decrees deal with feed-in tariffs for renewable energy technologies, acquiring the status of privileged producers, and the incentive fee for the promotion of electricity from renewable energy sources applied to final customers.

The following Governmental decrees, as adopted in January 2013, regulate the application of renewable energy support schemes in Serbia: *Decree on the Conditions and Procedure for Obtaining the Status of Privileged Electricity Producers*, *Decree on Incentive Measures*

for Privileged Electricity Producers, Decree on the Method for Calculation of the Incentive Fee and its Distribution, and the annual Decree on the Amount of the Incentive Fee.

Other secondary legislation relevant for activities in the renewable energy sector are : *Decree on the Conditions of Electricity Delivery*, as adopted by the Government in July 2013, *Licensing Rulebook*, as adopted by the Ministry of Energy, Development and Environmental Protection in March 2013, as well as tariff systems and methodologies applied to the electricity sector, as adopted by the national regulatory authority – the Energy Agency of the Republic of Serbia (AERS), and electricity grid codes, as adopted by competent operators and approved by AERS.

Strategic guidelines for developments in the renewable energy sector are set by the *Energy Sector Development Strategy* (2005) and the *NREAP* (2013).

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

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

- *The Government* forms the national energy policy, submits the Energy Sector Development Strategy to the National Assembly, adopts the Implementation Programme of the Energy Sector Development Strategy, monitors and ensures practical implementation of the Strategy, also prescribes energy emergency measures, passes national action plans, including the NREAP, adopts the Energy Balance, and other secondary legislation acts regulating performance in the energy sector, including the use of renewable energy sources and incentive schemes applied thereto.

- *The Ministry of Energy, Development and Environmental Protection*, which is currently in charge of the energy sector, implements national energy policies established by the National Assembly and formed by the Government, submits proposals for legal acts to be adopted by the Government, adopts secondary legislation within its competence, issues energy permits for electricity generation facilities, grants the status of privileged producer of electricity, and also carries other assigned administrative functions.
- *The Energy Agency of the Republic of Serbia (AERS)* is a designated independent regulatory authority vested with powers in the energy sector under the Energy Law 2011. AERS is in charge of the issuance of licenses for activities in the energy sector, regulation of the electricity market, adoption of methodologies for calculation of regulated tariffs and setting those tariffs, monitoring the implementation of requirements for transparency and independence of energy activities, approval of grid codes submitted by system operators in charge, and also performs other regulatory functions.

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

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

Development, construction and operation of power plants using renewable energy sources are subject to the following main administrative procedures and authorisations:

- *Environmental Impact Assessment (EIA)* performed under the terms and conditions stipulated in the Environmental Protection Law 2004 and the Environmental Impact Assessment Law 2004 (as further amended), other related laws and their implementing regulations. The EIA is mandatory for construction of power plants over 50 MW of installed capacity, whereas for power plants of installed capacity from 1 MW (from 2 MW for hydropower plants and from 10 MW for wind power plants) to 50 MW the EIA may be requested by the competent authority.
- *Energy permit* issued by the Ministry of Energy, Development and Environmental Protection, which authorises the construction of power plants for commercial activities in the electricity sector, i.e., for production of electricity. Each developer of the renewable energy project is obliged to hold a final and binding energy permit before the construction permit stage. However, the energy permit is not required if the renewable energy project is being developed on the basis of a granted concession pursuant to the Public Private Partnerships and Concessions Law 2011.
- *Construction permit* issued by the local municipality (for power plants below 10 MW of installed capacity), the Ministry of Construction and Urbanism (for power plants from 10 MW of installed capacity), or by the Autonomous Province of Vojvodina (for power plants from 10 MW of installed capacity located entirely in the territory of the Autonomous Province). The construction permit is issued under the terms and conditions of the Planning and Construction Law 2009 (as further amended). Obtaining an energy permit is a precondition for receiving a construction permit. For construction of wind power plants, the approval from the Agency for Flight Control, confirming that the wind power plant does not endanger flight safety, is also required.
- *Building use permit* issued under the terms and conditions of the Planning and Construction Law 2009. Following required inspections, this permit certifies that the power plant is in full conformity with the construction permit and related requirements, and is allowed for its exploitation.
- *Electricity license*, which authorises the production of electricity and is issued by the AERS for a period of 30 years. The electricity license is issued under the terms and conditions stipulated in the Energy Law 2011 and Licensing Rulebook 2013. The electricity license is not required for power plants with the installed capacity of up to 1 MW and for the production of electricity for personal needs (i.e., in cases where the generated electricity is consumed by the producer itself and is not delivered to the grid).

In case the electricity producer using renewable energy sources intends to apply for the applicable support schemes (incentives), namely – the electricity purchase guarantee and feed-in tariff, it is obliged to obtain the status of a privileged producer under the terms and conditions stipulated in the Energy Law 2011 and the applicable Governmental Decree as referred to hereinabove.

Authorisation to produce the electricity and thus obtaining an electricity license is also subject to the connection of the power plant to the electricity grid regulated by an agreement with the system operator in charge under the terms and conditions of the transmission or distribution grid code respectively. Each producer is required to trade in electricity based on valid power purchase agreements. All electricity produced by privileged producers during the determined support period of 12 years is being purchased by the public supplier.

Construction of hydropower plants is subject to additional authorisation requirements, i.e., the construction permit for such power plants will be issued only after obtaining the Water Conditions and Water Approval, while the building use permit – after the Water Approval under the terms and conditions stipulated in the Water Law 2010.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

Under Article 21 of the Energy Act, license-exempt generation of electricity is permissible for one's own purpose, encompassing the generation of renewable energy as well. License exempt generation for commercial purposes is excluded.

INCENTIVES

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

Amendments to the Excise Law, as adopted in May 2013, introduced excise duty on biomass products – biofuels (used for transportation) and bioliquids (used for the production of electricity and heat). The definition of biofuels and bioliquids is provided in the Energy Law 2011.

The excise duty applied to biofuels and bioliquids from 1 January 2014 is equal to RSD 46 per litre (approx. EUR 0.39 per litre). From 1 January 2015 the excise to duty will be equal to RSD 50 per litre (approx. EUR 0.43 per litre).

Depending on the intended use, the buyer of biofuels and bioliquids is entitled to a refund of paid excise duty. The amount of the paid excise duty may be reduced up to RSD 39.50 per litre (approx. EUR 0.34 per litre) –

for biofuels used as engine fuel in transportation, up to RSD 2.50 per litre (approx. EUR 0.02 per litre) – for bioliquids used for heating, and for the total amount of the excise duty – for bioliquids used as fuels for the production of electricity and heat.

The amounts up to which paid excise duty is reduced shall apply until the start of application of regulations that specify the mandatory biofuels and bioliquids content in gas oil.

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

The public supplier is obliged by the Energy Law 2011 to purchase the entire amount of electricity generated by privileged producers and delivered to the grid. The status of privileged producer is acquired by the decision of the Ministry of Energy, Development and Environmental Protection in accordance with the Governmental Decree on the Conditions and Procedure for Obtaining the Status of Privileged Electricity Producers, as adopted in 2013. Currently, all functions of the public supplier are performed by the Public Enterprise “Elektroprivreda Srbije”.

The public supplier and the privileged producer enters into a written power purchase agreement, which stipulates the terms and conditions for practical implementation of the guaranteed purchase of electricity from renewable energy sources, respective rights and obligations of the public supplier and the privileged producer, and also determines the electricity price in line with applicable incentives (i.e., minimum price guarantee).

The content of such power purchase agreement is provided in the Governmental Decree on Incentive Measures for Privileged Electricity Producers, as adopted in 2013. The parties, however, are allowed to deviate from

these requirements subject to a prior consent by the Ministry of Energy, Development and Environmental Protection.

Payments made by the public supplier for the electricity purchased from privileged producers are being compensated from incentive fees paid by each final customer. Currently, as set by the Government, the incentive fee is equal to RSD 0.044 per kWh (approx. EUR 0.00038 per kWh). The incentive fee is being paid by final customers together with payments for the electricity consumed and grid services received.

The transmission system operator and distribution system operator, depending on the grid to which the power plant is connected, are obliged to accept to the grid all deliveries of electricity from a power plant operated by any privileged producer, except for in exceptional cases where the security of the power system is threatened. Quantities of electricity delivered to the grid have to be equal to the amounts

purchased by the public supplier from each privileged producer.

The guaranteed purchase of electricity is applied for a fixed support period of 12 years.

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

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

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

Feed-in tariffs, as they are applied from 1 January 2014, are provided in *Table 1* herein below. Please note that the Governmental Decree on Incentive Measures for Privileged Electricity Producers provides the values of feed-in tariffs in EUR ct/kWh.

In cases where the correction coefficient is indicated, as provided in *Table 1* herein below, an individual feed-in tariff is being calculated for each privileged producer by deducting from a general feed-in tariff the amount of the respective coefficient multiplied by the installed capacity (P) of the power plant.

Table 1. Minimum price guarantees (feed-in tariffs applied from 1 January 2014)

RES technology	Installed capacity (P)	Feed-in tariff (EUR ct/kWh)
Hydropower (new power plants)	Up to 0.2 MW	12.40
	From 0.2 MW to 0.5 MW	13,727 – 6.633*P
	From 0.5 to 1 MW	10.41
	From 1 MW to 10 MW	10,747 – 0.337*P
	From 10 MW to 30 MW	7.38
Hydropower (power plants installed on the existing infrastructure)	Up to 30 MW	5.9

Biomass	Up to 1 MW	13.26
	From 1 to 10 MW	13.82 – 0.56*P
	Over 10 MW	8.22
Biogas	Up to 0.2 MW	15.66
	From 0.2 MW to 1 MW	16,498 – 4.188*P
	Over 1 MW	12.31
Biogas (from animal origin waste)	n/a	12.31
Gas from municipal waste and sewage gas	n/a	6.91
Wind power	n/a	9.20
Solar power (PVs installed on objects)	Up to 0.03 MW	20.66
	From 0.03 MW to 0.5 MW	20,941 – 9.383*P
Solar power (PVs installed on ground)	n/a	16.25
Geothermal	Up to 1 MW	9.67
	From 1 MW to 5 MW	10,358 – 0.688*P
	Over 5 MW	6.92

The feed-in tariffs are subject to regular annual correction due to inflation rates in the Euro zone, revised in February each year. However, in case the feed-in tariff is granted to a privileged producer and fixed in the power purchase agreement concluded with the public supplier, such a feed-in tariff is guaranteed (i.e., may not be changed) for the entire support period of 12 years.

The total maximum installed capacity of solar power plants supported in Serbia is limited to 10 MW for the entire territory of the country in the following quotas: (i) 2 MW for PVs installed on objects with individual capacity up to 30 kW; (ii) 2 MW for PVs installed on objects with individual capacity from 30 kW to 500 kW; and (iii) 6 MW for PVs installed on ground.

The maximum total installed capacity of wind power plants, for which the status of privileged producer may be acquired, is limited to 300 MW until the end of 2015 and to 500 MW until the end of the year 2020.

Privileged producers that use renewable energy sources together with fossil fuels have the right to receive the guaranteed price for the electricity produced from renewable energy sources if the biomass constitutes not less than 80% of the overall fuel mix for production of electricity, or if biogas, gas from municipal waste and/or sewage gas, or geothermal energy

constitutes not less than 90% of the overall fuel mix.

Each electricity producer, which does not qualify for the feed-in tariff, i.e., which does not fall within the above specified groups for incentivised generation of electricity, and therefore is not eligible for a purchase guarantee, may sell the electricity produced in its power plant on the electricity market under the terms and conditions stipulated in the Energy Law 2011 and its implementing legal acts regulating the organisation of the electricity market in Serbia.

Note: Feed-in tariffs are subjects of annual corrections related to the inflation in the euro zone.

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

Serbia became a Party to the United Nations Framework Convention on Climate Change (UNFCCC) on 10 June 2001. As a non-Annex I Party, Serbia has obligations to develop, update and submit National Communications and periodically report to the UNFCCC Secretariat, to cooperate on international level regarding climate research and systematic observations, transfer of knowledge and clean technologies, formulation and implementation of national adaptation

measures, education, public awareness and training in regard to climate change.

In order to fulfil these obligations, the Ministry of Energy, Development and Environmental Protection developed the *Initial National Communication of the Republic of Serbia to the United Nations Framework Convention on Climate Change* which was submitted to the UNFCCC Secretariat in November 2010.

Serbia is also a Party to the Kyoto Protocol since 17 January 2008. By ratifying the Kyoto Protocol as a non-Annex I Party, Serbia does not have quantified emission reduction targets, with regard to the UNFCCC. At the same time, by ratifying the Kyoto Protocol, Serbia gained the opportunity to, as a host country, take advantage of the Clean Development Mechanism (CDM).

To qualify as a host country, Serbia had to set up an institutional framework necessary for approval of CDM projects on the national level, meaning, the Designated National Authority (DNA). The DNA was established in November 2008. The DNA receives proposals from interested parties and issued letters of support and letters of approval as regards the compatibility of a project with the CDM. Participation in the DNA is voluntary.

Furthermore, harmonization of national legislation of Serbia with the EU acquis in the field of climate change implies transposition of the EU Climate and Energy Package, including the Directive on Emissions Trading (Directive 2003/87/EC, as amended by the Directive 2009/29/EC). Analysis of the legislative framework at stake and preparation of necessary legal and regulatory reforms in this regard are currently processed in a form of the EU financed project to be finalised in 2015.

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

Access to the grid is granted by the grid operator in charge under the terms and conditions of the applicable legislations, including the respective grid code approved by the AERS. Access to the grid must be granted on a non-discriminatory basis subject to technical possibilities in the grid.

Under the legislation currently in force, power plants using renewable energy sources are not given any priorities for connection to the grid. Costs for connection of the power plant to the electricity grid are borne by power plant operators.

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

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

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

Apart from the incentives referred to hereinabove, the Energy Law 2011 and the Governmental Decree on Incentive Measures for Privileged Electricity Producers, as adopted in 2013, do provide the following support measures:

- Taking balancing responsibility and balancing costs from privileged producers

during the incentive period by the public supplier.

- Free of charge monthly notification of a privileged producer and public supplier on the electricity generation in the facility of the privileged producer metered by the system operator in charge during the incentive period.
- The right of a privileged producer to conclude an agreement with the public supplier after the incentive period on the purchase of the total amount of produced electric power at conditions on the organised electric power market in Serbia

STATISTICS

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

The total net installed capacity of the power plants in Serbia at the beginning of 2013 amounted to 7,209 MW. Thermal power plants (TPP) and combined heat and power plants (CHP) held up to 59.5%, hydro power plants (HPP), including small HPPs, held up to 40.4%, whereas other power plants using renewable energy sources – up to 0.1% of the capacities.

Within the total net installed capacity, coal fired TPPs summed up to 3,936 MW and gas or fuel oil (mazoute) fired CHPs – 353 MW. Remaining capacities were covered by power plants using renewable energy sources, mainly – large HPPs, also including 44 MW of small HPPs, 2.4 MW of solar power plants, 2 MW biogas power plants and 0.5 MW of wind power plants connected to the distribution

grid. It has to be also noted that the electricity generation, distribution and supply company Public Enterprise “Elektroprivreda Srbije” operates a pump-storage HPP (PSHPP) with the capacity of 2x307 MW, which is used for system management and balancing.

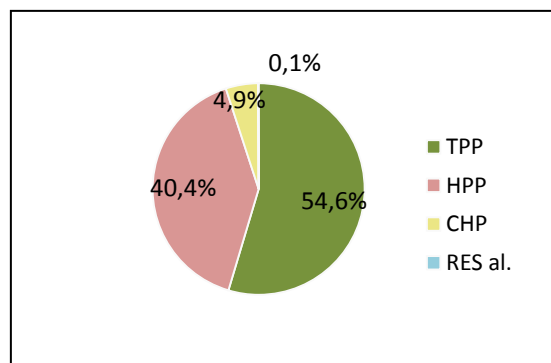


Fig. 1. Electricity generation capacities in Serbia (beginning of 2013)

In 2012, power plants in Serbia generated 34,546 GWh of electricity. Out of that number, TPPs fired by coal produced 70.3%, HPPs (including PSHPP) – 28.4%, CHPs – 1.1% and other plants, including small quantities produced by biogas, solar and wind power plants, 0.2% of electricity.

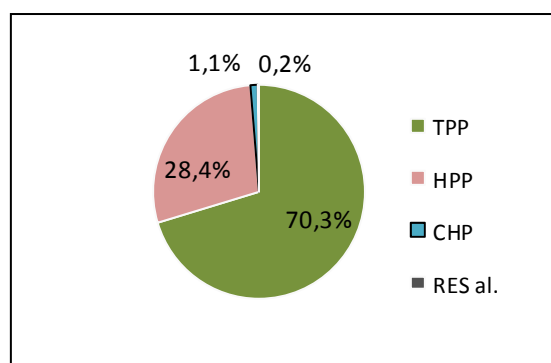


Fig. 2. Electricity generation structure in Serbia (2012)

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GENERAL

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

The energy mix of Slovakia has traditionally been dominated by conventional sources (in particular nuclear and thermal energy), the only renewable source of any importance being hydro power. Nevertheless, over the last few years renewable sources have been gradually gaining in importance. The development in this area comes to a large extent as a result of Slovakia's membership in the European Union (the "EU"), with the energy policies formulated by the EU institutions being transposed to the national level. The major impetus in this area was the legislation on the support of renewable sources of energy adopted in 2009. This legislation was to create stable and predictable business environment in the renewables market; however, since its adoption, it has been changed several times in order to rein in the vast increase of investments in the solar electricity sector. On the other hand, it seems that these adjustments were a necessary consequence of an overly generous initial level of feed-in tariffs for electricity generated in solar power plants.

The basic point of reference for the Slovak renewable energy policy is set by the

Renewable Energy Directive.¹ Anchored in the wider context of objectives of the EU energy policy, the Renewable Energy Directive provides, among other things, for mandatory national targets of energy from renewable sources to be met by each EU Member State by 2020. The mandatory target has been set at 14% for Slovakia, having regard to its starting point of 6.7% in 2005, available renewable energy potential and existing energy mix. Given that these targets are expressed as a share of renewables in gross final energy consumption (which includes the energy supplied for electricity generation, transport and heating and cooling), and as they take into account the effects of energy efficiency measures (if the overall energy consumption decreases, the share of renewables, even if constant in absolute terms, will rise), the Member States have considerable leeway in choosing the policy options to comply with them. In light of the current policy debate at the EU level, new EU policy initiatives will continue to significantly influence the energy policy in Slovakia.

In Slovakia, the policy approach to the transposition of the EU renewable energy objectives into the national context is to a large

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").

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 2010² implies that a major part of the increase in renewable energy will be due to the growing use of biomass, geothermal energy and solar energy in the production of heat (the share of renewable energy in the production of heat and cooling should almost double from 7.6% in 2010 to 14.6% in 2020). Electricity generation is predicted to see a smaller growth in the use of energy from renewable sources (the share should rise from 19.1% in 2010 to 24% in 2020).

As regards the particular sources of renewable energy,³ hydropower currently represents the only one contributing to electricity generation in a sizeable manner (approximately 15 to 20%, depending on annual precipitation). This contribution is mainly due to large hydropower plants where the potential for new projects is almost exhausted. As to the small hydropower plants (with installed capacity below 10 MW),

their technical potential is widely unused and their electricity generation capacity could, according to the forecasts of the National Action Plan for Renewable Energy, increase from 80 MW in 2010 to 182 MW in 2020.

Biomass represents a renewable source of energy with the highest technical potential, up to 18% of the Slovak energy consumption, with the main progress expected in the production of heat and to a lesser extent electricity generation. The current use of biomass in the production of heat is, nonetheless, rather low given, among other things, the high market penetration of natural gas distribution networks. Electricity generation through joint combustion of biomass and fossil fuels will likely play an important role in future. A major project in this area has been launched by the dominant electricity producer in one of its two large thermal power plants. An additional opportunity for electricity generation from biomass is represented by biogas plants. A few smaller plants have already been 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 almost 550 MW and it considerably exceeds the 300 MW target expected by the National Action Plan for Renewable Energy to be reached in 2020. The increase occurred despite a rather reserved approach to the electricity generation from solar energy due to concerns about the

² National Action Plan for Energy from Renewable Sources (Slovak Republic), issued by the Ministry of Economy of the Slovak Republic on 6 October 2010 (the “National Action Plan for Renewable Energy”).

³ Unless stated otherwise, the data cited below are from the Strategy on Energy Security of the Slovak Republic, approved by the Slovak Government on 15 October 2008, containing the most recent official assessment of the renewable energy potential in Slovakia.

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 led to a sequence of legislative and regulatory measures aimed at limiting the investment. These measures culminated in the abolishment of feed-in tariffs for solar projects (other than projects with the installed capacity below 30 kW located on the surface of buildings).

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 električná a prenosová sústava, a.s. (“SEPS”)) has suspended the issuance of consents to the connection of wind farms to the network. Following the considerable increase in the installed capacity of solar power plants (with wind and solar energy being regarded as carrying with them very similar risks), it is unlikely that wind energy projects could become of any importance in the foreseeable future.

Another renewable energy source with certain, if not large, potential is geothermal energy. It is currently used at a local level in several locations within Slovakia mainly for the production of heat. More intensive use of geothermal energy is constrained in particular by technical barriers.

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

Under the Renewable Energy Act⁴, 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 processing⁵;
- 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);

⁴ Act No. 309/2009 Coll. on the promotion of renewable energy sources and high-efficiency cogeneration, as amended by Act No. 492/2010 Coll., Act No. 558/2010 Coll., Act No. 117/2011 Coll., Act No. 136/2011 Coll., Act No. 189/2012 Coll., Act No. 373/2012 Coll., Act No. 30/2013 Coll., Act No. 218/2013 Coll., Act No. 382/2013 Coll., Act No. 321/2014 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.

- 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 Act⁶, the Energy Act⁷, and the price regulation decrees⁸ issued by the Regulatory Office for Network Industries (“RONI”) which regulate prices of electricity generated from renewable sources. While the Renewable Energy Act contains specific measures ensuring the promotion of electricity generated from renewable energy sources, the Network Industries Act contains the framework for the price regulation in the energy sector and the Energy Act regulates in particular the licensing procedure and approvals of investments in the energy sector.

⁶ Act No. 250/2012 Coll. on regulation in network industries, as amended by Act No. 435/2013 Coll. and Act No. 321/2014 Coll. (the “Network Industries Act”).

⁷ Act No. 251/2012 Coll. on energy, as amended by Act No. 391/2012 Coll., Act No. 352/2013 Coll., Act No. 382/2013 Coll., Act No. 102/2014 Coll. and Act No. 321/2014 Coll. (the “Energy Act”).

⁸ Decree of RONI No. 221/2013 Coll. establishing the price regulation in the electricity sector, as amended by Decree of RONI NO. 189/2014 Coll. (applicable for the first time to the price regulation proceedings for 2014) and Decree of RONI No. 225/2011 Coll. establishing the price regulation in the electricity sector, as amended by Decree of RONI No. 438/2011 Coll. and Decree of RONI No. 184/2012 Coll. (applicable for the first time to the price regulation proceedings for 2012 and replacing decree of RONI No. 2/2008 as amended by decrees Nos. 7/2008, 2/2009, 7/2009, 2/2010 and 7/2011).

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

The principal regulatory bodies in the renewable energy sector are the Ministry of Economy and RONI. Supervisory powers are exercised by the Slovak Commercial Inspection.

The Ministry of Economy bears the main responsibility for the formulation of renewable energy policy. It effectively regulates the construction of new renewable energy facilities through issuing certificates on the compliance of the investment plan of an energy generating facility with the long-term concept of the Slovak energy policy (the “Energy Policy”).⁹ Such compliance certificates are currently required for all power plants with the total installed capacity equal to or greater than 1 MW except for solar power plants where a compliance certificate is required already for power plants with the total installed capacity equal to or greater than 100 kW. The Ministry of Economy may also impose obligations in the general economic interest on electricity producers in order to ensure the use of renewable energy sources in the generation of electricity or on the distribution system operators and transmission system operator in order to ensure preferential access, connection, transmission, distribution and supply for electricity generated from renewable energy sources. However, such obligations have not been imposed to date. The licenses for generation of electricity in facilities with the total installed output of more than 1 MW are issued by RONI, including the licenses for generation of electricity from renewable energy sources if the output of these facilities exceeds the 1 MW threshold. Apart from that, RONI is also responsible for the price regulation of electricity generated from renewable sources and issues certificates of origin (evidencing that the electricity was generated in an installation eligible

⁹ The Energy Policy is approved by the Government of the Slovak Republic based on a proposal prepared by the Ministry of Economy.

for support measures) and guarantees of origin (evidencing the amount of electricity generated from renewable sources of energy). RONI's consent is further required before the Ministry of Economy issues a compliance certificate for a new power plant with an installed capacity exceeding 1 MW.

Although SEPS, the state-owned transmission system operator, does not, strictly speaking, exercise any regulatory powers, it exerts substantial influence over the renewable energy market. This is due to the fact that the consent of SEPS is required before the Ministry of Economy issues compliance certificates for new renewable energy projects, with SEPS assessing the impact of renewable energy projects on the security and reliability of the network.

The Slovak Innovation and Energy Agency ("SIEA") is an implementing agency of the Ministry of Economy for use of EU structural funds.

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

As mentioned above, the Ministry of Economy issues the compliance certificates for all power plants with the total installed capacity equal to or greater than 1 MW except for solar power plants where a compliance certificate is required already for power plants with the total installed capacity equal to or greater than 100 kW. In addition, the consents of SEPS and, for power plants with an installed capacity exceeding 1 MW, of RONI are required before the Ministry of Economy issues the compliance certificate, with SEPS assessing the impact of renewable energy projects on the security and reliability of the network. A compliance certificate is valid for three years and is required in the building proceedings in respect of the energy facility.

The construction of renewable energy project facilities requires permits issued in the building proceedings. These include zoning, building

and occupational permits. Depending on the nature of the renewable energy project, other specific permits (including the environmental impact assessment) may be required.

In addition, generation of electricity from renewable energy sources (if output of these facilities exceeds the 1 MW threshold) requires the license to be issued by RONI.

6. Is there a category of "license-exempt generation"? If so, does it cover some types of renewable energy based generation?

The compliance certificate of the Ministry of Economy is not required for power plants with a total installed capacity equal to or greater than 1 MW except for solar power plants where a compliance certificate is currently required for power plants with a total installed capacity equal to or greater than 100 kW. The electricity generation license issued by RONI is not required for generation of electricity from renewable energy sources if the installed capacity of the power plant does not exceed 1 MW.

Specific simplifications of the regulatory regime apply to electricity generation by households in facilities with an installed capacity below 10 kW, if the household does not apply for feed-in tariffs and its electricity generation does not exceed 150% of its annual electricity consumption.

INCENTIVES

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

No tax incentives are currently available. However, electricity generated from renewable energy sources supplied directly to end customers or used by the relevant electricity producer for its own consumption is exempted from excise duties.

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

Under the Renewable Energy Act, the electricity generated from renewable sources must be off-taken by the regional distributor to which the relevant electricity producer is connected. As such electricity will be used for the purposes of covering the losses in the distribution system, it will be purchased at the price for losses in the system which is regulated by RONI. This support measure applies to (i) facilities with the total installed capacity of up to 125 MW; and (ii) facilities producing electricity by high-efficiency cogeneration with the total installed capacity of up to 200 MW, provided the share of renewable energy sources in the fuel is higher than 30% or the share of gases emerging as side products of metallurgic production process in the fuel is higher than 40% (except in each case for facilities generating electricity from hydro energy with the installed capacity exceeding 5 MW). All facilities which qualify for this support will enjoy the right to the guaranteed off-take for 15 years from the time of their commissioning or the year of their reconstruction or upgrade. However, the Renewable Energy Act prescribes that the improvement in capacity, energy consumption, losses and costs must be proved by an expert opinion in order for the reconstruction or upgrade to obtain support for the 15-year period. Where the total installed capacity of energy facilities of an electricity producer is lower than 500 kW, the right to the guaranteed off-take will apply during the whole lifetime of the energy facility.

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

As long as the producer of electricity from renewable sources enjoys the right to the guaranteed off-take by the regional distributor,

the purchase price for such electricity supplied to the regional distributor will be determined as the regulated price for losses. This regulated price for losses is equal to the arithmetic average of the prices of electricity for purposes of covering the losses of all three regional distributors in Slovakia, determined by RONI on an annual basis for each of these regional distributors.¹⁰

In addition, the producer of electricity from renewable sources which is entitled to the guaranteed electricity off-take also qualifies, under conditions mentioned below, for an additional payment paid by the regional distributor. This additional payment is determined as the difference between the regulated tariffs for renewable electricity (applicable for the year when the renewable energy based power plant was commissioned) and the regulated price for losses. The right to such additional payment will apply with respect to the actual amount of electricity (subject to the limits mentioned below) produced from renewable energy sources even if the electricity producer does not make use of its right to the guaranteed off-take (for example, if it uses the electricity for its own consumption). The amount of such additional payment is gradually decreased if the investment costs of a reconstruction or upgrade of a facility do not exceed 50% of investment costs for new comparable technology (except for facilities generating electricity from hydro energy with an installed capacity up to 5 MW).

Under the Decree of RONI No. 225/2011 Coll. and the Decree of RONI No. 221/2013 Coll., the regulated tariffs for electricity from renewable sources are determined as follows:

¹⁰ This arithmetic average amounted to EUR 59.18/MWh in 2007, EUR 74.22/MWh in 2008, EUR 84.31/MWh in 2009, EUR 55.40/MWh in 2010, EUR 55.75/MWh in 2011, EUR 60.11/MWh in 2012, EUR 49.0547/MWh in 2013, EUR 46.8125/MWh in 2014 and EUR 44.0150/MWh in 2015.

A. Installations put into operation in 2010:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 1 MW	109.08
	from 1 MW up to and including 5 MW	97.98
	above 5 MW	61.72
Solar	up to and including 100 kW	430.72
	above 100 kW	425.12
Wind		80.91
Geothermal		195.84
Combustion of purpose grown biomass		113.10
Combustion of waste biomass		125.98
Co-combustion of biomass or waste together with fossil fuels		126.14
Combustion of landfill gas or gas from sewage treatment plants		96.36
Combustion of biogas produced by anaerobic fermentation technology	up to and including 1 MW	148.72
	above 1 MW	131.45
Combustion by thermochemical gasification in a gasifier		159.85

These tariffs will be further adjusted for facilities, which were commissioned, modernized or upgraded prior to 2010 by applying the relevant coefficient set out in the Decree of RONI No. 225/2011 Coll.

B. Installations put into operation from 1 January 2011 to 30 June 2011:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 1 MW	109.08
	from 1 MW up to and including 5 MW	97.98
	above 5 MW	61.72
Solar	up to and including 100 kW located on a building	387.65
	up to and including 100 kW not located on a building	387.65
	from 100 kW up to and including 1 MW	382.61
	from 1 MW up to and excluding 4 MW	382.61
	from 4 MW	382.61
Wind		80.91
Geothermal		195.84
Combustion of purpose grown biomass within the combined generation of electricity and heat		113.10
Combustion of waste biomass within the combined generation of electricity and heat		127.98
Co-combustion of biomass or waste together with fossil fuels within the combined generation of electricity and heat		126.14
Combustion of fermented biomass		144.88
Combustion of landfill gas or gas from sewage treatment plants		96.36
Combustion of biogas produced by anaerobic fermentation technology	up to and including 1 MW	148.72
	above 1 MW	132.45
Combustion by thermochemical gasification in a gasifier		159.85

C. Installations put into operation from 1 July 2011 to 31 December 2011:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 1 MW	109.08
	from 1 MW up to and including 5 MW	97.98
	above 5 MW	61.72
Solar	up to 100 kW located on the roof or walls of a building connected to the earth by firm basement	259.17
Wind		79.29
Geothermal		195.84
Combustion of purpose grown biomass within the combined generation of electricity and heat		112.24
Combustion of waste biomass within the combined generation of electricity and heat		122.64
Combustion of fermented biomass within the combined generation of electricity and heat		144.88
Combustion of bioliquids within the combined generation of electricity and heat		115.00
Co-combustion of biomass or waste together with fossil fuels within the combined generation of electricity and heat		123.27
Combustion of landfill gas or gas from sewage treatment plants		93.08
Combustion of biogas produced by anaerobic fermentation technology	up to and including 1 MW	145.00
	above 1 MW	129.44
Combustion by thermochemical gasification in a gasifier		159.85

D. Installations put into operation from 1 January 2012:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 1 MW	109.80
	from 1 MW up to and including 5 MW	97.98
	above 5 MW	61.72
Solar	up to 100 kW located on the roof or walls of a building connected to the earth by firm basement	194.54
Wind		79.29
Geothermal		190.51
Combustion or co-combustion of purpose grown biomass within the combined generation of electricity and heat		112.24
Combustion or co-combustion of waste biomass within the combined generation of electricity and heat		122.64
Combustion or co-combustion of fermented biomass within the combined generation of electricity and heat		144.88
Combustion or co-combustion of bioliquids within the combined generation of electricity and heat		115.01
Co-combustion of biomass or waste together with fossil fuels within the combined generation of electricity and heat (the combined generation is not required, if the share of biologically degradable waste in the communal waste is below 55%)		123.27
Combustion of landfill gas or gas from sewage treatment plants		93.08
Combustion of biogas produced by anaerobic fermentation technology	up to and including 1 MW	136.33
	above 1 MW	118.13
Combustion by thermochemical gasification in a gasifier		139.87

E. Installations put into operation from 1 July 2012 to 31 December 2012:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 1 MW	109.80
	from 1 MW up to and including 5 MW	97.98
	above 5 MW	61.72
Solar	up to 100 kW located on the roof or walls of a building connected to the earth by firm basement	119.11
Wind		79.29
Geothermal		190.51
Combustion or co-combustion of purpose grown biomass within the combined generation of electricity and heat		112.24
Combustion or co-combustion of waste biomass within the combined generation of electricity and heat		122.64
Combustion or co-combustion of corn straw		171.00
Combustion or co-combustion of bioliquids within the combined generation of electricity and heat		115.01
Co-combustion of biomass or waste together with fossil fuels within the combined generation of electricity and heat (the combined generation is not required, if the share of biologically degradable waste in the communal waste is below 55%)		123.27
Combustion of landfill gas or gas from sewage treatment plants		93.08
Combustion of biogas produced by anaerobic fermentation technology	up to and including 1 MW	136.33
	above 1 MW	118.13
Combustion by thermochemical gasification in a gasifier		149.87
Combustion by fermented mixture made of aerobic fermentation of biological decomposable waste		144.88

F. Installations put into operation from 1 January 2013:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 1 MW	109.80
	from 1 MW up to and including 5 MW	97.98
	above 5 MW (if the facility was put into operation until 28 February 2013)	61.72
Solar	up to 100 kW located on the roof or walls of a building connected to the earth by firm basement (in respect of facilities with a total installed capacity above 30 kW only if the facility was put into operation until 30 June 2013)	119.11
Wind		79.29
Geothermal		190.51
Combustion or co-combustion of purpose grown biomass within the combined generation of electricity and heat		112.24
Combustion or co-combustion of waste biomass within the combined generation of electricity and heat		122.64
Combustion or co-combustion of corn straw		154.27
Combustion or co-combustion of bioliquids within the combined generation of electricity and heat		115.01
Co-combustion of biomass or waste together with fossil fuels within the combined generation of electricity and heat (the combined generation is not required, if the share of biologically degradable waste in the communal waste is below 55%)		123.27
Combustion of landfill gas or gas from sewage treatment plants		84.89
Combustion of biogas produced by anaerobic fermentation technology	up to and including 1 MW	134.08
	above 1 MW	118.13
Combustion by thermochemical gasification in a gasifier		149.87
Combustion by fermented mixture made of aerobic fermentation of biological decomposable waste		144.88

G. Installations put into operation from 1 January 2014:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 100 kW	111.27
	above 100 kW up to and including 200 kW	109.17
	above 200 kW up to and including 500 kW	106.84
	above 500 kW up to and including 1 MW	105.15
	above 1 MW up to and including 5 MW	97.98
Solar	up to 30 kW located on the roof or walls of a building connected to the earth by firm basement	98.94
Wind		70.30
Geothermal		155.13
Combustion or co-combustion of purpose grown biomass (except for corn straw) within the combined generation of electricity and heat		92.09
Combustion or co-combustion of other waste biomass (except for corn straw) within the combined generation of electricity and heat		100.63
Combustion or co-combustion of corn straw within the combined generation of electricity and heat		126.10
Combustion or co-combustion of bioliquids within the combined generation of electricity and heat		94.36
Co-combustion of biologically degradable waste in the communal waste together with fossil fuels within the combined generation of electricity and heat (the combined generation is not required, if the share of biologically degradable waste in the communal waste is below 55%)		100.49
Combustion of landfill gas or gas from sewage treatment plants		70.34
Combustion of biomethane produced by anaerobic fermentation technology	up to and including 1 MW	107.53
Combustion of biogas produced by anaerobic fermentation technology	up to and including 250 kW	125.29
	above 250 kW up to and including 500 kW	119.41
	above 500 kW up to and including 750 kW	110.62
	above 750 kW	107.26
Combustion by thermochemical gasification in a gasifier		122.62
Combustion by fermented mixture made of aerobic fermentation of biological decomposable waste		118.88

H. Installations put into operation from 1 January 2015:

Renewable energy source	Total installed capacity	Regulated tariff (EUR/MWh)
Water	up to and including 100 kW	111.27
	above 100 kW up to and including 200 kW	109.17
	above 200 kW up to and including 500 kW	106.84
	above 500 kW up to and including 1 MW	105.15
	above 1 MW up to and including 5 MW	97.98
Solar	up to 30 kW located on the roof or walls of a building connected to the earth by firm basement	88.89
Wind		62.49
Geothermal		153.13
Combustion or co-combustion of purpose grown biomass (except for corn straw) within the combined generation of electricity and heat		92.09
Combustion or co-combustion of other waste biomass (except for corn straw) within the combined generation of electricity and heat		96.90
Combustion or co-combustion of corn straw within the combined generation of electricity and heat		107.21
Combustion or co-combustion of bioliquids within the combined generation of electricity and heat		91.79
Co-combustion of biologically degradable waste in the communal waste together with fossil fuels within the combined generation of electricity and heat (the combined generation is not required, if the share of biologically degradable waste in the communal waste is below 55%)		100.49
Combustion of landfill gas or gas from sewage treatment plants		70.34
Combustion of biomethane produced by anaerobic fermentation technology	up to and including 1 MW	107.53
Combustion of biogas produced by anaerobic fermentation technology	up to and including 250 kW	120.49
	above 250 kW up to and including 500 kW	110.00
	above 500 kW up to and including 750 kW	102.95
	above 750 kW	100.23
Combustion by thermochemical gasification in a gasifier		99.21
Combustion by fermented mixture made of aerobic fermentation of biological decomposable waste		95.50

If the construction of a new facility or the reconstruction or upgrade of an existing facility was supported from schemes financed from the state budget, the right to the guaranteed off-take (or the claim for additional payment) is not given, unless such support (i) is used to carry out measures aimed at achieving compliance with the applicable emission limits; or (ii) is provided in the form of investment aid under a special regulation.¹¹

In order to ensure a stable and predictable environment for investments into renewable energy, the Renewable Energy Act provides that RONI may not set the regulated tariffs applicable in the subsequent period, which may not exceed three years, at a level lower than 70% of the regulated tariffs applicable in a given year. However, such limitation does not apply to solar and wind power plants.

The Renewable Energy Act provides for limits on the amount of electricity with respect to which the electricity producer may claim the additional payment from the regional distributor. Under these limits, the right to an additional payment applies only to:

- all electricity from renewable energy sources produced in a facility of an electricity producer with a total installed capacity of up to and including 5 MW;
 - electricity corresponding to the proportionate amount of electricity produced in a facility of an electricity producer with the total installed capacity of more than 5 MW, with the proportion being calculated as the ratio of 5 MW to a total installed capacity;
 - the total amount of electricity produced in a facility of an electricity producer, which uses wind energy as a source, with a total installed capacity of up to and including 15 MW;
 - electricity corresponding to the proportionate amount of electricity produced in a facility of an electricity producer, which uses wind energy as a source, with a total installed capacity of more than 15 MW, with the proportion being calculated as the ratio of 15 MW to a total installed capacity;
- all electricity from renewable energy sources produced by cogeneration with a total installed capacity of more than 5 MW, if the share of renewable energy sources in fuel is higher than 20% and the share of heat supplied for technological purposes does not exceed 40% of useful heat;
 - all electricity from renewable energy sources produced in an installation for cogeneration with a total installed capacity of more than 10 MW, if the share of renewable energy sources in fuel is higher than 30% and the share of heat supplied for technological purposes does not exceed 40% of useful heat (this category of producers may apply for the right to the additional payment until 31 December 2014);
 - all electricity from renewable energy sources produced in an installation for cogeneration with a total installed capacity of more than 5 MW, if the share of renewable energy sources in fuel is higher than 30% and the share of heat supplied for technological purposes does not exceed 40% of useful heat (this category of producers may apply for the right to the additional payment from 1 January 2015 until 31 December 2018);

A further restriction applies with regard to the electricity produced from biomass. In such case, the electricity producer with a new facility will be able to claim the additional payment only up to and including the amount of electricity from biomass of 40 GWh. Certain further restrictions apply also to the generation of electricity from bioliquid and biogas.

¹¹ Act No. 561/2007 Coll. on investment aid, as amended.

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

Yes. Slovakia ratified the Kyoto Protocol¹² in 2002, and entered into force in Slovakia on 16 February 2005.

In accordance with Act No. 414/2012 Coll. on Trading with Emission Allowances (which repealed and replaced the previous Emission Allowances Act No. 572/2004 Coll., with effect as of 1 January 2013) and Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, the Ministry of Environment of the Slovak Republic issued a national allocation table for a transitional period from 2013 to 2020 during which the free allocation of greenhouse gas emission allowances (whether in full or in part) is only be available to eligible installations and such allocations are to be decreased each year with a view to reaching 30% of the 2012 allocation by 2020 and the elimination of the free allocation of greenhouse gas emission allowances by 2027. Required allowances not allocated free of charge must be purchased (auctioned).

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

Yes, renewable energy based power plants enjoy priority connection to the regional distribution system, priority electricity transmission, priority electricity distribution and priority electricity supply regardless of their installed capacity. In order for eligible renewable energy power plants to be eligible, they must fully comply with the technical and commercial requirements of the distribution system operator and may not endanger the security and reliability of the system operation.

¹² The Kyoto Protocol was published under the Announcement of the Ministry of Foreign Affairs of the Slovak Republic No. 139/2005 Coll.

Renewable energy based power plants will be connected to the distribution system if (i) the distribution system is technically capable of such connection; (ii) it is the closest one to the power plant; and (iii) from a technical and economic point of view there is no other distribution system with better conditions for connection. The distribution system is considered technically capable of a connection also where the electricity off-take by the regional distributor requires extension of the distribution system, provided that such extension is economically justifiable.

12. 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.

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

Renewable energy based power plants with a total installed capacity of less than 1 MW are also supported by way of assumption of the responsibility for imbalances caused by the electricity producer (as of 1 July 2013 solar power plants have the benefit of this support measure only if their installed capacity is less than 30 kW, before 1 July 2013, this threshold was 100 kW).¹³ Under the Renewable Energy Act, the responsibility for imbalances will be taken over by the relevant regional distributor. This supportive measure applies for a period of 15 years from commissioning, reconstruction or upgrade of the energy facility or for the whole lifetime of the energy facility, should the total installed capacity of the energy facility be lower than 500 kW. This support measure is of particular importance for producers of electricity from unpredictable (solar and wind) renewable energy sources.

¹³ If the permit for operation of the power plant was issued before 1 July 2011, this support measure applies if the total installed capacity is less than 4 MW.

In addition, renewable energy generating companies may benefit from EU structural funds which are expected to represent a major factor contributing to the development of renewable energy in future. The EU structural funds are channeled through several schemes defined at the national level, the most important one for the period between 2007 and 2013 being the Operational Program Competitiveness and Economic Growth managed by the Ministry of Economy.¹⁴ Under this program, the support can be provided to projects involving the construction, upgrade and reconstruction of small water power plants with a maximum installed capacity up to 10 MW, power plants using biomass or biogas with a minimum installed capacity of 50 kW and a maximum installed capacity of 30 MW, and power plants using solar energy or geothermal energy. The support is provided through SIEA and, subject to location, can represent 40% or 50% of the eligible costs.

Depending on the applicable state aid scheme, the support can be in the range from EUR 100,000 to EUR 6 million or from EUR 20,000 to EUR 200,000, respectively. As this program was open for the new applicants only until the end of the year 2013, the funds under this program are still being distributed among those who applied for them before the end of 2013. This distribution of the funds shall last until 2015. However, as of 2014 new applicants are not eligible to draw funds under this program.

¹⁴ The total funds available under the Operational Program Competitiveness and Economic Growth for projects increasing the energy efficiency and renewable energy projects in the period between 2007 and 2013 amount to approximately EUR 144 million.

STATISTICS

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

	Gross Electricity Production in 2013 (in GWh)	% of Gross Electricity Production in 2013
Total	28,191	100
Renewable Energy Sources	6,671	23,66
Hydro All Plants	5,166	18,32
of which: hydro 1 MW (net of pumping)	39	0,14
hydro 1-10 MW (net of pumping)	98	0,38
hydro 10+ MW (net of pumping)	4,711	16,71
pumped storage ¹⁵	318	1,13
Geothermal	x	x
Solar (Photovoltaic)	588	2,09
Wind	6	0,02
Municipal Solid Wastes (Renew)	21	0,074
Wood/Wood Wastes/Other Solid Wastes	677	2,40
Biogases	213	0,76

Source: The data on gross electricity production in GWh are cited according to the publication Energy 2013, published by the Statistical Office of the Slovak Republic in December 2014.

¹⁵ Under the Renewable Energy Act, electricity produced in pumped storage hydropower plants is not counted towards electricity produced from renewable energy sources.

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TURKEY



**Dr. Çağdaş Evrim
Ergün**



Nigar Gökmen

ÇAKMAK AVUKATLIK BÜROSU

GENERAL

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

Turkey has a large potential for renewable energy and the promotion of renewable energy resources in electricity generation 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.

In accordance with Turkish legislation, generation activities based on renewable resources require generation license to be received from the Energy Market Regulatory Authority (“EMRA”) except for generation activities within certain limits as explained in answer 6 below (license exemptions).

As of June 2015, there are 246 generation licenses for wind, 932 generation licenses for hydropower, 27 generation licenses for geothermal and 52 generation licenses for biomass power projects in Turkey. There are also 7 wind power and 67 hydropower license applications currently pending before EMRA.

As of May 2015, there are 8566 applications for license-exempt electricity generation and 3919 of these applications have been accepted by the relevant distribution companies and 2214 applications are still pending. The total installed capacity of the accepted applications is 2.383.728 kW.

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

Renewable energy resources covered by Renewable Energy Law No. 5346¹ (the “Renewable Energy Law”) are wind, solar, geothermal, biomass, biogas (including landfill gas), wave, stream, tidal, river and arc type hydroelectric generation facilities, and hydroelectric generation facilities with a reservoir area of less than 15 square kilometers.

¹ Published in the Official Gazette No. 25819 dated 18 May 2005.

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 Regulation on Documentation and Encouragement of Renewable Energy Resources² provides details regarding the implementation of the Renewable Energy Law.

Although geothermal energy is covered by and thus subject to the Renewable Energy Law, there is also a separate law specific to geothermal energy, namely the Geothermal Energy and Natural Minerals Law No. 5686.³

The Electricity Market Law No. 6446⁴ (the “EML”) also includes several provisions which are generally or specifically applicable to renewable energy sources.

The Electricity Market Licensing Regulation⁵ also sets forth a number of provisions aimed at promoting the utilization of renewable energy resources in the generation of electrical energy as explained below.

There are also several regulations specific to application process of generation activities based on solar and wind power.

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

EMRA is the competent administrative authority responsible for the regulation and supervision of the electricity market. EMRA is authorized to take the necessary measures to promote the utilization of renewable energy resources.

The Ministry of Energy and Natural Resources also has certain authorities in the renewable energy sector, in particular, concerning the long-term strategy and planning of the sector.

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

The required permits and licenses for a renewable energy project differ in accordance with the stage of the relevant project. At the Pre-Construction and Construction Stages the following main permits are required for a renewable energy project:

Generation License: In accordance with the EML and the Electricity Market Licensing Regulation, a license must be obtained from EMRA to operate in the electricity market except for renewable energy power plants with an installed capacity up to 1 MW and the renewable energy power plants generating electricity for their own needs.

EIA Affirmative Approval or EIA is not Required Decision: Pursuant to the Environmental Impact Assessment Regulation⁶, certain facilities are subject to EIA Affirmative Approval. Certain other facilities are subject to selection-election criteria, meaning that, upon the examination of the EIA Report,

² Published in the Official Gazette No. 28782 dated 10 October 2013.

³ Published in the Official Gazette No. 26551 dated 13 June 2007.

⁴ Published in the Official Gazette No. 28603 dated 30 March 2013.

⁵ Published in the Official Gazette No. 28809 dated 2 November 2013.

⁶ Published in the Official Gazette No. 28784 dated 3 October 2013.

an “EIA Is Not Required Decision” or “EIA Required Decision” is issued. If an “EIA Required Decision” is issued, then “EIA Affirmative Approval” needs to be obtained. Pursuant to the Electricity Market Licensing Regulation, EIA Affirmative Approval or EIA Is Not Required Decision must be received for the projects require a generation license during the preliminary license period, which is a maximum of 24 months. In addition, EIA Affirmative Approval or EIA Is Not Required Decision is required as a pre-condition to receive a construction license. The renewable energy power plants with an installed capacity up to 1 MW are not subject to EIA Affirmative Approval or EIA is not Required Decision.

Construction license (or exemption letter): In accordance with the Construction Law⁷, a construction license must be obtained by the owner of a building. Any modification and alterations made in the existing buildings are subject to a new construction license to be issued for such modifications or alterations.

The Construction Law and the secondary legislation issued thereunder provide exemptions from the construction license requirement for energy related facilities, energy transportation lines and their auxiliary buildings and structures to be established or caused to be established by public entities. In such a case it would be sufficient for the relevant public entity to notify the relevant administrative authority of the commencement of the construction.

Preparation and approval of geotechnical and geological reports: In accordance with the Planned Areas Zoning Regulation⁸, the Ministry of

Environment and Urban Planning and/or authorized engineering firms are authorized to prepare the geotechnical and geological reports prepared for projects requiring construction. Geotechnical and geological reports are important tools for the determination of statics of the constructions. All geotechnical and geological reports are approved by the General Directorate of Disaster Affairs or the relevant governorship depending on their technical qualification.

Approvals of the master plan, local master plan, parcellation plan: Pursuant to the Construction Law, if the population is over 10,000 there must be a master plan whereas in places where the population is less than 10,000 a master plan is required only if the municipal council renders a decision in this regard.

Agreement with the construction supervision company: Pursuant to the Construction Supervision Law, construction owners must execute an agreement with construction supervision companies that will ensure that the construction itself and the materials used therein will be in accordance with the technical standards, specifications and the relevant legislation. The Construction Supervision Law applies to all constructions within and outside of municipality and neighboring zones, except for facilities specified in the Construction Law (public buildings and buildings that are exempt from construction license requirement) as well as isolated buildings not exceeding 200 m² with two floors except the basement in a single parcel of land.

This requirement would not be applicable for the projects which are exempt from the construction license.

⁷ Published in the Official Gazette No. 18749 dated 9 May 1985.

⁸ Published in the Official Gazette No. 18916 dated 2 November 1985.

In the Operation Stage, the following main permits are required:

Environmental permit or temporary activity certificate until the environmental permit is issued (concerning aerodynamic noise for wind projects): Pursuant to the Environmental Permits and Licenses Regulation⁹, facilities causing environmental pollution must receive an environmental permit or temporary activity certificate until the environmental permit is issued. This certificate is issued to cover the air emissions, wastewater discharge, noise control and deep sea discharge related issues.

Work place opening and operating permit: Pursuant to the Regulation Regarding Workplace Opening and Operation Permits¹⁰, work places cannot begin their activities without obtaining work place opening and operating permit from the administrations.

Building use permit: In accordance with the Construction Law, a building use permit must be obtained by a project company from the relevant municipality after completion of the facilities.

This requirement would not be applicable for the projects which are exempt from the construction license.

Security report to prevent major accidents: Pursuant to the Health and Safety Law¹¹, workplaces carrying out industrial activities that may cause major accidents must prepare a security report including the precautions to be taken to prevent any major accident.

Environmental management unit establishment or execution of environmental consultancy agreement: Pursuant to the Environmental Auditing Regulation¹², facilities that may cause environmental pollution must establish an environmental management unit or execute an environmental consultancy agreement.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

In Turkey, legal basis for license-exempt generation activities was set forth in 2007 but its implementation started to increase in 2013.

The types of generation facilities which are exempt from the requirement to obtain a license from EMRA are listed under Article 14 of the EML. Among such exemptions, the most important one is “generation facilities based on renewable energy resources with maximum 1 MW installed capacity”. This 1 MW installed capacity ceiling limit can be increased up to 5 MW by the Council of Ministers. However, currently there is no decision rendered by the Council of Ministers with respect to increasing such limit.

The requirements and process of license-exempt electricity generation are regulated under the Electricity Market License-Exempt Electricity Generation Regulation¹³ and Communiqué Concerning the Implementation of Electricity Market License-Exempt Electricity Generation Regulation.

⁹ Published in the Official Gazette No. 27214 dated 29 April 2009.

¹⁰ Published in the Official Gazette No. 25902 dated 10 August 2005.

¹¹ Published in the Official Gazette No. 28339 dated 30 June 2012.

¹² Published in the Official Gazette No. 27061 dated 21 November 2008.

¹³ Both the Regulation and Communiqué are published in the Official Gazette No. 28783 dated 2 October 2013.

INCENTIVES

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

In accordance with Article 25 of the EML, the documents and transactions which are related to agreements on water usage and operation principles and do not require joint facility investment amount repayment and that are executed after 26 June 2003 by State Hydraulic Works, shall be exempt from stamp tax and duties.

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

The Renewable Energy Law provides a purchase guarantee for electricity generated by renewable energy companies. It provides that electricity suppliers (supplying electricity to end users) are required to purchase a certain percentage of the amount of electricity that they sold in the previous year from renewable energy companies participating in the Renewable Energies Support Mechanism (YEKDEM). Such purchase guarantee is applicable for the first 10 years of operation of renewable energy companies.

Before the amendment made to the Renewable Energy Law by Law No. 6094, which entered into force on 8 January 2011 (the “2011 Amendment”), bilateral energy purchase agreements were required to be signed in order to perform the purchase obligation. The 2011 Amendment, however, set forth a new method for the performance of the purchase obligation of the suppliers. Accordingly, the purchase obligation will be performed through a program, in which all suppliers subject to purchase obligation and all renewable energy companies that prefer to participate in YEKDEM will participate, rather than executing separate bilateral agreements for

each sale transaction between each supplier and each renewable energy company.

The Market Financial Settlement Centre (“MFSC”) determines (i) the total generation by each power plant included in this program for each invoice period, and (ii) the price to be paid for each power plant. The sum of the prices determined for each power plant is determined and announced for each respective invoice period.

The purchase obligation ratio of each supplier is determined by MFSC by determining the ratio of the amount of energy supplied to the final consumers by each of the suppliers for the same invoicing period to the total amount of energy supplied to all of the final consumers in Turkey. Then the amount corresponding to the share of each supplier is calculated by multiplying the purchase obligation ratio of each supplier with the total price to be paid to the renewable energy companies and notified to the parties and invoiced to the related supplier by MFSC. Renewable energy companies are eligible to participate in this program on an annual basis at the beginning of each calendar year; and they cannot leave the program during that year. Those companies that do not wish to participate in the program can sell electricity on the open market and can sign bilateral energy sale/purchase agreements. In such cases, however, they would not be entitled to benefit from the purchase and price guarantee incentives of the Renewable Energy Law. In addition, the excess electricity generated by “generation facilities based on renewable energy resources with maximum 1 MW installed capacity” explained in Answer 6 above shall be purchased by the authorized retail sale company based on the price guarantee regulated under the Renewable Energy Law for 10 years as of the first electricity supply of the generation facility.

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

The Renewable Energy Law provides a minimum price guarantee for the electricity generated by renewable energy companies as follows:

	First 10 years of operation (US dollar cents/KWh)
Hydropower	7.3
Wind	7.3
Geothermal	10.5
Solar	13.3
Biomass (including landfill gas)	13.3

The Council of Ministers is authorized to determine the fixed guaranteed prices and the terms applicable for the renewable energy types that are not included in the table above.

The above figures are envisaged to apply only to power plants that will be commissioned on or before 31 December 2020. The fixed guaranteed prices and the terms applicable for the power plants to be commissioned after 31 December 2020 shall be regulated by Council of Ministers' Decrees, but such prices shall not exceed the above-stated prices.

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

Turkey entered into the Framework Convention in 2004 and became a party to the Kyoto Protocol on 5 February 2009 with certain caveats. The Protocol was ratified on 16 February 2009 and entered into force on 17 February 2009.

Turkey is among the Annex-I countries under the Protocol; however it is not included in Annex B, which sets forth the liabilities of the Annex-I countries. As a result, Turkey did not have any liability regarding the reduction of emission levels for the first liability period which ended at the end of 2012 and does not have any liability regarding the reduction of emission levels for the second liability period which will last until 2020. However, it is subject to the common liabilities set forth in Article 10 of the Protocol applicable for all contracting parties, such as the preparation of annual inventories, and publication of national communications every four years and reports every two years.

The Ministry of Environment and Urban Planning prepared a Communiqué on Voluntary Carbon Market Project Registration¹⁴ to fulfil such liabilities. Accordingly, the owners of projects developed to receive a carbon certificate register with the Ministry and these projects must be approved by independent auditing institutions accredited by the Kyoto Protocol.

After the conference held in Doha in November 2012, the objectives for the second liability period, which will last until 2020, were determined. An agreement to determine the obligations and rights under the Kyoto Protocol with respect to the countries is planned for execution by 2020.

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

Article 14 of the Electricity Market Licensing Regulation provides that the TEİAŞ and/or the legal entities holding a distribution license shall give priority to the facilities generating

¹⁴ Published in the Official Gazette No. 28790 dated 9 October 2013.

electricity from renewable energy resources in terms of their connection to the transmission and/or distribution systems.

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

The Renewable Energy Law provides a domestic production incentive for projects commissioned by 31 December 2015 (extended until 31 December 2020 by Council of Ministers) that use mechanical and/or electromechanical components produced in Turkey. The level of additional incentives will depend on the share of domestically produced components used in the plant. The additional incentives will be available for 5 years from the date of commencement of commercial operation of the plant. Annexed to the Renewable Energy Law, there is a chart stating, in detail, the incentive level for each type of component.

The Council of Ministers is authorized to determine the domestic production incentives available for renewable energy producers to be commissioned after 31 December 2020. On 19 June 2011, the Ministry of Energy and Natural Resources issued a regulation regarding the procedures and principles to define the scope of domestic production, its standards, certification and related inspection procedures. Pursuant to an amendment to the Regulation in July 2012, at least 55% of the equipment must be domestically produced to benefit from this incentive. In 2013, 16 renewable energy projects have benefited from this incentive.

The license exempt electricity generation facilities based on renewable energy resources shall also benefit from this domestic production incentive for 5 years from the date of temporary acceptance of the facilities.

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

Article 20(6) of the Electricity Market Licensing Regulation provides that legal entities which apply to EMRA to obtain a license for generation of electricity from renewable energy resources are required to pay only 10% of the license acquisition fee and are exempted from the payment obligation of the remaining 90% of such fee. In addition, they are also exempted from the annual license fee payment obligation for a period of 8 years after the completion date of the construction of the facilities stated in their licenses.

Pursuant to the Renewable Energy Law, no service fee shall be collected from individuals or legal entities willing to construct generation facilities to meet their own energy needs from renewable energy resources, for the preparation of a final project, planning, master plans, initial examination and initial studies to be performed by the State Hydraulic Affairs General Directorate or the Electricity Affairs General Directorate. In addition, investments for energy generation facilities, procurement of electro-mechanic systems within the country, research, development and production investments concerning solar energy units, and research and development investments for biomass energy may benefit from these incentives if authorized by a Council of Ministers' Decree.

Pursuant to the Electricity Market Law, in the event that the forests and the lands under private ownership of the Treasury, or under the control or disposal of the State, are utilized for the generation of electricity from renewable energy resources, such lands shall be leased to, or the right-of-way or usufruct rights thereof, shall be granted to the relevant entities. An 85% discount shall be applied for the fees of such rights during the investment period and the first 10 years of the operation

period, provided that the power plant is commissioned by the end of 2020.

The Renewable Energy Law also provides the following incentives for renewable energy producers:

- Renewable energy producers are entitled to construct additional capacity on the condition that such additional capacity is constructed within the area specified in their licenses and that the power delivered to the transmission system does not exceed the installed capacity stated in their licenses;
- Priority shall be given to renewable energy projects when evaluating the connection requests of generation license applicants to the transmission system;
- Renewable energy projects can be developed in national parks, natural parks, natural protection zones, protected forests, natural sites, etc. on the condition of receiving affirmative opinion of the relevant Ministry or the relevant general directorate of protection, as the case may be;
- Pursuant to Supplementary Article 2 of Law No. 4706 Concerning the Immovable Properties of the Treasury, for the establishment of usufruct rights over the Treasury and State owned lands, the right

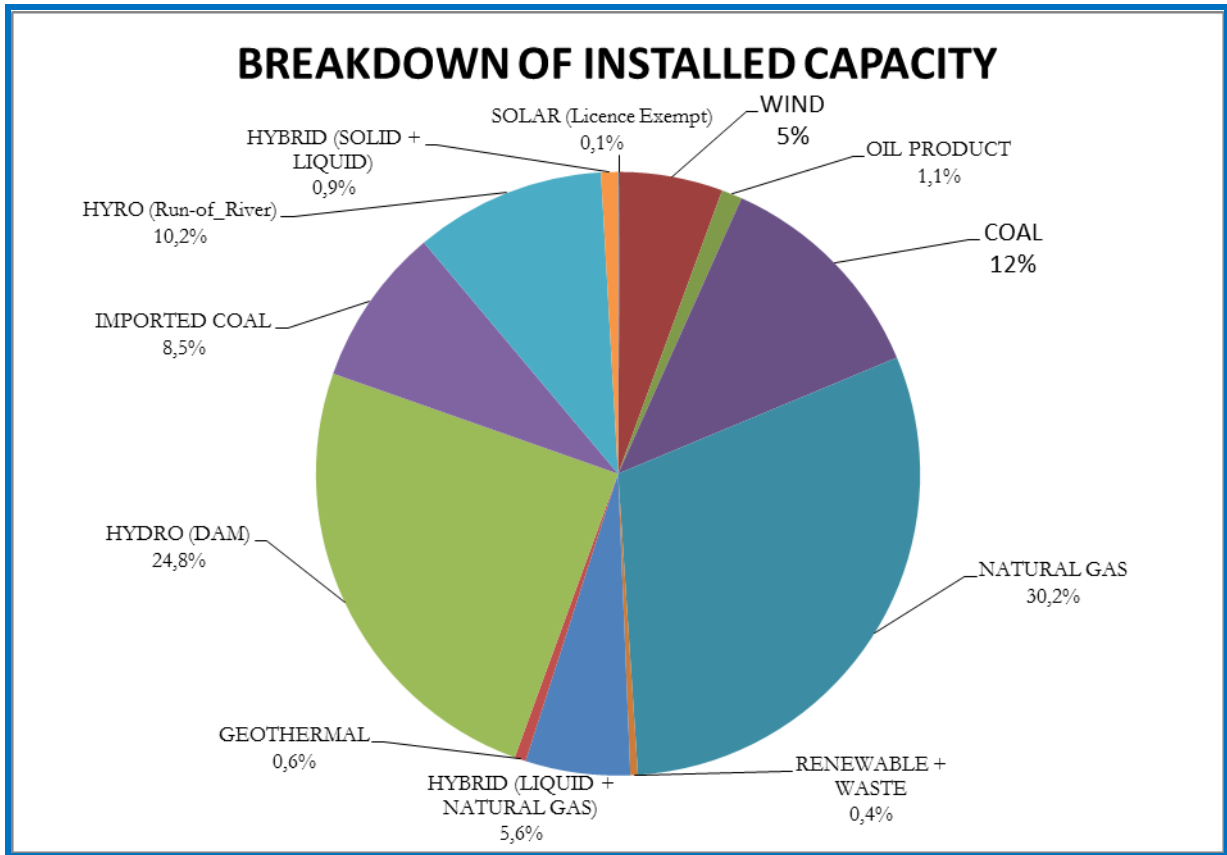
holder must pay 1% of its revenues to the Treasury in addition to the usufruct fee. The 2011 Amendment removes this 1% payment obligation for renewable energy producers;

- On 2 October 2013, EMRA has issued a regulation regarding the procedures for application, permitting, inspection, technical and financial matters for renewable energy ased generation facilities with a minimum established power of 1 MW and micro cogeneration facilities exempt from the obligation to obtain a license or establish a special purpose company. Individuals and legal entities generating electricity within the scope of this provision benefit from the above stated guaranteed prices for 10 years if they generate more than their needs and transmit such excess to the system.

STATISTICS

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

The installed capacity of Turkey as of May 2015 is 71.429,6 MW. The breakdown of such installed capacity is as follows (Source: TEİAŞ).



Electricity generation in Turkey was approximately 250.4 billion kWh in 2014 while electricity consumption was 255.5 billion kWh in the same year (Source: TEİAŞ).

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UNITED ARAB EMIRATES



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GENERAL

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

The focus on renewable energy in the UAE has been gaining momentum for the past few years and has become increasingly important politically and economically. The UAE has participated in some of the most significant renewable energy projects in the region and the world, for example, the world's largest single-unit concentrated solar power plant, Shams 1, which is situated in Abu Dhabi.

Abu Dhabi is the leading Emirate in the UAE participating in renewable energy projects and investment. The Abu Dhabi government formed the Abu Dhabi Future Energy Company (“ADFEC”, also branded as “Masdar”) by legislation in 2007 as a vehicle for implementing renewable energy policy.

ADFEC is mandated to develop and invest in projects in various sectors in accordance with its sustainability objectives, including renewable energy, carbon reduction and energy efficiency projects.

One of ADFEC's flagship projects is Masdar City, a USD 22 billion development aimed at being one of the most sustainable and carbon

neutral cities in the world. Masdar City will host the research and development activities of a number of international energy and materials companies (such as BASF, Siemens, GE and Schneider) as well as the headquarters of the International Renewable Energy Agency.

Increasingly, Dubai is also investing in renewables projects. The Dubai government is promoting investment pursuant to the “Dubai Integrated Energy Strategy 2030” aimed at increasing the role of renewable energy in the UAE's energy mix. In October 2013, Dubai successfully completed the first phase of a photovoltaic (PV) solar power project. The second phase of the project, scheduled for completion in 2017, will include a 200 MW expansion to the 13 MW already online. Recently, Dubai has begun the procurement process for the third phase of this project, consisting of an 800 MW expansion. This photovoltaic solar power project represents the first step in implementing the Dubai Integrated Energy Strategy 2030. This strategy will likely be supported by continuing support from the private sector.

The Dubai Electricity and Water Authority (DEWA) has also recently implemented a new initiative, known as “Shams Dubai”, which will allow placement of solar panels on rooftops. Residents who install solar rooftop systems will be allowed to feed excess solar power into

the grid and this will be offset against the amount of conventional energy purchased from DEWA. No direct subsidy has been announced to facilitate the initial solar uptake.

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

Despite significant political and economic support for renewable energy in the UAE and its Emirates, the relevant statutory regimes regulating the electricity industry gives very little attention to renewable energy and, as such, renewable energy is largely an undefined concept under UAE law.

REGULATION

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

There is no separate regulatory treatment for renewable energy in the body of UAE and Emiri laws regulating the electricity sector. As a consequence, there are no legislative regimes encouraging the development of renewable energy projects, such as feed-in-tariffs.

Instead, governments in the UAE implement renewable energy policy via government-owned utilities or, in the case of Abu Dhabi and Dubai, via ADFEC and DEWA, respectively.

It is anticipated that some Emirates will adopt laws giving specific treatment to renewable energy in the coming years.

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

There are no regulatory bodies that have been separately established in the UAE to independently regulate the renewable energy sector.

This means electricity generated using renewable sources falls within the regulatory scope of the relevant power and water authorities of each Emirate.

Abu Dhabi and Dubai have established regulatory bodies that function independently from the relevant authorities in connection with the electricity and water privatization schemes of those Emirates. Fujairah and Sharjah have established electricity authorities that perform a regulatory role. Regulation in the remaining Emirates in the UAE is supported by a federal regulator established by the UAE government.

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

There are currently no specific licenses or permits required for renewable energy projects in addition to those required for conventional power projects.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

The ability to grant a license for the generation of energy within the UAE lies with the relevant regulatory bodies associated with the power and water authorities of the given Emirate. Therefore, the ability to exempt a given entity from license requirements is granted to the relevant regulatory bodies. Currently, both the Abu Dhabi Regulatory and Supervision Bureau (ADRSB) and the Dubai Regulatory and Supervision Bureau (DRSB) have promulgated processes by which an entity may apply for a

license exemption. No such processes, however, explicitly define nor explicitly exempt renewable energy based generation.

INCENTIVES

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

The UAE is largely tax free and so there are no specific tax advantages for companies engaged in renewable energy generation.

However, project companies involved in key renewable energy projects in the UAE have been contractually entitled to exemption from paying duties and taxes on the importation of plant, equipment and materials for those renewable energy projects.

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

There is no legislative right to a purchase guarantee for electricity generated by renewable energy companies.

However, some of the renewable energy projects undertaken in the UAE have involved contractual rights for project companies that are comparable to a legislative purchase guarantee.

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

There is no legislative right to a minimum price guarantee for electricity generated by renewable energy companies.

However, a unique feature of key renewable energy projects planned and operating in Abu Dhabi is the Green Payment Agreement (“GPA”). Broadly, the GPA obliges the Abu Dhabi government to pay the project company additional amounts of the electricity tariff. This mechanic essentially operates as a private right to a long term feed-in-tariff.

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

The UAE ratified the Kyoto Protocol on 26 January 2005.

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

There is no legislative right to priority connection of renewable energy power projects to the electricity grid.

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

There is no legislative right to incentives for domestic manufacture of equipment or materials used to construct renewable energy power projects.

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

Power projects in the UAE typically involve a government-related entity as a sponsor and therefore tend to benefit from advantages that are not available on other infrastructure projects (such as government guarantees, priority access to land and streamlined permitting), although these advantages are equally applicable to fossil fuel power projects.

STATISTICS

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

There are no official statistics published for renewable generation capacity installed in the UAE. However, the two emirates of Abu Dhabi and Dubai have set the following non-binding targets:

- *Abu Dhabi*: target of 7% renewable energy generation capacity by 2020 (1,500 MW); and
- *Dubai*: target of 5% renewable energy generation capacity by 2030 (1,000 MW).

Renewable energy projects in the UAE use direct and indirect solar (photovoltaic and concentrated) and wind for electricity generation (although ADFEC has explored alternatives, such as geothermal energy). These projects represent a small percentage of the total installed capacity in the UAE.

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UNITED KINGDOM



Tallat Hussain¹



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GENERAL

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

The use and generation of renewable energy is essential to the UK's commitments to reduce carbon emissions, avert climate change and generally "green" the UK economy.

The UK aims to make the transition to a low carbon economy, while maintaining energy security and minimizing costs. By moving towards a more efficient, low carbon and sustainable economy, the UK is becoming less reliant on imported fossil fuels and will be less exposed to higher and more volatile energy prices in the future.² The challenge of shifting to a low-carbon, 'green economy' continues to require the adoption and implementation of comprehensive environmental objectives and effective policy measures supporting them. In the UK this includes:

- The Climate Change Act, which established a legally binding target to reduce the UK's greenhouse gas emissions by at least 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).³ The Act introduced a system of carbon budgets which provide legally binding limits on the amount of emissions that can be produced in successive five year periods. The UK continues to support the EU Emissions Trading System (EU ETS), and has approximately 1,000 EU ETS participants including RWE, Vattenfall, Enel, Drax Power and Endesa⁴. Phase III of the EU ETS runs from 2013 to 2020 and brings significant changes. It introduces an EU-wide cap on emissions, with the goal of reducing emissions in 2020 by at least 21% below their level in 2005.⁵ Auctioning, not free allocation, is now the default method for allocating allowances and in 2013 more than 40% of allowances were auctioned.⁶ However, the ETS faces the challenge of an increasing surplus of allowances, largely attributable to the economic crisis which has depressed emissions more than anticipated. Any

¹ The authors wish to thank Charlotte Jabbari, Trainee at White & Case LLP, London for her assistance.

² See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47614/3751-carbon-plan-executive-summary-dec-2011.pdf

³ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47614/3751-carbon-plan-executive-summary-dec-2011.pdf, page 3

⁴ See <https://www.gov.uk/government/publications/2010-to-2015-government-policy-greenhouse-gas-emissions/2010-to-2015-government-policy-greenhouse-gas-emissions>

⁵ See <http://www.carbontrust.com/media/84896/ctc734-cutting-carbon-in-europe-2020-plans.pdf>

⁶ See http://ec.europa.eu/clima/policies/ets/index_en.htm

surplus of allowances risks undermining the orderly functioning of the carbon market and, as a preventative measure, the European Commission decided in 2014 to postpone or ('back-load') the auctioning of 900 million allowances until 2019-2020. The back-loading only affects the distribution of auction volumes during Phase III, not the overall volume of allowances. Accordingly, the auction volume was reduced by 400 million in 2014 to reflect the implementation of the back-loading measure, and will be reduced by 300 million in 2015 and 200 million in 2016. Phase III also broadens the scheme to include more industrial sectors (e.g., aluminum production, bulk organic chemical processing and more greenhouse gases (nitrous oxide and perfluorocarbons). In addition, the monitoring and reporting requirements have been updated to include, *inter alia*, the need to undertake risk assessments and produce a monitoring plan.⁷ The updated monitoring and reporting requirements are set out in Commission Regulation (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions (as amended)⁸. To achieve the target of a 40% reduction in EU greenhouse gas emissions below 1990 levels by 2030, the EU cap will need to be lowered by 2.2% per year from 2021, compared with 1.74% currently⁹;

- 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). As of

December 2014, renewable energy sources accounted for 19.2% of total UK electricity generation, with wind and bioenergy the main contributors.

- A carbon price floor, which was implemented on 1 April 2013.¹⁰ It changes the previous Climate Change Levy (CCL) regime by applying carbon price support rates of CCL to gas, fuels and liquefied petroleum gas used in electricity generation;¹¹ The carbon price floor will be capped at £18 per tonne of carbon dioxide from 2016-17 to 2019-2020;¹²
- The UK Green Deal for domestic energy efficiency. In June 2014, the Green Deal Home Improvement Fund (GDHIF) was launched, enabling those who live in England & Wales and make energy-saving home improvements, to claim up to £1250 from the government towards the cost of installing any two measures from an approved list of eleven energy-saving measures. The GDHIF has proven very popular and has benefited more than 20,000 households¹³; and
- Government support for carbon capture and storage technology development. The UK Carbon Capture and Storage (CCS) Commercialisation Competition makes available £1 billion capital funding, together with additional operational funding through the UK Electricity Market Reforms, to support the construction and operation of the UK's first commercial scale CCS projects. In March 2013, the Department of Energy and Climate Change (DECC) announced that it would take two preferred

⁷ See http://ec.europa.eu/clima/policies/ets/monitoring/docs/gd1_guidance_installations_en.pdf

⁸ See <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02012R0601-20140730&from=EN>

⁹ See http://ec.europa.eu/clima/policies/ets/index_en.htm

¹⁰ See http://www.hm-treasury.gov.uk/d/carbon_price_floor.pdf

¹¹ See <https://www.gov.uk/climate-change-levy-application-rates-and-exemptions>

¹² See <https://www.gov.uk/government/publications/carbon-price-floor-reform>

¹³ See <https://www.gov.uk/government/news/green-deal-home-improvement-fund-details-announced>

bidders out of four to the planning and design stage. The Peterhead project in Aberdeenshire involves CCS at the existing gas-fired power station, to be transported and stored in a gas reservoir beneath the North Sea. It is the world's first planned CCS project on a gas power station. The White Rose project in Yorkshire uses CCS at a new oxyfuel coal-fired power station with potential to co-fire biomass, to be stored in a saline aquifer beneath the North Sea. The project involves Alstom, Power, BOC and National Grid. In July 2014 White Rose received a EUR 300million grant from the European Commission.¹⁴ In December 2014 it was announced that the Development Consent Order for the White Rose Project had been accepted for examination by the Planning Inspectorate. In June 2015 the Planning Inspectorate confirmed the dates for the next White Rose Development Consent hearing as 1 and 2 July 2015.

In addition, the UK has a 4 year (2011- 2015) £125 million government CCS research, development and innovation program.

On 28 November 2012, the UK became the first country in the world to create a bank dedicated to the green economy with the launch of the Green Investment Bank (GIB)¹⁵. With funding of £3.8 billion capital, the GIB aims to support green infrastructure and the financing of projects designed to meet the UK's legally binding targets laid out in the Kyoto Protocol, the Climate Change Act 2008 and the Energy Act 2013. Such targets include a reduction in greenhouse gas emissions of 34% by 2020¹⁶. The GIB is designed to be a catalyst to encourage private sector lenders and investors, by partnering with those already committed to the green economy and

providing additional capital.¹⁷ During 2014, the GIB committed £723 million to 22 energy projects across the UK. In March 2014, the GIB announced two equity investments in the UK offshore wind sector. The GIB committed £241 million, alongside Japan's Marubeni Corporation, to jointly purchase a 50% stake in a Yorkshire offshore wind farm. In the other, the bank acquired a 10% stake in a Welsh offshore windfarm. Currently in the late stages of construction, it will become the largest offshore wind farm in Europe.

In November 2014, the GIB announced further investments.

- £110million funding for the biggest waste wood renewable energy facility in the North West of England. Over its lifetime, the project is expected to save approximately 1.3m tonnes of greenhouse gas emissions and produce enough energy to power the equivalent of 35,000 homes.
- £240 million investment in the UK's offshore wind sector, buying a 20% stake in Sheringham Shoal operating offshore wind farm. The investment is part of a wider strategy, led by GIB, to strengthen the UK offshore wind sector by allowing developers to recycle capital into new projects and by attracting new investors into the sector.
- £236 million stake acquired in a joint venture with E.ON, in May 2015, to construct and own the Rampion offshore wind farm.

As of 31 March 2015, the GIB has backed 46 UK projects with a total value of almost

¹⁴ www.parliament.uk/briefing-papers

¹⁵ See <http://www.greeninvestmentbank.com/>

¹⁶ This target was set by the Committee on Climate Change in 2008

¹⁷ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/336552/green-investment-bank-annual-report-2013.pdf

£7billion¹⁸. In April 2015, the GIB announced that £463 million had been raised at first close of the world's first offshore wind fund, to be invested in operating offshore wind farms in the UK.

One of the most important pieces of reform in the UK energy market is the recent Electricity Market Reform (EMR). This was implemented through the Energy Act 2013¹⁹. The EMR is the transition from the current Renewables Obligation ("RO") regime, to Contracts for Difference ("CfDs"). These are long-term contracts which will be available to all low carbon generators and will replace the current main support mechanism for large-scale renewable electricity generation. CfD applicants were able to submit a CfD Application Form to the Delivery Body from 16 October 2014. The Delivery Body then determined which qualifying applications are successful applications. DECC published the outcome of the first CfD allocation round in February 2015. Those successful in the auction had a month to sign their CfD and proceed with their project.²⁰ The current RO regime will be closed to all new generation from 2017, with developers offered a choice between CfD and RO between 2014 and 2017.²¹ On 2 October 2014, the government confirmed that from 1 April 2015 the RO would be closed to solar projects above 5MW which are not commissioned and accredited on or before 31 March 2015, and to additional capacity added to accredited stations from that date, where the station would exceed 5MW. However, two 'grace periods' have been announced: (i) 'the significant financial

commitment' grace period which will allow solar projects larger than 5MW which satisfy certain 'significant financial commitment' tests as at May 2014 to remain eligible for accreditation under the RO for an additional 12 months; and (ii) the 'grid delay' grace period which will be available for large solar projects that were expected to deploy prior to the RO closure date, but were delayed.²²

Electricity generation that is accredited under the RO will continue to receive support until the scheme closes in 2037.²³

Promoting a diverse mix of renewable and low-carbon energy sources

Harnessing natural resources to reduce the UK's dependence on fossil fuels is considered essential to ensure greater security of energy supply and development of technology for a cleaner environment, as well as reducing greenhouse gas emissions. Potential resources include wind, biomass, biofuels and hydroelectric power.

The UK is the world leader for offshore wind power generation in terms of installed capacity. It currently has the largest offshore wind development pipeline up to 2020, including a project to develop the 4,000MW Hornsea offshore wind farm off the Yorkshire coast. The development includes three wind farms and up to 332 turbines and is expected to be operational by the year 2020, providing enough electricity to meet approximately 4% of the UK's electricity demand²⁴. The government is attempting to increase the amount of onshore wind power produced in order to make it a key

¹⁸ See <http://www.greeninvestmentbank.com/news-and-insight/2015/uk-green-investment-bank-announces-first-close-on-world-s-first-offshore-wind-fund/>

¹⁹ Royal Assent was granted in December 2013.

²⁰ See <https://www.gov.uk/government/collections/electricity-market-reform-contracts-for-difference>

²¹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/289076/Transition_and_Grace_Periods_Government_Response_-_12_Mar_2014.pdf

²² See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/371384/Annual_Update_Print.pdf

²³ See <https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/the-renewables-obligation-ro>

²⁴ See <http://infrastructure.planningportal.gov.uk/projects/yorkshire-and-the-humber/hornsea-offshore-wind-farm-zone-4-project-two/>

component of the UK's renewable energy mix by 2020.²⁵ Wind energy is currently the cheapest large-scale renewable energy source that can be deployed on a large scale.²⁶

In 2013, bioenergy accounted for 70.5% of renewable energy fuel use.²⁷ Of the bioenergy produced in the UK in 2013, 21.6% was generated from plant biomass, 15.2% from landfill gas and the remainder from wood, sewage gas, bioliquids, animal residues and other wastes. In 2014, generation from bioenergy sources was 24% higher than the previous year, partly due to the conversion of a unit at the Drax power station dedicated to biomass.²⁸ In the government response to the August 2013 follow-up RO consultation on biomass affordability, the government announced the introduction of a new dedicated biomass capacity cap (set at 400MW) on new-build dedicated biomass power generation. While biomass is expected to make a significant contribution to delivering the UK's 15% renewable energy target in 2020, the Government aims to ensure this cap will bring new biomass projects into existence that are both cost and carbon effective.²⁹

Approximately 1.8% of the UK's electricity is derived from hydroelectric power, most of which is in large-scale schemes in the Scottish Highlands. Whilst the potential for large-scale development (hydro plants producing more than 5MW) is limited because of environmental concerns and the reality that most economically

attractive sites for hydroelectric schemes have previously been utilised, the UK's remaining small-scale hydro resources (producing less than 5MW) are being exploited in a sustainable manner. It is estimated that a viable hydro potential of 850 to 1,550MW remains available, constituting approximately 1-2% of current UK generating capacity³⁰.

Renewable Energy Policy

Historically, the following major pieces of policy have determined the UK government's approach to renewable energy: the Stern Review on the Economics of Climate Change (2006), the Energy White Paper: meeting the energy challenge (2007), the Renewable Energy Strategy (2009), the UK Low Carbon Transition Plan White Paper (2009), and 'Smarter Grids: The Opportunity' (2009). Recently, the Electricity Market Reform: Contracts for Differences policy paper (2014), the Energy Security Strategy (2012) and the updated UK Renewables Energy Roadmap (2013) have outlined the UK's policy drivers. Climate Change Plans, such as Defra's Climate Change Plan 2010³¹ and the Department of Culture, Media & Sport (DCMS') Climate Change Plan 2010-2012³² set out the actions specific government departments are taking to reduce greenhouse gas emissions across their policy areas. Carbon budgets that place a restriction on the total amount of greenhouse gases the UK can emit over a 5-year period, providing benchmarks towards the UK's 2050 target, are a further measure the UK is taking to drive the UK's transition to a low-carbon economy. The Climate Change Act 2008 established the first four carbon budgets up to 2027. The first carbon budget for the 2008-2012 period required greenhouse gas emissions to be reduced

²⁵ See <https://www.gov.uk/onsshore-wind-part-of-the-uks-energy-mix>

²⁶ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42852/5936-renewables-obligation-consultation-the-government.pdf, page 46.

²⁷ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/279547/DUKES_2013_Chapter_6.pdf

²⁸ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/338750/DUKES_2014_printed.pdf

²⁹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/197993/consultation_notification_process_new_build_dedicated_biomass_projects.pdf

³⁰ See <https://www.gov.uk/barnessing-hydroelectric-power>

³¹ See <http://www.defra.gov.uk/publications/2011/03/26/climate-change-plan-2010-pb13358/>

³² See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/78335/DCMS_Climate_Change_Plan2010_12.pdf

by 23% as compared to 1990 levels by 2012. The UK is currently in the second carbon budget period (2013-2017) under which greenhouse gas emissions must be reduced by 29% as compared to 1990 baseline levels by 2017.

With the backdrop of the 2006 Stern Review on the Economics of Climate Change, in 2007 the UK government released its Energy White Paper on the UK's international strategy to tackle climate change and energy security together, so as to ensure secure and affordable energy supplies.

Following on from this, the Renewable Energy Strategy (2009)³³, which addresses the UK's obligations toward the EU's 20% renewables target by 2020, set a target of 15% of the UK's energy supply coming from renewable sources by 2020.

The Low Carbon Transition Plan commits the UK to greenhouse gas emission (GHG) cuts of 18% on 2008 levels by 2020 by, amongst other things, substantially increasing the requirement for electricity suppliers to sell renewable electricity.³⁴ The Transition Plan aims to ensure 40% of the UK's electricity and 10% of the UK's transport fuels comes from low carbon sources by 2020. The UK is said to be on track to meet this target: in 2014 renewables accounted for 19.2% of electricity generation, up from 14.9% in 2013.³⁵

In November 2013, the government updated the UK Renewable Energy Roadmap³⁶, which

analyses the progress which has been made in meeting the targets established under the EU Renewable Energy Directive³⁷ including the UK's 2020 renewable energy target. The Roadmap also provides an update on the deployment of renewables in the UK.

Alongside the Renewable Energy Roadmap, the EMR incorporates reforms to decarbonize electricity in the UK. The key elements of this market reform will be delivered through the following measures: (i) CfDs to drive investment in low carbon electricity generation; (ii) an Offtaker of Last Resort to ensure independent renewable generators have access to the market; (iii) Emissions Performance Standard to implement a regulatory backstop on the amount of carbon emissions that new fossil fuel power stations are allowed to emit; (iv) a pilot to incentivize Electricity Demand Reduction, to test the ability of energy efficiency reductions to compete with generation capacity in providing security of supply and (v) the Capacity Market.³⁸ The Capacity Market is designed to financially incentivise service providers to offer reliable clean energy supplies. It offers all capacity providers a steady, predictable revenue stream (capacity payments) on which they can base their future investments, in return for which they must deliver the capacity demands, or face penalties.³⁹

Important Legislation

Numerous pieces of legislation have come into effect over the past decade to support these policies.

The UK Climate Change Act 2008 mandates the Secretary of State to ensure that the net UK

³³ 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*.

³⁴ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228752/9780108508394.pdf

³⁵ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415998/renewables.pdf

³⁶ See <https://www.gov.uk/government/publications/uk-renewable-energy-roadmap-second-update>

³⁷ 2009/28/EC

³⁸ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/371384/Annual_Update_Print.pdf

³⁹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/267735/EMR_Update_on_Terms_for_the_Contract_for_Difference_v8.pdf

carbon emissions by 2050 are at least 80% lower than the 1990 baseline (for the period 2023–2027).⁴⁰ This act established the independent Commission on Climate Change and introduced legally binding ‘carbon budgets’ which restrict the total amount of greenhouse gasses the UK can emit over a 5-year period. The UK is the first country to set these legally binding budgets.⁴¹

The UK Energy Act 2008, which came into force in November 2008, implements the legislative aspects of the Energy White Paper and updates energy regulation to protect the environment, meet security of supply needs, and reflect on the availability of new technologies (such as emerging renewable technologies).⁴²

The Energy Act 2011, which received Royal Assent on 18 October 2011, establishes the framework to implement the Coalition government’s “Green Deal”⁴³ plan, and is a flagship initiative designed to improve the energy efficiency of properties in the UK. The Act also implements provisions for the Energy Companies Obligation (ECO), the government’s new domestic energy efficiency program, which replaces pre-existing Carbon Emission Reduction Target (CERT) and Community Energy Saving (CESP)⁴⁴ programs, both of which closed at the end of 2012.

The ECO provides a legal obligation on energy suppliers to improve the energy efficiency of

households via three distinct targets: (i) the Carbon Emissions Reduction Obligation; (ii) the Carbon Saving Community Obligation; and (iii) the Home Heating Cost Reduction Obligation. The Office of the Gas and Electricity Markets (Ofgem) (discussed further below) will administer the ECO for its duration. The first ECO period ran until 31 March 2015. The Electricity and Gas (ECO) (Amendment) (No. 2) Order 2014 which entered into force on 5 December 2014 provides for a new ECO obligation period from April 2015 to March 2017.⁴⁵

The Energy Act 2013 introduces an Emissions Performance Standard which provides a regulatory limit of 450 CO₂/kWh on the amount of carbon dioxide new fossil fuel power stations with a net capacity over 50MW are allowed to emit.⁴⁶ This is intended to prevent the construction of high emission coal power plants, but still allow gas plants, albeit that these may need to operate at a reduced capacity.

The UK RO regime, previously the main support for renewable power generation in the UK,⁴⁷ is being replaced by the EMR, as implemented by the Energy Act 2013.

Under the EMR, CfD’s are intended to encourage investment in low-carbon technologies by providing greater certainty of revenue, which will reduce risks to investors and make it easier and cheaper to secure finance.⁴⁸ Certainty is provided because key terms cannot be altered, even in the event that a future

⁴⁰ Section 1(1), Climate Change Act 2008, Ch. 27 Part 1.

⁴¹ See <https://www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050/supporting-pages/carbon-budgets>

⁴² See <http://www.legislation.gov.uk/ukpga/2008/32/contents>

⁴³ *This is a framework currently being established by the UK Government where companies can offer their customers improvements to their homes, communal areas and businesses at no initial cost, and then charge customers in installments on their energy bills subsequently.*

⁴⁴ See <https://www.ofgem.gov.uk/environmental-programmes/energy-companies-obligation-eco/previous-energy-efficiency-schemes>

⁴⁵ See <https://www.gov.uk/government/publications/2010-to-2015-government-policy-household-energy/2010-to-2015-government-policy-household-energy#appendix-7-energy-company-obligation-eco>

⁴⁶ Section 57 Energy Act 2013

⁴⁷ *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).*

⁴⁸ See <https://www.gov.uk/government/publications/electricity-market-reform-contracts-for-difference>

government seeks to change policy objectives. The program for EMR has been established to attract the £110 billion of capital investment⁴⁹ which the UK electricity sector will need to replace and upgrade the UK's electricity infrastructure. The electricity sector is a critical part of the UK economy, an important driver of growth and key to meeting the UK's commitment to reduce its carbon dioxide emissions.

The government's objectives for the EMR are to ensure a secure electricity supply, ensure sufficient investment in sustainable low-carbon technologies and to minimize costs for consumers. As of May 2015, the government has published an array of guidance, regulations and legislation including the Electricity Market Reform Delivery Plan,⁵⁰ the CfD standard terms and conditions⁵¹, the Electricity Market Reform (General) Regulations 2014⁵², the Capacity Market Rules⁵³, and the Electricity Market Reform Annual Update 2014⁵⁴. The final CfD Allocation Framework was published on 1 September 2014⁵⁵, and updated on 2 October 2014.⁵⁶ The final Allocation Framework sets out the application and CfD offer processes,

including the eligibility and qualification assessment, auction rules and the valuation formula. The CfD (Allocation) Regulations which came into force on 1 August 2014 set out the eligibility requirements an applicant must satisfy to be eligible for a CfD. The first CfD contracts were allocated in February 2015; a total of 27 projects were awarded CfDs worth £315million.⁵⁷

Reference Price

In December 2013, DECC produced the first EMR Delivery Plan which sets out strike prices for CfDs for the period 2014/15 – 2018/19.⁵⁸ With these strike prices the government aims to ensure 30% of electricity is generated from renewable sources by 2020, while keeping costs as low as possible⁵⁹. The prices are designed to be broadly comparable to the support levels under the current RO regime and are designed to fall over the course of the decade, as the renewable energy technology costs decrease. Offshore wind projects, for example, will qualify for £155/MWh of support in 2014/15, which falls steadily over the next five years to £140/MWh in 2018/19. Fourteen categories replace the thirty five under the RO regime. CCS and nuclear projects do not have a published strike price. Instead, DECC will consider how best to price CfD's and the appropriate length of contracts for these projects on a case by case basis. The prices for renewables are intended to be comparable to the support levels currently available under the RO, taking into account differences such as contract length and inflation indexation arrangements. The cost to consumers is controlled by the Levy Control

⁴⁹ See <https://www.gov.uk/government/policies/maintaining-uk-energy-security-2/supporting-pages/electricity-market-reform>

⁵⁰ See <https://www.gov.uk/government/publications/electricity-market-reform-delivery-plan>

⁵¹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/348142/Generic_CfD_TCs_29_August_2014_.pdf

⁵² See http://www.legislation.gov.uk/ukdsi/2014/9780111116791/pdfs/ukdsi_9780111116791_en.pdf

⁵³ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/340046/capacity_market_rules.pdf

⁵⁴ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/371384/Annual_Update_Print.pdf

⁵⁵ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/349370/Final_Allocation_Framework.pdf

⁵⁶ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/404405/Contract_for_Difference_Final_Allocation_Framework_for_the_October_2014_Allocation_Round.pdf

⁵⁷ See <https://www.gov.uk/government/statistics/contracts-for-difference-cfd-allocation-round-one-outcome>

⁵⁸ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/268221/181213_2013_EMR_Delivery_Plan_FINAL.pdf

⁵⁹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/268221/181213_2013_EMR_Delivery_Plan_FINAL.pdf

Framework⁶⁰, which ensures that the projected cost of the RO, CfD and small-scale Feed-in Tariffs does not exceed £7.6bn (2011/2012 prices) in 2020/21.⁶¹ The intention is that the new regime will save consumers around £5 billion by 2030.⁶²

Other important provisions include (i) change in law; (ii) the negotiability of CfDs; and (iii) offtaking (discussed further below). The change in law provisions are designed to provide the CfD Holder with an element of protection so that the long-term price stability afforded to CfD holders is not undermined by legislative and regulatory changes. The definition of a ‘Qualifying Change of Law’ is wide enough to cover general changes in law which have a discriminatory effect and lack objective justification.⁶³ Most significantly, compensation covers lost revenue, not just added costs. In respect of negotiability of the CfDs, the government intends to offer a standard contract to generators, leaving the CfD Counterparty little discretion to negotiate terms. The government has specifically stated that no changes will be permitted which affect the commercial substance of the agreement or the allocation of risk.⁶⁴

⁶⁰ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209361/Levy_Control_Framework_and_Draft_CfD_Strike_Prices.pdf

⁶¹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263937/Final_Document_-_Investing_in_renewable_technologies_-_CfD_contract_terms_and_strike_prices_UPDATED_6_DEC.pdf

⁶² See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263937/Final_Document_-_Investing_in_renewable_technologies_-_CfD_contract_terms_and_strike_prices_UPDATED_6_DEC.pdf

⁶³ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/267649/Generic_CfD_-_Terms_and_Conditions_518596495_171_.pdf

⁶⁴ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263169/FID_Update_3_Contract_Award_Process.pdf

Offtaker of Last Resort

Investment from independent generators will play a key role in meeting the government’s decarbonisation and security of supply goals. Independent generation developers typically rely on long-term offtake contracts (Power Purchase Agreements (PPAs)) in order to secure the finance they need to participate in the market. The government considers that independent renewable generators may initially have difficulty developing projects under CfD’s because of the uncertainty associated with the transition to the CfD and because of concerns that there may not be sufficient levels of competition in the long-term PPA market under CfDs.⁶⁵ The government took powers in the Energy Act 2013 to establish an Offtaker of Last Resort (OLR) mechanism to further support independent renewable generators by promoting the availability of PPAs and encouraging competition in the PPA market. DECC published its consultation paper for the OLR mechanism in February 2014⁶⁶, and the government’s response was published in September 2014⁶⁷, which confirmed the government’s intention to implement the OLR policy and clarified its high-level design. Under the OLR mechanism all renewable CfD generators will be allowed to access the OLR irrespective of their size or technology type. The government intends to require some suppliers to bid for backstop PPA’s in order to ensure the mechanism is deemed bankable and promotes sufficient competition. Backstop PPA’s will be allocated to offtakers on a competitive basis, with Ofgem using a sealed-bid process to allocate generators to offtakers. DECC’s preferred approach is to have one set

⁶⁵ See <http://uk.practicallaw.com/5-557-406?q=offtaker+of+last+resort>

⁶⁶ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/278893/OLR_Consultation__11_Feb.pdf

⁶⁷ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/324261/OLR_Government_Response.pdf

of terms and conditions that would apply to all Backstop PPA contracts, with the contract designed to be bankable, simple and balanced in terms of risk sharing. The standard terms of a Backstop PPA were issued on 25 February 2015, forming the contract that will be entered into between a licensed supplier and an eligible generator under the OLR mechanism. The OLR scheme will be operational from October 2015.⁶⁸

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 Britain⁶⁹.

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”).⁷⁰

⁶⁸ See <https://www.gov.uk/government/consultations/implementing-the-offtaker-of-last-resort>

⁶⁹ Section 82(7), Energy Act 2004 Part 2, Ch. 1.

⁷⁰ Utilities Act 2000, Ch. 27, Part V (amending the Electricity Act 1989).

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 DECC, established in October 2008, to bring together energy and climate change policy in the UK. DECC’s strategic objectives are to:

- save energy with the ‘Green Deal’ and support vulnerable consumers, specifically by reducing household, business and public sector energy use, and helping to protect the fuel poor;
- secure a low carbon energy future, specifically by reforming the energy market to ensure it is diverse, safe, secure and affordable and incentivising low carbon investment and deployment;
- push forward action on climate change in the UK and abroad, specifically by working for international action to tackle climate change, and working with other government departments to ensure that UK carbon budgets are met; and

- manage energy responsibly and cost-effectively, specifically by ensuring public safety and value for money in the way it manages nuclear, coal and other energy liabilities⁷¹.

The principle UK laws and regulations relevant to the renewable energy sector are:

- the Climate Change Act 2008⁷², which sets an 80% target for the year 2050 for the reduction of certain greenhouse gas emissions by supporting a system of carbon budgeting (in the form of five-year commitments to reduce carbon emissions and the means to achieve the targets).

It also confers powers to establish trading schemes or activities for limiting or reducing GHG emissions, and addresses adaptation to climate change impacts. These all rely greatly on the contribution of renewable power⁷³;

- the Energy Act 2011⁷⁴ has three principle objectives: tackling barriers to investment in energy efficiency, enhancing energy security and enabling investment in low carbon energy supplies. It encourages the use of new technologies (such as carbon capture and storage and emerging renewable technologies) in order to increase the ways in which the UK generates electricity. In

addition, it regulates electricity generated from renewable sources, electricity transmission, payments to small-scale generators of low-carbon electricity, and payments in respect of the renewable generation of heat;

- the Energy Act 2013, which succeeds the Energy Act 2010 introduces decarbonisation targets⁷⁵ and places the Secretary of State under a duty to ensure that the carbon intensity of electricity generation is no greater than the maximum permitted level of the decarbonisation target range. A range of EMR regulations were published in 2014 to complement the EMR measures identified in the Energy Act 2013, including (i) the Electricity Market Reform (General) Regulations 2014, (ii) the Contracts for Difference (Allocation) Regulations 2014, (iii) the Contracts for Difference (Definition of Eligible Generator) Regulations 2014, (iv) the Contracts for Difference (Standard Terms) Regulations, (v) the Contracts for Difference (Electricity Supplier Obligations) and (vi) the Electricity Capacity Regulations that all entered into force on 1 August 2014, and (vii) the Electricity Capacity (Supplier Payment) Regulations 2014 that came into force on 18 December 2014;
- the Planning Act 2008⁷⁶, which makes provisions for infrastructure in Renewable Energy Zones (being areas outside the UK's territorial sea to be exploited for energy production)⁷⁷;

⁷¹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48335/5107-decc-science-innovation-strategy-2012.pdf

⁷² Brought into force by the Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order 2009 No. 1258.

⁷³ 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).

⁷⁴ Brought into force by the Energy Act 2011 (Commencement No. 2 and Saving) Order 2013.

⁷⁵ Section 1(1) Energy Act 2013

⁷⁶ Brought into force by the Planning Act 2008 (Commencement No. 1) (England) Order 2009 No. 1303 (C. 70).

⁷⁷ As defined in section 84(4), Energy Act 2004, Part 2, Ch. 2.

- the Planning and Energy Act 2008⁷⁸, which allows local planning authorities to include policies imposing reasonable requirements for a proportion of energy used in regional development to be energy from renewable sources in the locality of the development;
 - the Utilities Act 2000⁷⁹, 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 sources⁸⁰; and
 - the Carbon Plan, published in December 2011, which sets out plans for achieving the emissions reductions up to 2027 pledged in previous carbon budgets, including the intention to reduce UK emissions by 80% from 1990 levels in 2050.⁸¹ The first four carbon budgets have been set into law for the period 2008-2027. According to the latest projections, the UK is on track to meet the first three legislated carbon budgets, but there is an estimated shortfall of 181MtCO₂ over the fourth⁸².
- and production of energy in the UK. Ofgem administers the Renewables Obligation and its role includes⁸³:
- 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:

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

The principal regulatory body in respect of renewable power is Ofgem, an independent body which regulates the pricing, transmission

- the Renewables Obligation Smart Meters⁸⁴;
- Offshore Electricity Transmission for renewable and non-renewable sources⁸⁵;
- the administration of government environmental programs (e.g., the Renewables Obligation, Climate Change Levy exemptions and the Carbon Emission Reduction Target⁸⁶, which obliges energy suppliers to provide grants and offers to

⁷⁸ See www.opsi.gov.uk.

⁷⁹ Brought into force by the Utilities Act 2000 (Commencement No. 1 and Saving) Order 2000 No. 2412 (C. 67).

⁸⁰ Related legislation includes the Electricity and Gas (Carbon Emissions Reduction) (Amendment) Order 2010 (SI 2010/1958).

⁸¹ See <https://www.gov.uk/government/publications/2010-to-2015-government-policy-greenhouse-gas-emissions/2010-to-2015-government-policy-greenhouse-gas-emissions>

⁸² See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47617/3749-carbon-plan-annex-b-dec-2011.pdf

⁸³ Ofgem also administers the NIRO.

⁸⁴ See <https://www.ofgem.gov.uk/about-us/who-we-are/our-structure/ofgem-e-serve>

⁸⁵ See <https://www.ofgem.gov.uk/network-regulation-riio-model>

⁸⁶ See <https://www.ofgem.gov.uk/about-us/how-we-work/promoting-sustainability/sustainability-reporting>

enable individuals to pay for energy efficiency measures and renewable energy technologies in their homes); and the Renewable Heat Incentive (RHI)⁸⁷.

Ofgem was restructured in 2009 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. A number of regulatory amendments to the RHI scheme came into effect on 12 February 2015⁸⁸, including updating the Ofgem Heat Loss Assessment tool and the introduction of a new tiered tariff applicable to producers of biomethane⁸⁹. Ofgem has provided detailed guidance on the changes⁹⁰.

In January 2014, Ofgem brought into effect new rules designed to simplify the domestic energy market. The reforms include a ban on energy suppliers operating what Ofgem describes as "complex multi-tier tariffs" (where consumers are initially charged a higher rate, which only falls if their consumption increases above certain levels). Suppliers cannot offer more than four tariffs per fuel type, of which one must be a standard variable rate tariff. Suppliers had until 30 June 2014 to transfer all customers on existing tariffs onto their cheapest variable rate, unless they choose otherwise.⁹¹ These changes are intended to make it easier for customers to assess how competitive different tariffs are and to provide them with clear information on their energy usage and efficiency. However, there have been criticisms that by restricting the number of tariffs to just

four, it could be harder for energy companies to offer a range of green energy.⁹²

Another regulatory body is the Office for Renewable Energy Deployment ("ORED"), launched by the government in 2009 to ensure that the UK meets its targets for renewable energy. It is run under DECC, and its work includes:

- ensuring that renewable technologies can efficiently be deployed by supporting and giving importance to a strong planning system, supply chains and connection to the grid;
- providing the opportunity for local communities to have communal renewable energy schemes to share and benefit from;
- enabling the acceleration of technologies which will be important contributors in the future, such as marine energy, in which the UK has a strong presence as the innovator of the world's first full-scale devices to harness the power of waves and tides; and
- aiding a current project to encourage manufacturers of wind turbines to use the UK's potential and another project to develop an offshore electricity grid.⁹³

In February 2013, ORED commissioned Climate UK to organize a program of local authority stakeholder engagement workshops in four UK locations to discuss the costs, benefits and impacts of renewable energy in relation to the specific needs of local areas.

⁸⁷ See www.ofgem.gov.uk.

⁸⁸ See http://www.legislation.gov.uk/ukdsi/2015/978011124970/pdfs/ukdsi_978011124970_en.pdf

⁸⁹ See <https://www.ofgem.gov.uk/publications-and-updates/changes-non-domestic-rhi-regulations-february-2015>

⁹⁰ See <https://www.ofgem.gov.uk/publications-and-updates/guidance-volume-one-two-and-fuel-measurement-and-sampling-guidance>

⁹¹ See <https://www.ofgem.gov.uk/information-consumers/domestic-consumers/understanding-energy-bills>

⁹² See for example: <http://www.businessgreen.com/bg/analysis/2320773/good-energy-warns-over-ofgem-restrictions-to-smarter-tariffs>

⁹³ See http://tools.decc.gov.uk/en/content/cms/meeting_energy/renewable_ener/ored/ored.aspx

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

When an application is made for development consent for a nationally significant energy infrastructure process, the following process applies:

- The Planning Inspectorate receives and considers the application under the Planning Act 2008 (as amended by the Localism Act 2011);
- The Planning Inspectorate makes recommendations to ministers at DECC; and
- DECC makes the final determination.⁹⁴

Renewable energy projects which have an output of over 50MW for onshore projects and 100MW for offshore projects must follow this development consent process. Projects under 50MW will be determined by the relevant local planning authority under procedures set out in the Town and Country Planning Act 1990.

DECC is responsible for setting the framework for the regulation and licensing of electricity plants. Ofgem considers these licences and decides whether or not to grant a licence. Under section 4(1) of the Electricity Act 1989, it is an offence to generate, distribute or supply electricity unless authorised to do so by a licence, or otherwise exempted. Wind farms, combined heat and power systems and other forms of renewable technologies for the generation of electricity are not exempt from these licensing obligations, since the generating technology used is not directly part of the criteria used to

assess a licensing application.⁹⁵ Required electricity licenses include a transmission, distribution, interconnector and generation licence.

The Marine Management Organisation (MMO) is responsible for considering and determining licensing applications for offshore windfarms, wave and tidal devices that have a capacity up to 100 megawatts. The MMO carries out licensing and enforcement functions under the Marine and Coastal Access Act on behalf of the Secretary of State. A licence under the Food and Environmental Protection Act (Part II) 1985 is also required from the Marine and Fisheries Agency for depositing materials in the sea. This encompasses the placement of construction material, or disposal of waste.⁹⁶ In deciding whether to grant a licence the MMO will pay particular regard to the environmental implications and other effects of the work, including the potential hydrological effects, interference with other marine activities, potential risk to fish and other marine life and any adverse implications for designated marine conservation areas.⁹⁷ In addition to a marine licence, offshore applications may also require consent under the Electricity Act 1989.

Application fees for these consents range from £5,000 for a generating station with less than 200 megawatts capacity up to £20,000 for a generating station with more than 500 megawatts capacity.⁹⁸

⁹⁴ See <https://www.gov.uk/government/policies/providing-regulation-and-licensing-of-energy-industries-and-infrastructure/supporting-pages/planning-and-consents-for-national-energy-infrastructure>

⁹⁵ See <https://www.gov.uk/government/policies/providing-regulation-and-licensing-of-energy-industries-and-infrastructure>

⁹⁶ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/43573/Section_36_guidance.pdf

⁹⁷ See <https://www.gov.uk/marine-licensing-impact-assessments> See also Part 4 of the Marine and Coastal Access Act 2009

⁹⁸ Application fees for these consents are set out in the Electricity (Offshore Generating stations) (Applications for Consent) Regulations 2006

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

There is no specific category of “licence exempt generation” in the UK, but there are instances in which a licence need not be applied for. Exemptions may apply to individual cases or a class of activity and may be unconditional or subject to certain conditions including length of time.⁹⁹ Exemptions have been granted to renewable energy generators. An exemption Order was granted to RWE Npower Renewables (Markinch) Limited in respect of the Markinch Biomass CHP facility in Scotland and to Baillie Windfarm Limited in respect of the Baillie onshore wind farm in Scotland in April 2013¹⁰⁰¹⁰¹.

INCENTIVES

7. 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, which is a specific energy tax on the supply of gas and electricity to non-domestic users in the UK.¹⁰² 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).¹⁰³ LEC’s are issued to generators of renewable energy for each MWh of electricity produced.

Renewable generators are also exempt from the requirement to purchase carbon allowances in order to generate electricity under the EU ETS, and receive long-term tariff support payments for renewable heat generation under the RHI.

On 1 April 2010, the government introduced the concept of ‘FITs for micro-generation’. These are payments to producers of renewable electricity up to 5 MW, whether used by the generator for its own purposes or exported to the national transmission system (National Grid). The tariffs are designed to incentivize the generation of renewable electricity on a small scale.¹⁰⁴ The FITs scheme supports renewable energy projects which involve new anaerobic digestion, hydro, solar photovoltaic and wind energy. A pilot program is also being set up, whereby the first 30,000 micro combined heat and power installations with an electrical capacity of 2kW or less are supported by FITs. More than 21,000 installations, mostly domestic, have been registered to date.¹⁰⁵

⁹⁹ See <https://www.ofgem.gov.uk/licences-codes-and-standards/licences/licence-exemptions-and-exceptions>

¹⁰⁰ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/137875/markinch_baillie_licence_exemptions.pdf

¹⁰¹ See http://www.legislation.gov.uk/uk/si/2013/1011/pdfs/uk/si_20131011_en.pdf

¹⁰² 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.

¹⁰³ Part V, Sections 48 and 49 of the CCL.

¹⁰⁴ 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).

¹⁰⁵ See <https://www.gov.uk/government/news/hubne-takes-action-on-solar-farm-threat>

On 7 February 2011, the UK government undertook a review of the FITs scheme to determine how it could be improved in order to meet the target of 10% of savings in 2014/15, as committed in the 2010 Spending Review. This addressed issues such as tariff levels, eligible technologies and administrative and regulatory arrangements.

The review was separated into three phases, and included consideration of (i) linking small-scale solar photovoltaic (PV) tariffs to minimum energy efficiency requirements and introducing new multi-installation tariff rates for aggregated solar PV schemes; (ii) solar PV cost control mechanisms; and (iii) wind, anaerobic digestion and micro-combined heat and power and scheme administration issues.

On 24 May 2012, the government responded to the consultation on solar PV cost control mechanisms, which included setting out solar PV tariffs for new installations from 1 August 2012. It also set tariffs on a quarterly basis based on deployment during the year (through modifications to the Standard Conditions of Electricity Supply Licences).

The government also addressed a broad range of other issues, including tariffs for anaerobic digestion, hydro, micro CHP and wind, the treatment of community-owned installations and a preliminary accreditation mechanism,¹⁰⁶ through changes that came into force on 1 December 2012.¹⁰⁷

8. 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.

¹⁰⁶ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42917/5905-government-response-to-consultation-on-comprehensi.pdf

¹⁰⁷ See <https://www.gov.uk/combined-heat-and-power-incentives>

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

The FITs with CfDs mentioned above are long term contracts allocated by the National Grid to developers of low carbon generation and which will guarantee a set price for the electricity produced over an extended period of time.

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

The UK ratified the Kyoto Protocol on 31 May 2002 and it entered into force on 16 February 2005.¹⁰⁸

The Kyoto Protocol introduced the concept of carbon emissions trading whereby countries listed under Annex 1 of the protocol (developed countries) could use the carbon credits to meet their emission reduction commitments. This scheme was designed to assist with the transfer of resources and sustainable technologies to developing countries. Two types of carbon credits have been created; the Joint Implementation and the Clean Development Mechanism.¹⁰⁹ Under the Joint Implementation,¹¹⁰ emitters in countries listed in Annex 1 are allowed to purchase carbon credits via greenhouse gas-reduction projects which have been implemented either in another developed country, or in a country with an economy in transition. Under the Clean Development Mechanism, developed countries can accrue carbon credits by financing carbon reduction projects in developing countries. The second commitment period of the Kyoto Protocol runs from January 2013 to December 2020.

¹⁰⁸ See https://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php

¹⁰⁹ Defined in Article 12 of the Protocol

¹¹⁰ Defined in Article 6 of the Protocol

A Working Group on the Durban Platform for Enhanced Action has been established to develop a new protocol with legal force under the UN Convention on Climate Change by 2015. This new protocol will be implemented by 2020, when the second commitment period ends.

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

The National Grid is the UK's electricity transmission system. The Connection and Use of System Code (CUSC) is the contractual framework for connection to and use of the 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 its policy 'Smarter Grids: The Opportunity' in 2009, which recognizes the need for an intelligent grid suited to managing the fluctuating input of energy from renewable sources. Subsequently, DECC and Ofgem created the DECC/Ofgem Smart grid Forum in 2011. In February 2014, the Smart Grid Forum published the UK's 'Smart grid Vision and Routemap',¹¹¹ a formative aspect of which is the Smart Metering Implementation Program,¹¹² ambitiously aiming to roll out 53 million smart meters (as mentioned in question 4 above) to all domestic and smaller non-domestic premises by 2020, with the aim of installing smart meters in every home by 2050. Whilst the installation of a smart meter is not a legal obligation, the government has placed regulatory obligations on energy suppliers to take "all reasonable steps" to install such. A smart meter sends an electronic meter reading to an energy supplier in intervals of an hour or

less for monitoring and billing, doing away with the need for manual meter readings and estimated bills. Ofgem established the £500m Low Carbon Networks Fund in August 2009 to support smart grid trials over the five year period from April 2010 to 2015. DECC's Low Carbon Investment Fund has provided a further £2.8m for eight smaller smart grid demonstration projects.¹¹³

12. 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 UK 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. In the 2010 UK Budget, DECC announced its intention to provide up to £60 million of government funding to manufacturers of offshore wind turbines looking to locate new facilities in the UK in order to support infrastructure such as the development of ports.¹¹⁴ The 2011 budget introduced a carbon price floor for electricity generation from 1 April 2013 to spur investment in the low-carbon power sector. This has been predicted to start at around £16 per tonne of carbon dioxide in 2013 and follow a linear path to £30 per tonne in 2020.

¹¹¹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/285417/Smart_Grid_Vision_and_RoutemapFINAL.pdf

¹¹² See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/413712/Consultation_on_review_of_Data_Access_and_Privacy_framework_final.pdf

¹¹³ See <https://www.gov.uk/government/publications/2010-to-2015-government-policy-uk-energy-security/2010-to-2015-government-policy-uk-energy-security>

¹¹⁴ www.hm-treasury.gov.uk

The budget also extended Climate Change Agreements (CCAs) to 2023 and increased the levy discount on electricity for CCA participants from 65 to 80 per cent from April 2013 to continue to support energy intensive businesses exposed to international competition. In addition, the government highlighted it remains committed to providing funding for four CCS demonstration plants. In the 2012 UK budget, the government announced its intention to consult on simplifying the Carbon Reduction Credit (CRC) energy efficiency scheme to reduce administrative burdens on business and highlighted that should the simplifications not alleviate administrative burdens, it would replace CRC revenues with an alternative environmental tax. In the 2014 UK Budget, the government announced it will provide £60 million investment for new low carbon innovation to support CCS technologies that show significant potential to reduce the cost of low carbon generation in the UK.¹¹⁵ In the 2015 UK Budget released on 18 March 2015, the government announced that it will support manufacturers by bringing forward the compensation for indirect costs of small-scale FITs for energy intensive industries to the earliest point at which State Aid approval is received in 2015-16. This is expected to save energy intensive industries £25million in 2015-2016. The 2015 Budget also outlines measures to strengthen the UK's energy supply in both the short and longer term, including the bringing forward of proposals for legislation in the next Parliament for competitive tendering of onshore electricity transmission infrastructure. The government also announced its decision to enter into the first phase of negotiations on a CfD for Swansea Bay Tidal Lagoon, to determine whether the project is affordable and

value for money for consumers, and whether it will drive down costs for tidal lagoon energy in the UK.¹¹⁶

The government introduced the Enhanced Capital Allowances (ECA) scheme in 2001 to encourage businesses to invest in low carbon, energy-saving equipment¹¹⁷. The scheme provides a tax incentive to businesses that invest in equipment that meets published energy-saving criteria. The ECA scheme allows the full cost of an investment in designated energy-saving plant and machinery to be written off against the taxable profits of the period in which the investment is made. The Carbon Trust published a guide to equipment eligible for Enhanced Capital Allowances in April 2015, facilitating implementation of the ECA scheme¹¹⁸.

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

The RO was introduced in 2002 under the Electricity Act 1989 to require all licensed electricity suppliers in England and Wales to supply a specified proportion of their electricity sales from renewable sources.¹¹⁹ Following the implementation of the Energy Act 2013, FITs with CfDs will replace the existing subsidies and incentives such as the RO, with the RO expected to finally phase out in 2037. Applications for RO can be made up to 31 March 2017.

¹¹⁵ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/293759/37630_Budget_2014_Web_Accessible.pdf

¹¹⁶ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/416330/47881_Budget_2015_Web_Accessible.pdf

¹¹⁷ See <https://www.gov.uk/government/publications/enhanced-capital-allowance-scheme-for-energy-saving-technologies>

¹¹⁸ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/421006/ECA272_Capital-Allowance_v7_April_2015.pdf

¹¹⁹ 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.

The Renewables Obligation Order 2002 (“ROO 2002”) was designed to incentivize the deployment of large-scale renewable electricity generation. Under the ROO 2002, UK electricity suppliers were under an obligation to source an increasing proportion of their electricity from renewable sources and a renewables obligation certificate (“ROC”) is issued for each MWh.¹²⁰ Since the introduction of the ROO, growth in renewable electricity generation more than doubled in the UK, attributed to the financial benefit of trading ROCs.¹²¹

The Renewables Obligation (Amendment) Order 2013 specifies the amount of support that individual technologies will receive under the RO for the period 2013-2017. The RO banding changes are estimated to deliver 11TWh more generation annually from 2016/2017 compared to the previous bands and are estimated to cost the average household £6 less in 2013/2014 than previously estimated.

The new FIT regime introduces a long term contract set at a fixed price level, under which variable payments are made to top-up the level of payment to the generator to the agreed tariff. The FIT payment will be made in addition to the generator’s revenues from selling electricity in the market.¹²²

On 1 April 2013, Ofgem revised its guidance on the RO for licensed suppliers of electricity. A bioliquid cap was introduced from 1 April 2013, meaning that suppliers are limited to supplying 4% of their obligation using ROCs that were issued in respect of electricity generated from the combustion of bioliquids. In addition, the cap on co-firing ROCs which an electricity supplier can utilise as a percentage of their obligation was removed.¹²³

To increase the proportion of heat produced from renewable sources, the UK government launched the RHI in November 2011, which gives payments to entities that self-generate renewable heat and is the world’s first long-term financial support program for renewable heat.¹²⁴

The Renewable Heat Premium Payment (RHPP) voucher scheme in the UK closed on 31 March 2014. Under this scheme, homes not heated by mains gas were eligible to apply for grants for air-to-water-source heat pumps, biomass boilers and solar thermal.¹²⁵ The scheme was replaced by the domestic Renewable Heat Incentive scheme which launched on 9 April 2014 and aims to help businesses, the public sector and non-profit organisations meet the cost of installing renewable heat technologies. Biomass, heat pumps, geothermal heating, solar thermal collectors and biomethane are all covered by

¹²⁰ 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, see www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/renewable.

¹²¹ 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”.

¹²² See <https://www.gov.uk/government/publications/planning-our-electric-future-a-white-paper-for-secure-affordable-and-low-carbon-energy>

¹²³ See <https://www.ofgem.gov.uk/ofgem-publications/58129/ro-supplier-guidance.pdf>

¹²⁴ 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.

¹²⁵ As of 18 February 2013, 5,758 vouchers had been issued under the scheme with a total value of £4,051,250. Of these, according to the Energy Saving Trust¹²⁵, 39% were for solar thermal, 35% for air source heat pumps, 14% for ground or water source heat pump and the remaining 12% for biomass boilers. 3,488 vouchers of the total number issued had been redeemed.

the scheme.¹²⁶ In November 2014, DECC announced amendments to the Domestic RHI scheme rules. These changes came into force on 5 February 2015 and include clarification that heating systems that provide heat to properties with more than one building can be eligible for the domestic RHI, and allowance for Registered Social Landlords to apply for domestic RHI without a Green Deal Assessment.¹²⁷

STATISTICS

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

Renewables’ share of electricity generation in 2014 was a record 19.2%, an increase of 4.3% compared to 2013.¹²⁸ In the fourth quarter (“Q4”) of 2014, renewables’ share of electricity generation was a record 22.0%, up 4.2% on the share in Q4 2013. At the end of Q4 2014, the UK’s renewable electricity capacity totalled 24.2 GW, an increase of 23% on that installed

at the end of Q4 2013. Onshore wind had the highest share of capacity (34%) followed by solar PV (22%), offshore wind (19%), bioenergy (18%), and hydro (7.1%).¹²⁹

Total renewable electricity generation in 2014 was 64.4 TWh, a 20% increase on the 53.7TWh in 2013.

The main contributors to this substantial increase were:

- hydrogeneration (increased by 26%);
- bioenergy (increased by 24%); and
- offshore wind (increased by 16%).

Bioenergy represented 36% of total renewable generation in 2014 (including 20% from plant biomass and 7.8% from landfill gas); onshore wind had a 29% share, offshore wind a 21% share, with 9.2% of renewable generation from hydro and 6.1% from solar photovoltaics (up from 3.8% in 2013).

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¹²⁶ See <https://www.gov.uk/renewableheatincentive>
¹²⁷ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/403636/2015_Domestic_RHI_Regs_Changes_Info_Sheet-5_February_2015.pdf
¹²⁸ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415998/renewables.pdf

¹²⁹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415998/renewables.pdf

UNITED STATES OF AMERICA



James Hayden



Daniel Hagan

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GENERAL

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

The US is rich in many sources of renewable energy, including: wind; solar; geothermal; various types of hydropower such as conventional, pumped storage, tidal and kinetic; biomass; and many developing forms, such as biofuels. In 2014, approximately 13% of the electricity generated by utilities in the US came from renewable resources, primarily hydropower and wind.

The US has multiple programs to promote the use of renewable power, but many are established by state governments or other governmental subdivisions of the states and therefore are geographically limited in their application. There are, however, some financial incentives available nationally through federal programs and one federal mandatory purchase program, as described below. Note that the information below is current only as of April 2015.

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

The US Congress (the national legislative body) has at different times considered implementing a federal renewable energy standard (“RES”) for electric power, but thus far has not done so. However, approximately 37 states and the District of Columbia, have implemented some type of an RES or renewable portfolio standard (“RPS”), also sometimes known as a certificate or quota program. Some of these programs enforce mandatory compliance, whereas others are voluntary or only establish target levels for compliance. Many states have also implemented other types of incentive programs. The types of resources that qualify for the state-run programs vary by state. Wind, solar and geothermal are generally included, but mature technologies, such as conventional hydroelectric, are generally excluded (although incremental output resulting from efficiency gains may qualify for some programs). The definition of “renewable” reflects the state’s policy priorities and, often, the types of resources available to the state, given its geography.

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

As a preliminary matter, it is important to understand that the generation and transmission facilities in the US are owned and operated by a wide variety of entities. The majority of electric consumers are served by private-sector companies (including those with publicly traded shares), but assets are also owned and operated by a variety of federal, state and local governments and by companies that are organized as cooperatives (member-owned companies whose shareholders are also their customers). There is no national grid company. The applicable laws and regulations differ depending on the nature of the entity that owns or operates the generation and transmission facilities.

Federal Power Act

The Federal Power Act (“FPA”) grants the Federal Energy Regulatory Commission (“FERC”) authority over the sale of power at wholesale and the transmission of electric power in interstate commerce by public utilities. But, FERC does not establish rates on its own initiative. Each public utility (as defined below) must file with FERC the rates at which it proposes to sell power in advance of making sales, and FERC has the authority to review the rates proposed and determine whether they are just and reasonable.

Although the FPA is the predominant law that shapes the wholesale power industry in the US, FERC does not regulate all sellers of power. FERC’s FPA jurisdiction is limited to states or parts of states that are interconnected to other states (even if the transaction is wholly within a single state, so long as the region is interconnected). Thus, FERC’s FPA jurisdiction does not extend to

the States of Hawaii or Alaska, nor to parts of the State of Texas within the Electric Reliability Council of Texas (“ERCOT”), each of which does not (or is deemed to not) connect to other states. In these areas, all power transactions are instead regulated under state laws. Further, under the FPA, a “public utility” is defined to exclude federal and state governments or other political subdivisions as well as certain sellers of power that are organized as cooperatives and sell less than four million megawatt hours of electricity per year or are subject to oversight by the US Rural Utilities Service as a result of government loans that have been extended to them. These types of organizations are either self-governing, or in the case of some cooperatives, subject to regulation under state law.

However, even taking into account those exclusions, FERC’s jurisdiction over public utilities reaches the organizations that deliver power to the vast majority of end-users in the US. It regulates, among others, large vertically integrated, private-sector utilities; small companies and partnerships that own only one or a few generators; and six of the seven organized wholesale power markets (the seventh of which is in ERCOT and therefore outside of FERC’s jurisdiction). Even some exempt sellers come within FERC’s purview when they transact in markets that are regulated by FERC. Transmission that is owned or operated by public utilities (as defined above) is also subject to economic regulation pursuant to the FPA. The FPA applies without regard to the fuel source by which the power was produced.

Other than those public utilities that are subject to PURPA (defined and described below), a public utility that wishes to sell power – regardless of whether it sells renewable power – must file the tariff pursuant to which it will make such sales with FERC at least 60 days prior to its first sale. Many, if not

most, wholesale sales of power in the US are made pursuant to “market-based rates” which are negotiated bilaterally or determined through an organized market. If a seller wishes to sell at market-based rates, the terms on which it may do so must be set forth in the tariff that it files with FERC. FERC will authorize market-based sales by a seller only after evaluating market studies submitted by the seller to assure the seller cannot exercise market power. Once authorization is granted, and a market-based tariff is on file, sales may be made pursuant to the tariff without prior FERC approval. However, the seller will be required to report its transactions and must periodically demonstrate to FERC its continued inability to exercise market power.

Under the FPA, public utilities and certain other sellers that are not public utilities but who participate in US markets are also subject to market behaviour rules intended to protect consumers and the integrity of the market; and to reliability standards intended to assure the stability of the bulk electric power system. Owners and operators of renewable facilities are subject to these aspects of the FPA as well.

Transmission owners that are public utilities are required to offer “open access” transmission service, meaning that any person willing and able to meet the terms of their tariffs may receive service. Transmission capacity is awarded on a first-come, first-serve basis, but transmission owners are also responsible for expanding their systems to accommodate new users and are compensated for doing so. As noted above, there are some owners and operators of transmission that are not public utilities. FERC has no jurisdiction to order such transmission owners to provide open access; however, it has authorized public utilities to deny service to any person that is a transmission owner and does not provide reciprocal service. As a result, open access transmission is widely available throughout the continental US to renewable power projects as

well as others. Some renewable power project owners also own substantial transmission facilities, since renewable resources may be located in areas that are remote from the interconnected grid. In such cases, the renewable power project owner may also be subject to regulation as a transmission owner and/or provider under the FPA in some respects.

Public Utility Regulatory Policies Act

Some small renewable power generators are designated as “qualifying small power production facilities” or “QFs” under a federal law, the Public Utility Regulatory Policies Act (“PURPA”).¹ These QFs are entitled (but not obligated) to sell their power to the utility to which they interconnect at an “avoided cost” rate – that is, a rate that reflects the cost the utility avoids by taking the power from the QF rather than an alternative source. Avoided cost rates are set by the state, and utilities often offer the avoided cost rate for small QFs by tariff. While in some cases the rates a QF can negotiate for a bilateral market-based sale may be better than the avoided cost rate available under PURPA, the program remains popular because QFs, whether or not they sell power at the avoided cost rate, also benefit from certain other regulatory exemptions by maintaining QF status.

PURPA applies in all fifty states, the District of Columbia and Puerto Rico. To be eligible for this program, (1) at least 75% of energy input for the QF must come from renewable resources, geothermal resources, biomass (any organic material not derived from fossil fuels), waste (which is broadly defined as an input having little or no commercial value and which

¹ There are two types of qualifying facilities under PURPA: qualifying small power production facilities and qualifying cogeneration facilities. The discussion below addresses only the former, and as used herein, “QF” refers only to a qualifying small power production facility.

may include, among other things, used rubber tires, refinery off-gas, synthetic gas from coal, and various types of low-BTU coal waste as set forth in the regulations), or some combination of the foregoing; and (2) the use of oil, coal or natural gas (which may not exceed 25% of the total energy input) is limited to the minimum needed for ignition, start up, testing, flame stabilization, control uses and certain emergency needs. With limited exceptions, QFs cannot be more than 80 megawatts in size. Certain of the benefits of PURPA are restricted to a subset of smaller QFs.

PURPA was enacted in 1978. Its availability was narrowed by the Energy Policy Act of 2005, which established conditions pursuant to which utilities are excused from purchasing QF power at an avoided cost rate if the relevant market provides QFs with competitive options for the sale of their power. Notwithstanding these new limitations, the program has been in continuous use for over three and a half decades and remains important for some generators. In particular, sellers making sales from facilities that qualify as QFs under PURPA and are less than 20 megawatts are exempt from the obligation to have a tariff on file with FERC pursuant to the FPA, even if they choose to sell at market-based rates rather than an avoided cost rate. Further, all QFs that are 30 megawatts or less (plus geothermal and biomass QFs that are over 30 megawatts but less than 80 megawatts and certain other QFs, the construction of which began before 2000) are exempt from state laws respecting the rates and financial and organizational regulation of electric utilities. PURPA will remain in effect unless and until repealed by the US Congress; it has no expiration date.

State Programs

Some states have instituted incentive programs specifically for renewable power. The form of the state programs varies, and many states

have several different programs in place. The number of such state programs makes summarization here impossible.

Approximately 37 states and the District of Columbia have implemented an RES or RPS program. The mandatory programs require the utilities serving load in the state to assure some portion of the energy delivered is generated by a renewable resource. Under such programs, a renewable energy certificate, or "REC," is issued for each megawatt hour of renewable energy generated, which the plant owner can then sell either with the associated energy or, separately from the energy, as a tradable-REC or "TREC."

Utilities may build, own and operate renewable generation or purchase the output of renewable projects from third-parties to meet the RES requirements. Generally speaking, but subject to the specific state's rules, utilities demonstrate achievement of their quota by acquiring the RECs associated with the renewable power they generate or purchase for resale, and if the utility has not generated or purchased sufficient renewable energy to meet its RES obligation, it must purchase TRECs equal to the shortfall (or make an alternative payment).

Investor-owned utilities in the State of California have one of the more stringent requirements, which is to acquire 33% of their electric power from renewables by 2020. Only a limited portion of that can be generated by out-of-state resources. Thus, California, which is a very large state and has multiple renewable resources available, including good sources of wind, solar, hydro and geothermal energy, has seen a significant growth in renewable power generation of all types. In some states, however, the standard is more of a policy objective, with no direct, adverse consequences to the state's utilities if it is not achieved. For example, while the State of Utah established a renewable energy target of

20% of retail sales by 2025, utilities are obligated to procure renewable resources only to the extent they are cost-effective.

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

Rates. As noted above, FERC is the economic regulator of the wholesale sale of power by public utilities, which covers many renewable power generators. In the States of Hawaii and Alaska, and in ERCOT, jurisdiction lies with the state public utility regulator (which goes by various names, depending on the state, but for simplicity, each state utility regulator will be referred to as a “public utility commission” or “PUC” for the remainder of this article). The rates at which a utility must purchase a QF’s power pursuant to the mandatory purchase obligation under PURPA (in cases in which it is applicable) are regulated by the state PUC (pursuant to federal law). Sales of power at retail rates, including to on-site users of a generator’s power, is also a matter of state law, although some states have loosened their regulations to promote distributed generation, including roof-top solar.

Siting. Siting for generation and transmission located on land or within 5.6 km of the ocean coast (or within 16.2 km of the coast of the State of Texas or the western coast of the State of Florida) is generally a matter of state or local law. Some larger, utility-scale renewable power facilities are located on lands owned by the federal government (in particular, the federal government owns large tracts of land in the western part of the US), often administered by the Department of Interior’s Bureau of Land Management or the US Forest Service. New off-shore wind and experimental tidal or wave projects may also be located on the outer continental shelf beyond 16.2 km from the coast of the State of Texas or the west coast of the State of Florida or 5.6 km from any other state coast. To locate in these areas, the developer must secure approval from the

federal agency with jurisdiction over the land and obtain rights to the site by lease.

Facilities that are placed in navigable rivers and streams must secure a license from FERC pursuant to Part I of the FPA.

In addition, during siting, construction and operation, the facility will need to comply with environmental laws administered by either a state agency or the US Environmental Protection Agency (“EPA”) and may also be required to comply with laws administered by the US Army Corps of Engineers (for wetlands); the Federal Aviation Administration (for towers); the US Coast Guard; or the US Fish and Wildlife Service, among others.

Other Regulations. States generally have regulations governing many aspects of a utility’s existence and operations, including its organization (including mergers and ownership structures), finances and certain safety issues. Many states have implemented broad exemptions for companies that do not sell power at retail or small distributed generation, but the rules vary by state. In addition, as noted above, QFs are exempt from rate, organizational and financial regulation by states as a matter of federal law.

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

As noted above, the process for siting and developing generation on land or within close proximity to shore varies, but typically authorization is required from a local zoning authority and/or state agency. In some cases, states have made particular accommodations for renewable power; for example, some states have enacted laws to facilitate the installation of roof-top solar systems.

Larger renewable power facilities located on lands owned by the federal government or on the outer continental shelf generally require approval from the federal agency with

jurisdiction over the land and obtain rights to the site by lease. The US Department of Interior's Bureau of Land Management and Bureau of Ocean Energy Management, for example, require developers to obtain authorization to commence exploratory activities, such as collecting geological and geophysical data, followed by more extensive review of the environmental impact of a proposed project under the National Environmental Policy Act once a developer seeks to move forward with construction at a site.

Facilities that are placed in navigable rivers and streams must secure a license from FERC pursuant to Part I of the FPA.

6. Is there a category of “license-exempt generation”? If so, does it cover some types of renewable energy based generation?

As noted above, pursuant to PURPA, certain small renewable power generators that qualify as QFs are eligible for certain regulatory exemptions on both the state and federal level. Otherwise, there is no general category of “license-exempt generation.”

INCENTIVES

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

Yes.² Renewable energy projects may be eligible to receive either a production tax credit (“PTC”) or an investment tax credit (“ITC”).

² The following is a general description of the tax provisions applicable to renewable power. It is provided for your convenience and does not constitute legal advice. It is prepared for the general information of our clients and other interested persons. This information should not be acted upon in any specific situation without appropriate legal advice.

The specific eligible projects are defined by statute.

The PTC is generally available to the owner of a qualified facility that sells electricity produced in the US to an unrelated person. Wind, geothermal facilities and biomass projects are among the types of projects that may qualify for the PTC. As the name suggests, the tax credit taken for any particular year is based on that year's production. The amount of the credit is 1.5 cents per kilowatt hour of electricity, adjusted for inflation, for certain technologies, such as wind, geothermal and closed-loop biomass. With the inflation adjustment, the rate for these facilities was 2.3 cents per kilowatt hour for 2014. For certain other technologies, including open-loop biomass and landfill gas, the credit is reduced by half, and thus the 2014 rate for these types of facilities was 1.1 cents per kilowatt hour.

The PTC is available for electricity produced from a qualified facility over a 10-year period that begins on the date the facility is originally placed in service, provided the construction of the facility commenced before 1 January 2015. In April 2013, the Internal Revenue Service provided guidance establishing two ways to meet the requirement that construction of a qualified facility commence before 1 January 2014. This guidance was clarified in September 2013 and clarified and modified in May 2014. First, construction of a qualified facility is considered to have begun when “physical work of a significant nature” has started. Alternatively, construction of a qualified facility is considered to have begun when 5% of the total cost of the facility has been incurred by the taxpayer, and the taxpayer makes continuous efforts to complete the facility thereafter. The continuous efforts test will be deemed met if the facility is placed in service prior to 1 January 2017. The guidance also provides that in certain circumstances the evaluation can take place on a project-wide

basis rather than separately for each individual item of equipment.

The ITC is available for investments in solar, geothermal and small wind energy facilities (that otherwise meet the applicable requirements) and certain other types of qualifying property. The ITC applies in the year in which the qualifying property is placed in service and is a credit equal to a percentage of the taxpayer's tax basis in certain qualifying investments. A 30% ITC is available for solar energy property, qualified fuel cell property, and qualified small wind energy property placed in service before 1 January 2017. A 10% ITC is available for solar energy property placed in service after 31 December 2016 and for geothermal energy property regardless of when placed in service.

A 30% ITC is also available for investments in most types of qualified facilities that are eligible for the PTC, as described above. The owners of such qualified facilities, described below, may elect to claim a 30% ITC with respect to such property in lieu of the PTC. Qualified facilities that are eligible for the 30% ITC in lieu of the PTC ("qualified investment credit facilities") are wind facilities, closed-loop and open-loop biomass facilities, geothermal facilities, municipal solid waste facilities (landfill facilities and trash facilities), qualified hydropower facilities, and marine and hydrokinetic energy facilities the construction of which commences before 1 January 2015.

The 30% ITC in lieu of the PTC is allowed with respect to investments in qualified investment credit facilities regardless of whether investments in such property otherwise would not be eligible for the ITC or would be eligible for only a 10% ITC. For example, investments in qualified small wind facilities, the construction of which commences before 1 January 2015, are eligible for the 30% ITC even if such facilities are not placed in service before 1 January 2017. Similarly, investments in qualified geothermal

facilities, the construction of which commences before 1 January 2015, are eligible for the 30% ITC in lieu of the PTC even though investments in geothermal facilities normally are eligible for only a 10% ITC.

The US tax code depreciation rules include a Modified Accelerated Cost Recovery System ("MACRS"). Under MACRS, certain wind and solar projects have a favourable five-year statutory recovery period.

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

Except for the avoided cost rate available to certain QFs under PURPA, there is no federally mandated purchase applicable to renewable power.

Feed-in tariffs for the purchase of power at wholesale, which have been widely used in Europe, are available from some utilities. But, an entity that wishes to sell its power under a feed-in tariff still has to comply with the federal laws applicable to it. However, since the FPA is not applicable in the States of Alaska or Hawaii or within ERCOT, entities seeking to sell power in those areas, under a feed-in tariff or otherwise, are only obligated to comply with the state's laws. Hawaiian Electric Company, for example, offers a feed-in tariff for small generators using specified technologies, including photovoltaic and on-shore wind (although availability varies based on size and location).

Utilities and large consumers of power often also conduct competitive solicitations for long-term supplies of renewable power. In some cases, the projects seeking to sell power compete only on price and commit to deliver on a fixed set of terms and conditions and, in other cases, have the ability to bid both the price and the terms and conditions. The

projects that are selected through the solicitation enter into bilateral agreements with the purchaser that can become the basis for financing.

Many states have established net metering programs to encourage on-site generation, including roof-top solar installations for residential or commercial customers. In these arrangements, the renewable project is located on or near the property of the end-user and supplies the end-user with power. The project may be owned by the end-user or by a third party which sells the power, at retail, to the end-user. The end-user is also (generally) connected to the local utility and takes supplemental and back-up power from the utility when the project is unable to meet its entire load and delivers power to the utility during the hours in which the project's output exceeds its load. Under some programs, the utility provides a credit for the excess energy, subject to a periodic true-up payment, and in other cases, it purchases the excess energy. The end-user's benefit is primarily the difference between the retail price it would have paid to the utility and its cost for the on-site renewable energy.

The US also has vibrant short-term sales markets. There are seven organized regional markets in which power may be sold, day-ahead and/or real-time, through a central market at a market-set clearing price or through bilateral transactions (although there are also large parts of the country which are not served by an organized market and where wholesale power sales are bilateral). Some of the organized regional markets also offer a market for capacity sales. Renewable generators may participate in these markets (subject to complying with applicable market rules) but practically speaking, renewable power projects do not rely on these short-term markets for the disposition of the majority of their energy and capacity. Short-term sales will not typically support financing for the project

and a market-clearing price (the price paid for sales into the organized markets) will not reflect the premium that green power receives in bilateral deals.

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

As explained above, the only federal minimum price guarantee is the avoided cost rate available to QFs under PURPA, and that rate is determined by the applicable state PUC. States cannot "guarantee" a wholesale price because they lack the ability to set rates, but practically speaking, a feed-in tariff (which functions as an offer to purchase) establishes a minimum offer price in the areas in which one is available, for those projects that qualify to sell their power pursuant to such a tariff.

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

The US signed the Kyoto Protocol on 12 November 1998, but never ratified it. Although the US Congress has periodically considered various nation-wide carbon credit programs, none have been enacted to date. The current regulation of carbon credits is thus administered on state and regional biases, with significant variations among the different programs.

The development of national carbon emission limitations is among the priorities of the current executive administration. The EPA has proposed national limits on the amount of carbon pollution that new power plants will be allowed to emit in the future, which is currently under consideration. In addition, in June 2014, the EPA issued the proposed Clean Power Plan targeting carbon emissions from existing power plants. The proposed plan, which is still under consideration, relies on

states to manage compliance and aims to cut carbon pollution from the power sector by 30 percent from 2005 levels. The EPA aims to issue final rules on carbon emission from both new and existing power plants in Summer 2015.

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

There is no federal priority. Like other generators seeking to connect to the interstate transmission grid, renewable power developers must apply for interconnection, and their request is handled in the same manner as other requests for interconnection, although some smaller facilities benefit from a streamlined process. However, many renewable generators connect at a distribution voltage, which may be regulated under state law, and the rules governing distribution voltage interconnections are varied.

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

A number of states have programs to attract and support industries that are engaged in manufacturing the components of renewable power plants. Often, these are tax-based programs, but some states offer grants and other forms of support.

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

The US Department of Energy may provide loan guarantees pursuant to Section 1703 of the Energy Policy Act of 2005 for innovative technologies. It periodically opens solicitations for new applications.

Section 1703 loan guarantees are available to projects that avoid, reduce or sequester air pollutants or anthropogenic emissions of greenhouse gases and employ new or significantly improved technologies as compared to commercial technologies in service in the US, including the following categories: biomass, hydrogen, solar, wind/hydropower, nuclear, advanced fossil energy coal, carbon sequestration practices/technologies, electricity delivery and energy reliability, alternative fuel vehicles, industrial energy efficiency projects, and pollution control equipment. The project must be located in the US, although foreign sponsors are eligible to apply.

A guarantee may not be issued for a loan whose principal exceeds 80% of the estimated project cost, and the maximum tenor of the underlying loan is 30 years.

STATISTICS

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

Data from the US Energy Information Administration for net electric generation from all sources shows that for 2014, approximately 13% of the electric generation in the US came from renewable resources, including hydroelectric (compared to 39% for coal, 27% for natural gas, 19% for nuclear, and 2% for petroleum and other resources). Of the 13% generated by renewable resources, the majority, approximately 47%, was from hydropower and 34% from wind. The other resources are biomass, 13%; geothermal, 3%; and solar, 3%.

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URUGUAY



Gonzalo Secco

FERRERE

GENERAL

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

Introduction

By the end of 2013 the total generation capacity from renewable sources in Uruguay was below 10% of the total system. One year later, that figure was close to 25% and it is expected to continue growing.

Since 2006, renewable energy has increasingly been acquiring importance in Uruguay. Ever since then, and mainly due to economic, environmental and technological reasons, the diversification of the energy matrix by means of the incorporation of non-traditional power generation has become a part of State policy, as defined by a cross-party commission.¹

In planning the country's energy policy, a strong commitment has been made to the incorporation of autochthonous renewable sources, such as wind power, biomass and solar energy.

The country will reach and exceed the targets set for 2015.

¹ From *Energía Eólica*. <http://www.icex.es/icex/cma/contentTypes/common/records/mostrarDocumento/?doc=4396805>.

The implementation of renewable source power plants has required logistical cooperation between local public entities, as well as the grant of certain guarantees to secure the required financing for projects, and the renegotiation of existing power purchase agreements.

Uruguay's Energy Outline

Traditionally, the main sources of energy generation in the country derived from petroleum and hydraulic power.

Uruguay is equipped with four hydraulic power stations (with a total installed capacity of 1,538 MW) and several thermal power stations (with a total installed capacity of 1,181 MW). A new combined cycle power plant is under construction with an installed capacity of 530MW.

In addition, 869 MW of renewable sources generation (mainly wind and biomass) have been installed by 2014.

This makes the following mix:

Hydro:	42.9%
Thermic	32.9%
Biomass	11.2%
Wind	13.0%

Note, however, that wind and solar generation are not able to generate 100% of the time.

Although hydraulic installed capacity is relatively high, during dry seasons, the generation of hydraulic power substantially diminishes and it becomes necessary to resort to thermal power stations operating with fossil fuel, a generation system which involves significant costs. Given these circumstances, during dry years the country is forced to import energy from neighboring countries (such as Argentina and Brazil), which is acquired at very high costs. For instance, the importation of electric power from Brazil and Argentina was necessary to cover the country's energy demand for almost every day during the first nine months of 2012.² The situation was quite different during 2014: imports were significantly lower and the generation was locally covered during most of the year, including some months were hydraulic and non-traditional renewable sources covered 100% of the demand without the need to dispatch the thermal power stations. The country's hydroelectric potential is almost completely exploited, the remainder being suitable only for small-sized projects. To date, there are no certified hydrocarbon deposits in the country (none are currently being exploited), and there are very few coal reserves; such reserves have low heating value and high ash content. Notwithstanding the foregoing, on-shore and off-shore exploration activities have been carried out since 2011, with, as a result, the award of ten blocks to seven private companies within the framework of Production Sharing Agreements. A significant commitment – of more than 1.5 billion US Dollars – has been made by the multinational companies awarded with these Production Sharing Agreements: BG Group, BP, Total and Tullow. However, the exploration phase will last at least some

additional years. A new round is expected to be launched in 2016, the year in which the initial exploratory perforation activities are estimated to begin.

For the aforementioned reasons, the Executive Branch has repeatedly expressed its interest in exploiting non-traditional renewable energies and has designed its energy guidelines with the aim of making the country energetically independent, all the while remaining regionally integrated and developing economically, environmentally and socially sustainable policies.

Uruguay's main renewable sources

By the end of 2015 Uruguay is expected to have an installed wind power generation capacity of 700MW and an installed solar photovoltaic generation capacity of 100MW. An additional similar capacity for each of both sources is expected by the end of 2017. Considering that the peak of demand is below 2,000MW, this is considered to be an excellent outcome of the public policy developed to foster renewable power generation in the country.

(a) Hydroelectric

As mentioned above, Uruguay's hydroelectric potential has almost been completely exploited. The remaining capacity is only suitable for small-sized projects. Although technical, legal and tax incentives have been granted with the objective of fostering private generation, to date, there are no mini-hydroelectric power plants connected to the national grid.

The country has four hydroelectric power plants, with a total installed capacity of 1,538 MW. According to a study carried out by the Ministry of Energy, Energy and Mining ("MIEM") together with the United Nations Industrial Development Organization ("UNIDO") in 2010, the remaining potential for the installation of mini-hydroelectric power plants below 10 MW (considering the best

² From *Electric Market Administration*: <http://www.adme.com.uy/mmee/infmensualDetalle.php?anio=2012>.

50 sites) is of 101 MW; and the remaining potential for the installation of mini-hydroelectric power plants below 15 MW (considering the best 50 sites) is of 176 MW.³

(b) Wind Power

Uruguay has favorable natural conditions for the generation of electricity by means of wind power. Wind measurements have been taken throughout the national territory and the results have been made available on a wind map prepared by governmental authorities and Uruguay's University of the Republic. Measurements obtained from sites all over the country - managed by UTE - have confirmed the availability of the resource in Uruguay.

At present, Uruguay has fifteen wind farms operating within national territory, totalling an installed capacity of 350 MW approx. Two times this installed capacity is expected by the end of 2015, and four times this capacity is expected by the end of 2017.

Most of the existing wind farms are private ventures and the electricity produced therein is sold to the Public Electric Utility Company ("UTE") within the framework of Power Purchase Agreements ("PA" or "PPAs") entered into by UTE with the above-mentioned private producers.

The remaining projects are property of UTE.

There are also a few small-sized wind projects for industrial self-supply.

The PPAs with UTE were awarded in the context of public procurement procedures promoted by UTE in the execution of general policies designed by MIEM and the Executive Branch.

The first three PPAs, for a total capacity of 150 MW, were awarded in 2011 at a price of approximately 90 US Dollars/MWh. All the rest were awarded at a price of approximately 63.50 US Dollars/MWh.

These prices are adjusted periodically in accordance with a formula based on local inflation and the United States' Producer Price Index.

UTE also developed its own projects under different schemes. There are two projects for a total capacity of 87MW owned by UTE, there is one project for 70MW being built under an unusual "leasing" business model with one private supplier and there is one 50MW project co-developed with Brazilian Eletrobras. On top of this, UTE has developed three additional projects for a total capacity of 270MW where the equity is partially retained by UTE and partially traded in the local stock market for institutional investors and also retail investors.

In April 2012, MIEM passed a regulation instructing UTE to foster the execution of PPAs with industrial consumers by virtue of which such industrial consumers may install WTG producing power for their own consumption, but with a possibility of selling surpluses to UTE, at a pre-agreed price, in the context of PPA. This business model has not attracted the interest of industrial companies so far.

A detailed explanation of existing and projected wind ventures can be found at: <http://www.adme.com.uy/agentes/generadores.php>.

Additional information about the Uruguayan wind program can be found at: www.energiaveolica.gub.uy.

³ From MIEM: <http://www.miem.gub.uy/gxpsites/bgxpp001?5,6,539,0,S,0,MNU;E;94;2;95;7;MNU>.

(c) Biomass

Biomass is a natural resource which is being gradually incorporated into Uruguay's energy matrix. According to an official report developed by MIEM together with the UNIDO, Uruguay has a biomass-source related generating potential deriving from the waste of sawmills, fields' waste related to agro-industrial endeavours, and black-liquor of pulp mills.⁴

To date, there is an installed generation capacity of 236 MW.

Near the end of 2010, national authorities issued Decree No. 367/010 establishing the general conditions for contracts to be entered into with private generators of electric energy from biomass for plants of up to 20 MW each. A similar scheme was organized for projects with an installed capacity between 20 and 60MW.

These special regimes provided for different prices for available energy and energy effectively summoned, and an obligation of UTE to purchase all the authorized generated energy for a period of up to 20 years, among other preferential conditions.

Within this framework, the government estimated that an additional 200 MW of biomass generation capacity would be incorporated by the year 2015. However, the results of the public tenders bid launched were below the expectations and a few projects are in the pipeline today.

(d) Solar

Authorities have been actively trying to promote solar photovoltaic generation projects

ever since 2009 and, finally, a few mid-size photovoltaic projects will enter into operation by the end of 2015 (120MW approx.).

Law No. 18,585 endorses the generation of thermal solar energy. This law stipulates that construction permits for health centres, hotels and sports clubs whose hot water consumption exceeds 20% of its total energy consumption, must construct and install facilities aimed at the future incorporation of solar equipment for the purpose of heating water.

By 2011, the only permits granted for such constructions were those whose design included solar equipment producing 50% of their estimated heated water use. Since 2012, these requirements have been extended to new or old heated pools.

In March 2012, the Executive Branch launched a solar plan targeted at the residential sector, which represents 21% of the country's total energy consumption and 40% of electricity consumption, to promote the use of solar thermal energy. MIEM estimates that families implementing solar equipment in the context of this plan will be able to save from 60% to 70% of their energy consumption related to water heating.

The solar plan is intended to bring down the existing barriers to the incorporation of residential solar panels: (i) high initial investments; and (ii) disbelief regarding its actual benefits. In relation to the first barrier, the government has arranged financing to be provided by the National Mortgage Bank ("BHU") of up to 60 instalments (five years) for the purchase of necessary equipment, and will also be granting 'efficiency bonds' to families who subscribe to the plan, which will be deducted from monthly electricity bills. In regard to the second barrier, the government has promoted the use of solar energy by means of media campaigns.

⁴ From MIEM: <http://www.miem.gub.uy/gxpsites/bgxpp001?5,6,295,0,S,0,MNU;E;94;2;95;1;MNU>.

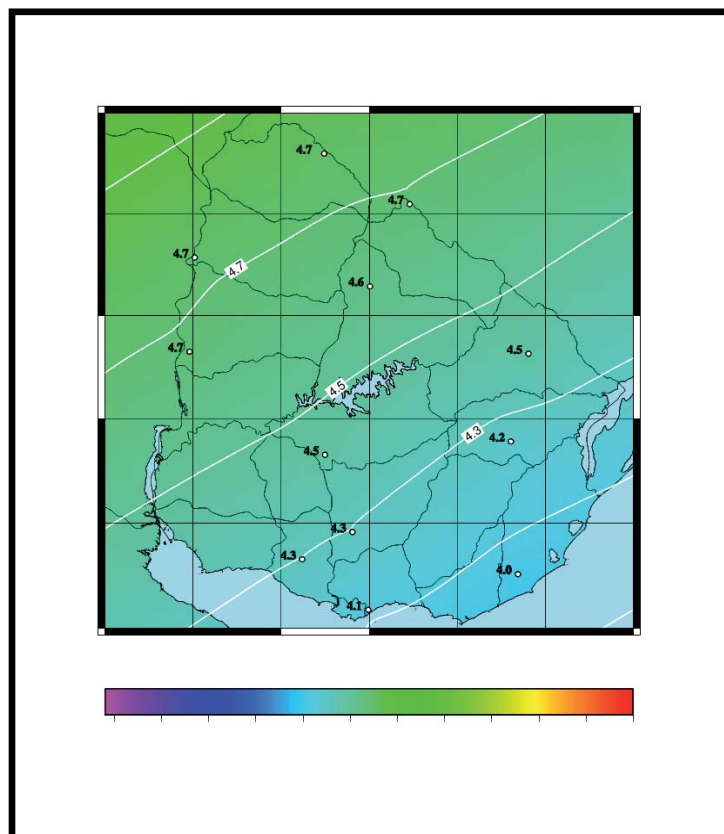
In May 2013 MIEM issued new regulations to promote photovoltaic power generation. As for the case of wind generation, interested parties will enter into long term PPAs with UTE at a fixed price. UTE may contract providers who offer energy from photovoltaic source between 500 kW and 50 MW.

The bid was organized in three bands: (a) plants between 500 kW and 1 MW; (b) plants between 1 MW and 5 MW; and (c) plants between 5 MW and 50 MW, for a total maximum of 200 MW.

A maximum price of 91.5 US Dollars/MWh shall be paid for band (c) plants available before December 2014, gradually decreasing to 86.6 US Dollars/MWh for plants available until December 2015. The contract term in this case will be between 20 and 30 years. UTE has awarded several projects for about a total of 180 MWh and part of these are expected to enter into commercial operation by the end of 2015.

Additional information about the Uruguayan solar program can be found at: www.energiasolar.gub.uy.

A survey of the solar resource is shown below.



(Source: Solar Map prepared by the Ministry of Industry, Energy and Mining <http://www.miem.gub.uy>)

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

Over the past years, Uruguay has developed a legal framework aimed at encouraging and providing benefits for power generation from renewable sources.

National regulations do not provide a general definition of renewable energy. However, for the purposes of Law No. 18,597 (“Energy Efficiency Act”) ‘non-traditional renewable sources’ have been defined as “[...] *autochthonous energy renewable sources, such as wind power, thermal solar, photovoltaic, geothermal and tidal energy, and that deriving from the use of different sources of biomass*”.

The purpose of the Energy Efficiency Act is to lay the foundations for the promotion of an efficient use of energy. In the context of this law, renewable energies play a key role since the ‘efficient use of energy’ is understood as “*all changes resulting in an economically feasible decline of the amount of energy required to produce a product unit or to meet energy requirements of the services used by people [...] It is likewise considered an efficient use of energy the substitution of traditional energy sources for unconventional renewable energy sources which enable the diversification of the energy matrix and the reduction of greenhouse gas emissions, by end users*”.

In order to achieve the objectives set out in the Energy Efficiency Act, MIEM was entrusted with the task of outlining the ‘National Energy Efficiency Plan’, which is revised every 5 years and provides guidelines for the implementation and encouragement of the use of renewable energy sources.

REGULATIONS

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

Electricity Regulatory Framework

Uruguay’s electricity regulatory framework has been outlined by the following rules: Law No. 14,694 (*National Electricity Law - 1977*), Law No. 15,031 (*UTE’s Organic Law - 1980*), Law No. 16,211 (*Public Enterprises Law - 1991*), and Law No. 16,832 (*Electricity’s Regulatory Framework Law - 1997*).

The aforementioned regulations divide the electricity industry into two regimes: (a) public electric services; and (b) private electric activities.

(a) Public electric services:

The activities of transmission, transformation and distribution are considered public services as long as they are wholly or partially provided to third parties on a regular and permanent basis. Private parties may provide these services only if granted a concession by UTE. In the absence of such a concession, these activities will be directly performed by UTE.

(b) Electric private activities:

Generation is considered a free activity (which does not require concession) provided it is executed for: (i) the generator’s use (self-supply); or (ii) for sale to UTE, big consumers, and to the public in general if sold through the National Load Dispatching Office.

Promulgation of Law No. 16,832 brought about the creation of a Wholesale Electric Energy Market (‘MMEE’ after its name in Spanish) and the establishment of the principles of *free access* and *no discrimination* of agents with respect to the capacity of the electrical transmission systems.

Within this framework, private producers may:

- enter into PPAs with distributors (to date, distribution services are provided exclusively by UTE) and big consumers;
- sell energy in the spot market. This market has been defined by article 7 of Decree No. 276/002 as being: *“the sphere within which short-term energy transactions are completed with the purpose of balancing surplus and shortages in the system, which occur as a result of dispatch, contractual commitments and actual power demand.”*; and
- export electricity.

Private generation

Decree No. 77/006, issued in March 2006, was the first specific regulation passed with the purpose of securing the incorporation of private generation of electricity from renewable sources. Through this decree, the Executive Branch instructed UTE to foster the execution of PPAs with suppliers established within Uruguayan territory and producing energy by means of wind, biomass sources, or small hydraulic power plants.

This decree was issued with the purpose of:

- diversifying the national energy matrix, diminishing dependence on traditional energy sources;
- employing autochthonous resources, reducing the need of resorting to foreign supply sources;
- promoting the development of local manufacturing;
- contributing to the preservation of the environment by the reduction of emissions;

- taking specific measures for the incorporation of wind energy, biomass and mini hydro sources, as an integral part of the National Energy Policy promoted by the Executive Branch; and
- supporting the installation of small independent power producers by means of long-term PPA's with UTE.

Along the same lines, Decree No. 173/010, issued in June 2010, brought about a great progress in the field of micro generation.

The objective of this decree is to diversify power generation, both in terms of primary sources and in terms of supplier agents by allowing the interconnection of 'micro power producers' to the low voltage distribution network.

In this sense, this regulation allows consumers of the distribution network to use electric generators of renewable energy (wind, solar, biomass or mini hydraulic) and inject the remainder of the energy not used by them into the low voltage network. Under this regime, micro power producers shall enter into interconnection agreements with UTE which will allow the bidirectional transfer of electricity between them for a period of 10 years.⁵

Main laws and regulations on renewable energy

- Decree No. 389/005, issued in October 2005. Instructs UTE to foster the execution of PPAs with private generators having an installed capacity of up to 5MW each, and for a total capacity of up to 50MW;
- Decree No. 77/006, issued in March 2006. Instructs UTE to foster the execution of PPAs to purchase up to 60 MW of

⁵ From *Miem.* <http://www.miem.gub.uy/gxpsites/hgxpp001?5,6,554,O,S,0,MNU;E;94;2;95;8;MNU>.

electricity deriving from wind power, biomass and mini-hydro sources. This decree was later complemented by Decrees No. 397/997, 296/008 and 299/008;

- Law No. 18,046, passed in October 2006. Allows UTE to purchase electricity from power suppliers by means of direct agreements;
- Law No. 18,195, passed in October 2006. Regulates the production, commercialization and use of agro fuels;
- Law No. 18,362, passed in October 2008. Regulates easements granted in favor of wind-source electricity power producers;
- Law No. 18,585, passed in September 2009. Regulates and declares as of national interest the research, development and education in the use of solar thermal energy;
- Decree No. 258/009, issued in June 2009. Instruments the ‘Wind Map’, providing wind speed measurements within national territory;
- Decree No. 354/009, issued in August 2009. Introduces tax exemptions for the generation of renewable energy, in some cases of up to 90%;
- Decree No. 403/009, issued in September 2009. Instructs UTE to foster the execution of PPAs to purchase up to 150 MW of electricity deriving from wind power. This regulation was complemented by Decree No. 41/010, issued in February 2010;
- Law No. 18,597, passed in September 2009. Declares the production of renewable energy as of national interest. This law entrusts MIEM with the drafting of a national plan for the efficient use of power. It also introduces mechanisms to provide finance for those who use power in an efficient manner and regulates the grant of ‘*certificates of efficiency*’ to certain projects which further the purpose of the law;
- Decree No. 173/010, issued in June 2010. Authorizes subscribers connected to the low voltage network to install renewable generation from wind, solar, biomass or mini hydraulic and use this energy for their own needs or sell it to UTE;
- Decree No. 367/010, issued in December 2010. Instructs UTE to execute (PPAs) with electricity suppliers producing in national territory from biomass source;
- Decree No. 159/011, issued in May 2011. Complements Decree No. 403/009, calling for a new round of wind power energy (additional 150MW to complete 300 MW together with PPAs signed in the context of Decree 403/009), through the execution of PPAs with private producers;
- Decree No. 424/011, issued in December 2011. Instructs UTE to foster the execution of direct agreements with all such bidders that, having submitted offers in the context of Decree No. 159/011, had not resulted awarded. Bidding rounds organized under Decrees 403/009, 159/011 and 424/011 resulted in the execution of PPAs between UITE and private producers for a total capacity of approximately 1 GW;
- Decree No. 451/011, issued in December 2011. Establishes the regulatory framework for thermal solar equipment;
- Decree No. 50/012, issued in February 2012. Instructs UTE to coordinate the implementation of the ‘Solar Plan’, intended to promote residential use of thermal solar energy;

- Decree No. 158/012, issued in May 2012. Instructs UTE to foster the execution of PPAs with industrial consumers producing electricity through wind power. As per this regulation, UTE will purchase the remainders of the electricity not consumed by industrial self-suppliers;
- Decree No. 113/013, issued in April 2013. Photovoltaic farms are declared to have a null variable unitary cost;
- Decree No. 133/013, issued in May 2013. Instructs UTE to foster the execution of PPAs to purchase up to 200 MW of electricity deriving from solar photovoltaic wind power through public procurement procedures;
- Decree No. 205/013, issued in July 2013. Regulates easements benefitting high tension line facilities.
- Decree No. 59/015, issued in February 2015. Clarifies the criteria that will apply for the calculation and payment of the power that the solar and wind power plants with PPAs signed with UTE cannot deliver to the system because of operational restrictions. This power will be paid at the same price agreed under each PPA.

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

MIEM (Ministry of Industry, Energy and Mining) and DNE (National Energy Directorate). This Ministry is part of the Executive Branch. Through the DNE, MIEM's main role is to design, conduct and evaluate the policies on electric power issues. It is also in charge of the regulation and coordination of the activities of the other relevant participants.

National energy companies. *ANCAP* (Fuel, Alcohol and Portland National Administration) and *UTE* (Power Stations and Electric Transmissions National Administration). These companies are relevant instruments in the execution of energy policies designed by the Executive Branch.

However, UTE is the only relevant agency in the renewable energy sector. ANCAP is the company in charge of exploiting and administrating the monopoly on alcohol and national fuel, and on the importation, refining and commercialization of oil and oil products and the manufacturing of portland and cement.

URSEA (Energy and Water Services Regulatory Agency). This is the energy services' regulator, created by Law No. 17,598. It was created with the purpose of protecting consumers' rights, controlling compliance with applicable regulations and ensuring that the regulated services have an adequate level of quality and security at a reasonable price. As an independent regulator, it is its responsibility to promote competition in industrial sectors where it is authorized by law and to regulate monopolies, setting minimum quality standards and proposing prices based on efficient costs.

ADME (Electricity Market National Administration). This body operates the National Load Dispatching Office (DNC). Its main role is to administrate the wholesale market for electricity.

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

In general terms, the main permits required are, as follows:

(a) *Generation Permit*

The interconnection of a new power producer to the national grid will require an authorization from the Executive Branch, subject to the prior control exerted by MIEM

and URSEA. The generation permit can be revoked upon material breach of the power supplier's obligations under the general framework or the terms of the permit, including delays in the start-up of the project beyond six months as from the date of issuance of the permit.

(b) Registration of the PPA with URSEA

In the case of PPAs providing for a specific term (as opposed to sales into the spot market), the PPAs must be registered with URSEA.

(c) Approval from municipal authorities

In general terms, pursuant to article 39 of Law No. 18,308 dated 18 June 2008 and article 210 of Law No. 18,719, renewable source generation may be developed in rural plots.

Under Law No. 18,308, Municipalities are required to issue land management plans and policies covering the territories under their jurisdiction. Such land management plans may include provisions referring to the localization of renewable projects. Generation projects also require the municipal authorities' previous permit to carry on the construction works.

(d) Environmental Permits

According to national regulations, power plants with a projected installed capacity of over 10 MW are required to obtain the following authorizations from the Ministry of Housing, Land Planning and Environment ("MVOTMA"):

- Environmental Location Viability Declaration, by means of which MVOTMA approves the projected location of the power plant;
- Prior Environmental Authorization, required prior to construction start-up; and

- Operation Environmental Authorization, required prior to project operation.

High tension lines of 150 kv or more also require the aforementioned environmental permits.

(e) Authorization from the Electricity Market National Administration

Power projects are required to obtain an authorization in order to integrate the MMEE, by means of which ADME authorizes the incorporation of the new power producer to the market.

(f) Other permits

Other permits may be required depending on the particularities of each project; for instance, regarding wind farms: authorization from the National Directorate of Civil Aviation and Aeronautic Infrastructure (DINACIA) regarding the location of the WTG, and authorization from the applicable transport authorities regarding the transportation of major components through national roads or bridges.

6. Is there a category of "license-exempt generation"? If so, does it cover some types of renewable energy based generation?

No, there is not.

INCENTIVES

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

The Investment Protection and Promotion Act, number 16,906, provides an incentive framework for investments in the country.

Investment projects must be submitted before a commission of the Ministry of Economy and Finance.

This general rule provides tax exemption for income tax, net worth tax, importation taxes and duties for certain goods, among others.

In particular, certain activities related to renewable energies are especially promoted by a complementary regime created by Decree No. 354/009. This regime focuses on the granting of income tax exemptions as follows:

- 90% of taxable net income between 7/1/09 and 12/31/17;
- 60% between 1/1/18 and el 12/31/20; and
- 40% between 1/1/21 and 12/31/23.

The following activities are exempt under Decree No. 354/009:

- The generation of electricity from non-traditional renewable sources;
- The generation of electricity through co-generation;
- The production of energy from renewable sources;
- The transformation of solar energy into thermal energy.

Additionally, Law No. 18,597 provides that the Executive Branch must ensure that the tax structure promotes the sustainable and efficient use of energy resources.

8. 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. Recent Decree No. 59/015, issued in February 2015, clarified the criteria that will apply for the calculation and payment of the power that the solar and wind power plants with PPAs signed with UTE cannot deliver to the system because of operational restrictions. This power will be paid at the same price agreed under each PPA.

Another issue to take into consideration is that the unitary cost of renewable energies is comparatively much lower than that of hydrocarbon source. Since the spot market is organized following unitary costs of the offered energy at any given time, renewable energies must always be demanded with preference to the more expensive ones.

Regarding wind and solar photovoltaic generation, applicable rules have established a unitary cost of zero for long term contracts with UTE, therefore confirming the above.

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

No. However, as mentioned above, UTE has executed agreements where a fix price in US dollars (annually adjusted) is established. As a consequence, a minimum price has been guaranteed within the context of such agreements.

These prices are higher than the price in consideration of which UTE sells electricity to large consumers, but lower than the average price paid in the spot market.

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

Uruguay was one of the first countries to ratify the Kyoto Protocol, through the passing of Law No. 17,279 in November 2000.

However, the number of projects submitted in Uruguay is relatively low in comparison with other Latin American countries. Notwithstanding this, about 30 projects have been approved by MVOTMA, most of which are related to the implementation of renewable energy generation.⁶²

The stages involved in the obtainment of Emission Reduction Certificates are, as follows:

- Identification and design of the project;
- Approval by MVOTMA;
- Validation by a designated operational entity;
- Registration with the Executive Board of the CDM;
- Monitoring of the approved project;
- Verification and certification by a designated operational entity; and
- Issuance of Emission Reduction Certificates.

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

There are no specific preferences in terms of connection of power plants to the national grid.

The available capacity of transmission lines could pose a limitation in certain portions of the national grid if more than one project were to compete for access. However, said competition is likely to occur between two renewable-source projects, rather than a traditional versus a renewable source project.

⁶² <http://www.aacid.org.uy/wp-content/uploads/2014/04/Informe-Medio-Ambiente-y-Energ%C3%ADa;-en-Uruguay.pdf>

It should be noted that all private projects are required to bear the costs associated with their connection to the national grid.

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

Yes. Decree No. 354/009 expressly sets out tax benefits for the national manufacturing of machinery and equipment used for the generation of electric power from non-traditional renewable sources, the generation of electricity through co-generation, the production of energy from renewable sources and the transformation of solar energy into thermal energy.

Along the same lines, Decree No. 451/011 provides that local manufacturers of solar equipment required for the implementation of the Solar Plan shall be exempted from VAT.

There are also tax benefits for the conversion of equipment and/or for the incorporation of processes which promote the efficient use of energy as well as for services rendered by energy service companies.

Additionally, rules regulating tenders called by UTE for the purchase of electricity produced from a non-traditional renewable source by generators located in the national territory provide that investment components of national origin are to be given preference when awarding the bids.

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

Uruguay is a member of the Kyoto Protocol as a developing country. This means that when carrying out activities which reduce the emission of greenhouse gasses such as the

production of renewable energies, Emission Reduction Certificates can be issued and then commercialized to industrialized countries.

The acquisition of Emission Reduction Certificates within the scope of the Clean Development Mechanism is another important incentive to the production of renewable energy.

According to the bidding conditions of UTE's tenders, the power producer must obtain Emission Reduction Certificates. Their commercialization is to the benefit of the power producer.

STATISTICS

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

During 2014 the demand was supplied through the following sources:

Hydro: 81.7%

Renewables: 13.2%

Thermic: 5.1%

These figures show a significant variation in the supply of the electricity demand in respect of the prior year mainly because of the incidence of a rainy year and the growing renewables. The increase of the renewables will become more significant in the coming years.

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