



GLOBAL RENEWABLE ENERGY Guide

2016

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FOREWORD

ÇAKMAK PUBLISHING is pleased to publish this 2016 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 26 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 26 jurisdictions explored:

- Most of the countries, 16 out of 26, have an independent regulatory authority to supervise and regulate the electricity sector, including renewable energies, while the remaining 10 countries opt for regulation of the electricity sector by a Ministry.
- Most of the countries, 21 out of 26, 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, 18 out of 26.
- The ratio of ensuring a minimum price for the electricity generated by renewable energy companies is high as well (19 countries out of 26 countries).
- In 18 out of the 26 countries, priority for connection to and/or usage of the transmission and/or distribution system is provided for renewable energy companies.
- 10 out of the 26 countries provide for additional incentives for the domestic manufacturing of equipment and materials.

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

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Ankara, September 2016

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GENERAL

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

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

This is clearly demonstrated at the legislative level. 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" (hereinafter – the "Directive No. 3") among the most important criteria for performance evaluation in state organizations assigns rates of resources economy, increase of local, alternative and RES use.

Resolution of the Council of Ministers of the Republic of Belarus of 25.04.2016 N 336 On Approval of the Plan for Action for the Implementation of the Directive No. 3 stipulates the main measures to be taken and the main events to be organized in order to promote and increase the use of RES, such as *inter alia* implementation of innovative projects on the use of renewable energy, establishment of energy research statement schedules and etc.

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-year programs related to renewable energy sources use development.

Main directions of the RES development in Belarus for 2016-2020 are set in Republican Energy Saving Program for 2016-2020, approved by Resolution of Council of Ministers of 28.03.2016 N 248 (hereinafter – the "Program").

In the sphere of RES the Program stipulates the usage of wood fuel, energy of wind, solar, water and geothermal energy. The main focus is made in usage of wood fuel.

The Program stipulates directions of further RES development as follows:

- creation of energy sources using local energy resources (wood and peat fuel, combustible waste), with the heat capacity of about 680 MW;
- expansion of the production and use of new fuels produced from biomass, including by introducing biomass gasification technologies - wood fuel;
- increase the use of peat fuel in cement plants;
- the creation of biogas plants in wastewater treatment plants and landfills of disposal of solid waste by agricultural organizations engaged in the production of cattle, pigs and poultry, with the total electrical capacity of at least 30 MW;
- increase in production of electricity and heat due to the use of energy of natural water flows, wind and sun.

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

2. What are the definition and coverage of 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.

Belarusian legislation uses the term “renewable energy sources”, which is defined in the Law of the Republic of Belarus dated 27 December 2010 No. 204-Z “On renewable energy sources”. The renewable energy sources are defined as 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 non-renewable ones.

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?

The key legal act in the sphere of RES is 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 07.08.2015 No. 45.

Regulation of the Council of Ministers dated 7 June 2013 No.465 and Regulation of the State Committee for Standardization dated 15 August 2014 No.37 regulate the question of the labeling imported goods as equipment used for producing energy from renewable energy sources, as well as the procedure for issuing such a conclusion is regulated by the Regulation of 15.08.2014 No. 37.

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

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 and issuance of certificate on the origin of energy (see Clause 5).

Tax benefits regarding energy generation from RES 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”) entered into force which made 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 is 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 is not 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).

Regulation of the Council of Ministers of the Republic of Belarus of 06.08.2015 N 662 “On the establishment and allocation of quotas for the establishment renewable energy power plants”, which was adopted pursuing to the Edict N 209, prescribes the abovementioned procedure for allocation of quotas for creation of renewable energy power plants.

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.

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 is available on the official web-site of Ministry on Natural Resources and Environment (link: http://www.minpriroda.gov.by/ru/new_url_19948904-ru/).

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.
- It should be noted that in some cases

creation of RES facilities is carried out within quotas. Quotas are established annually by 30th April. The allocation of quotas is governed by the Regulation of the Council of Ministers of the Republic of Belarus of 06.08.2015 N 662 "On the establishment and allocation of quotas for the establishment renewable energy power plants". At the same time, in particular cases the creation of RES facilities is carried out without allocation of quotas (e.g. in case of conclusion of investment agreement).

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 (as amended on 30.12.2015) there are a number of tax advantages available to renewable energy generation companies:

- i. 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.

ii. land occupied by objects, plants and equipment involved in the production or reception (receiving), transformation, accumulation, and (or) transfer of electric energy produced by renewable energy sources, land occupied by the reservoir, used for power generation by hydroelectric power plants, as well as land, granted for the period of construction (reconstruction) of abovementioned assets (article 194).

iii. 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 depending on term of operation.

The amounts of the ratios for electricity produced from the RES are established by the Regulation of the Ministry of Economy of the Republic of Belarus of 07.08.2015 No. 45. As for today the ratios for the energy produced by the power plants depends on the date when RES facility was set in operation.

For RES facilities which were set in operation before 20.05.2015 or constructed under the investment agreement concluded before that date the ratios are as follows:

	Multiplying ratios (first 10 years)	Stimulating ratios (after 10 years)	After 20 years
Wind energy	1.3	0.85	0.45
Natural water flows	1.1	0.85	0.45
Wood fuel and other biomass	1.3	0.85	0.6
Biogas	1.3	0.85	0.6
Sun	2.7	0.85	0.45
Geothermal and other energy sources not belonging to non-renewable	1.3	0.85	0.45

For RES facilities which were set in operation within the period 21.05.2015-20.08.2015 or created after 20.08.2015 within provided quotas the ratios are as follows:

	Multiplying ratios (first 10 years)	Stimulating ratios (after 10 years)	After 20 years
Wind energy	1,2-1,05	0,75	0.45
Natural water flows	1,2-1,1	0,75	0.45
Wood fuel and other biomass	1,3-1,2	0,85	0.6
Biogas	1,3-1,2	0,85	0.45
Sun	2,5-2,1	0,75	0.45
Geothermal and other energy sources not belonging to non-renewable	1,2-1,1	0,75	0.45

If RES Facility was created solely for energy supply of business activity of legal entities and individual entrepreneurs beyond the procedure of allocation of quotas (see Clause 3) and was set in operation after 20 August 2015, than multiplying ratio for any type of energy is 0,7; stimulating ratio after 10 years is 0,6 and after 20 years of operation ratio is 0.45. 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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

On 22 April 2016 the Republic of Belarus has signed the Paris Agreement, but has not ratified it yet.

There are two mechanisms for operation of carbon market or carbon credits in Belarusian legislation:

1. Joint Implementation Mechanism (hereinafter – the “JIM”) and Clean Development Mechanism (hereinafter – the “CDM”);
2. Mechanism for Voluntary Emission Reduction.

The first mechanism is designed in accordance with the Kyoto Protocol, operates at a state level and is regulated by Resolution of the Council of Ministers of the Republic of Belarus of 05.09.2006 N 1144 “On Approval of the Order of Presentation, Review and Monitoring of Joint Implementation Projects”; Resolution of the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus of the environment of

01.02.2007 N 10 “On Measures for Implementation of the Resolution of the Council of Ministers of the Republic of Belarus of 05.09.2006 N 1144”; Resolution of the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus of 22.01.2007 N 4 “On Approval of Regulation on the Procedure for the Formation and Maintenance of the National Register of Carbon Units of the Republic of Belarus”.

However as long as Belarus (as a new participant of the Kyoto Protocol) was not ratified by all other participants, today it is still not a participant of the Annex B to the Kyoto Protocol. Therefore the deals with carbon credits under international climate agreements may not been made by Belarus.

The second mechanism is regulated by the Resolution of the Council of Ministers of the Republic of Belarus of 14.04.2009 N 466 “On the Order of Presentation, Review and Monitoring of Projects on the Voluntary Reduction of Greenhouse Gas Emissions” and the Edict of the President of the Republic of Belarus dated 08.12.2010 No. 625 “On some issues of reduction of greenhouse gases” (hereinafter – the “Edict N 625”). Edict N 625 provides with the possibility to make paid transfer of reduction of greenhouse gases emission to the foreign investor by Belarusian legal entities. This mechanism does not fall within the framework of international climate agreements, thus its operation is possible. However, currently the abovementioned Edict is not used in practice. It is believed that possible reason for that is lack of detailed regulation of such carbon deals in legislation, including the regulation of the provision of incentives to the investors.

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?

The official statistics on the general value of the generated renewable energy in Belarus is provided by the Program.

According to the Program the share of electricity generated from hydro, wind and solar power plants in 2010 was 0.1 per cent of electricity production in 2014 - 0.7 percent.

As of 01.12.2015 in the Republic of Belarus there are (please see the table below):

17 biogas plants with total electrical capacity of about 22.7 MW;

51 hydroelectric power stations with a total installed electrical capacity of about 34.6 MW;

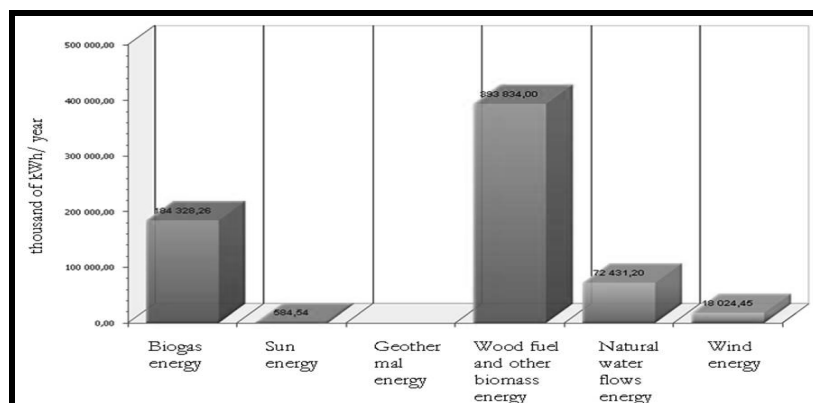
50 wind power plants with total electric installed capacity of about 29 MW;

118 heat pumps with total heat capacity of about 10 MW;

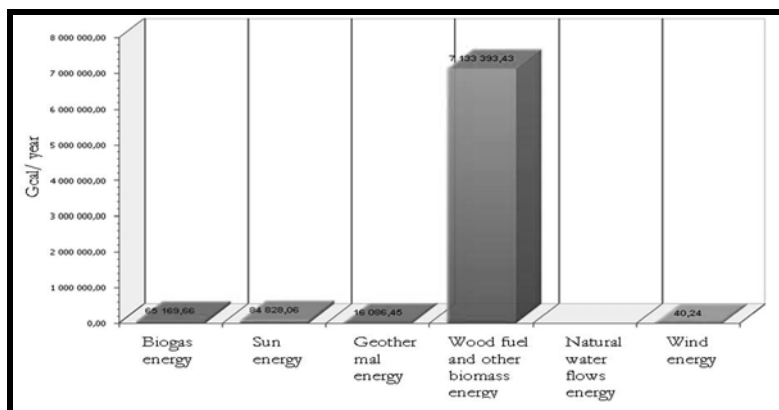
29 photovoltaic plants with total electrical capacity of about 12.8 MW;

287 sun heating installations total heat capacity of about 3.9 MW.

ELECTRIC ENERGY THAT MAY BE PRODUCED FROM RENEWABLE ENERGY SOURCES

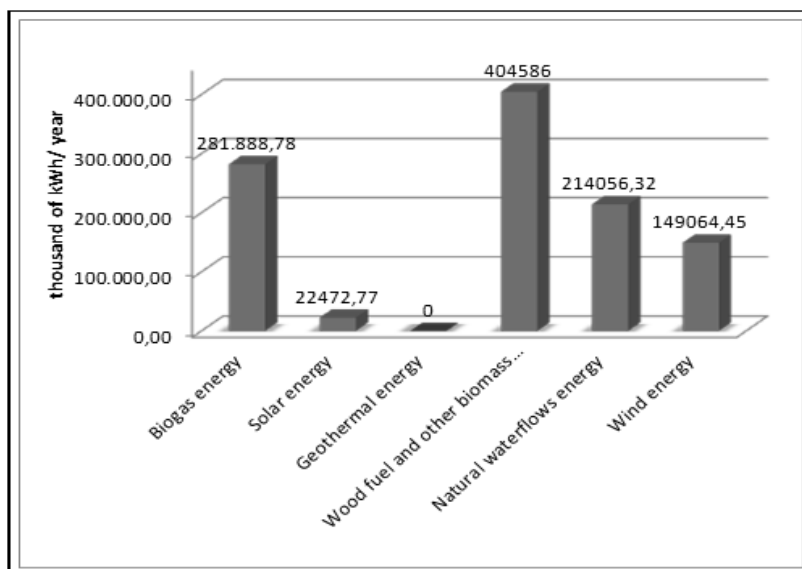


HEAT ENERGY THAT MAY BE PRODUCED FROM RENEWABLE ENERGY SOURCES

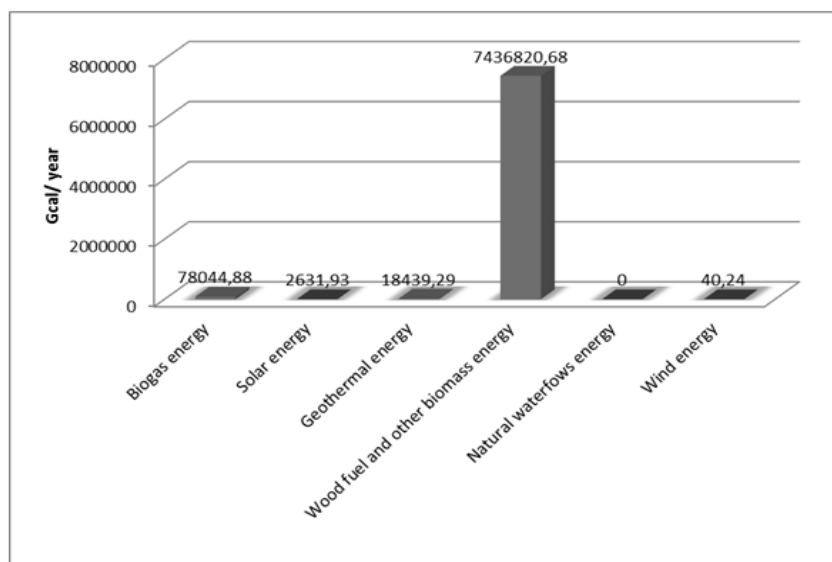


Please find below tables with the maximum quantity of electric energy and heat energy that may be produced from RES in Belarus as of May 2016. The quantity is specified based on the largest ratio of installed capacity use.

ELECTRIC ENERGY THAT MAY BE PRODUCED FROM RENEWABLE ENERGY SOURCES



HEAT ENERGY THAT MAY BE PRODUCED FROM RENEWABLE ENERGY SOURCES



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BOSNIA & HERZEGOVINA



Nusmir Huskic

HUSKIĆ LAW OFFICE

GENERAL

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

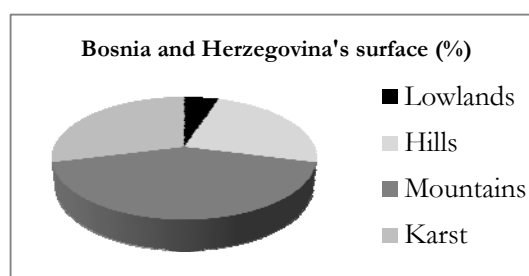
In order to understand the nature and importance of renewable energy in Bosnia and Herzegovina it is essential to present and comprehend the current political and geographical situation in country.

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

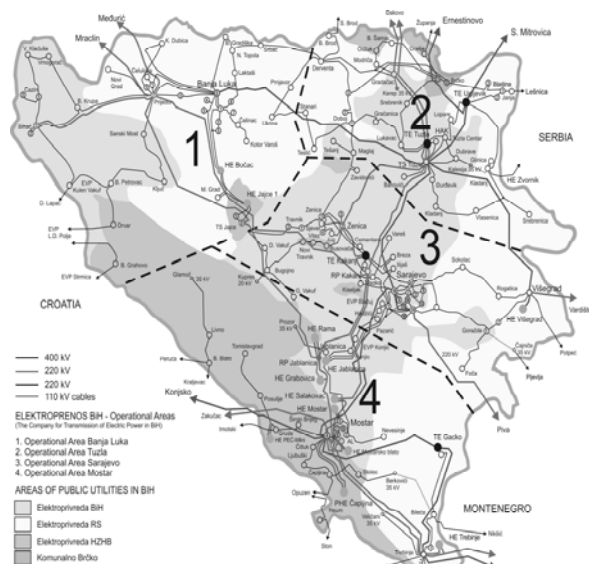
Geographical position of Bosnia and Herzegovina is quite interesting and fruitful for many projects, including renewable energy sector. It is a hilly and mountainous country. Of the total surface are, 5% are lowlands, 24% hills, 42% mountains and 29% karst.



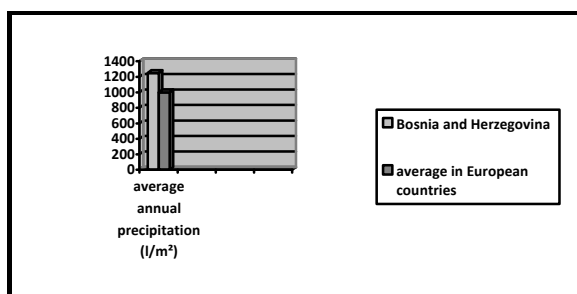
Forests and forestlands cover about 50% of the territory. The total agricultural land covers 2.5 million hectares or 0.7 hectares per capita. Bosnia and Herzegovina possesses significant water resources (average annual precipitation on the territory of Bosnia and Herzegovina is 1250 l/m², which is some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

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

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.



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

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

2. What are 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., whereby, electricity generated from the renewable energy sources, is defined as:

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.

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

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

The FBiH has the Law on Electricity (Official Gazette of FBiH 66/13) 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 Gazette RS 86/07, 121/12);
- Law on Oil and Derivate (Official Gazette RS 36/09, 121/12,);
- The law on renewable energy sources and efficient co-generation ("RS Official Gazette", number 39/13, 108/13)

Brčko District:

- Law on Electricity (Official Guzzetti 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 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.

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 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 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.

- 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;

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.

- 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 gas and electricity prices charged to industrial end-users;
- 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.

⁷ Available at "www.derk.ba".

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

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 co-generation with a high level of efficiency and it necessarily contains the amount of electricity, energy source which was used for its generation, place and date of generation as well as other data which contribute to the accuracy and reliability of the document;
- Certificate (declaration) for generation installation - the document which is issued

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

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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

The Paris Agreement under the United Nations Framework Convention on Climate Change was signed in April 2016 and is not so far ratified but it is assumed that the ratification will follow by the end of 2016.

There is no relevant legislation in relation to carbon market or carbon credits mechanism.

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 are the nature and importance of the 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-fueled 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 economic 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.

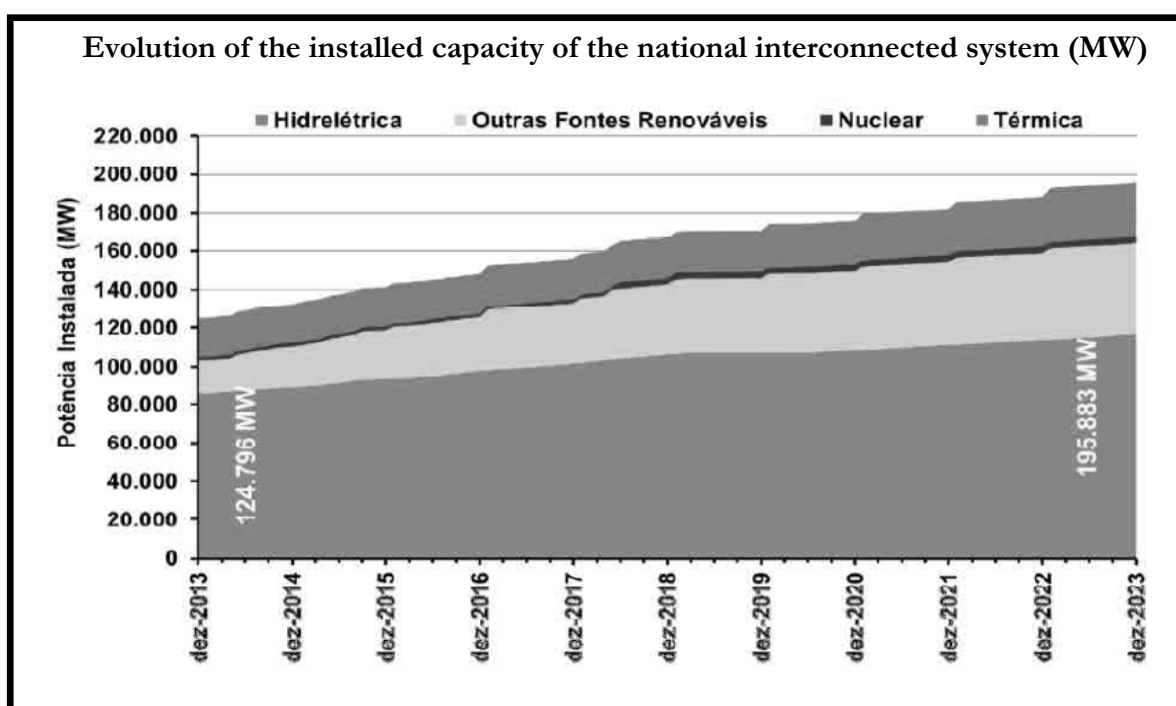
Projects qualified during the first stage were initially scheduled to be rolled out by 30 December 2006, but this deadline was repeatedly extended due to significant delays. By the end of 2011, 3,155 MW of installed power became operational. The PROINFA was the first strong governmental initiative for 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 133GW (in 2014) to nearly 206.5GW (in 2024) mostly boosted by a significant increase of renewable projects in the coming decade.



(Source: EPE, Plano Decenal de Energia 2024)

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

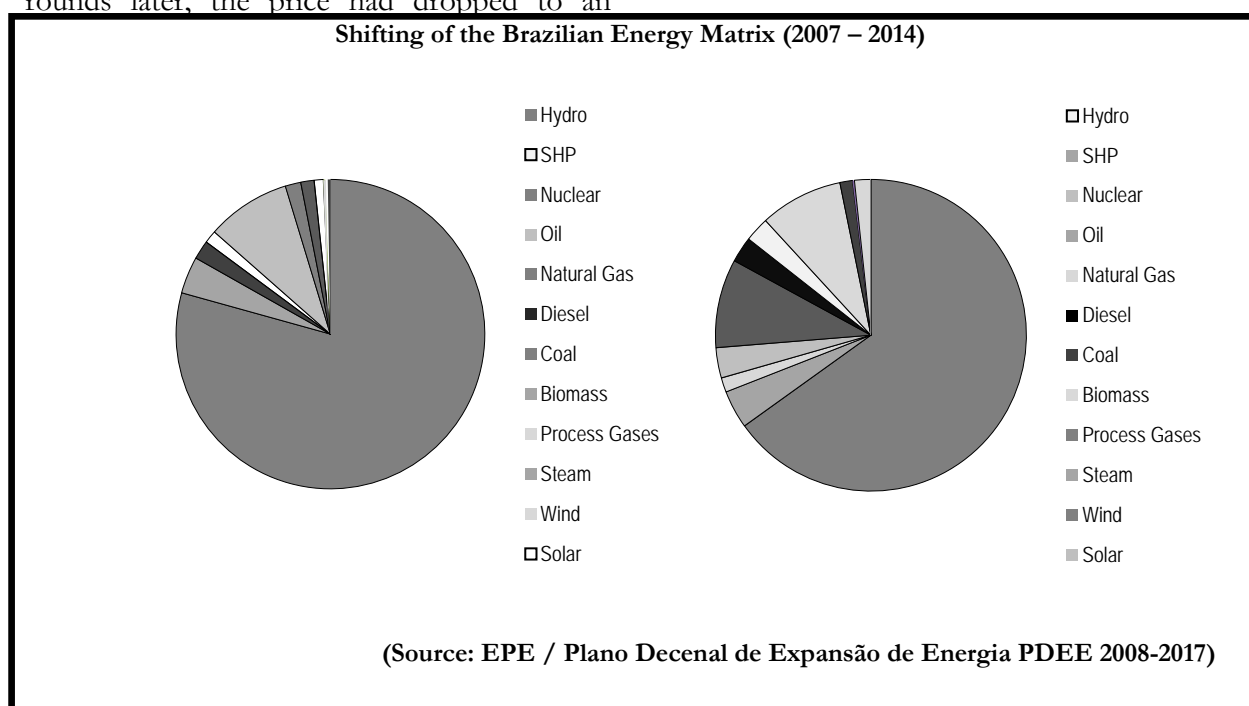
wind power plants, the initiative of organizing energy auctions for renewable energy projects, which are still being promoted on annual basis, were important for securing the bankability and market availability for such new renewable projects, becoming an efficient and cost-friendly way to keep increasing 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 after 2007.



On 2014 and 2015, Brazil once more struggled with its high dependency on hydroelectric energy. The shortfall of rain during years 2012, 2013, 2014 and 2015 in conjunction with the increase of energy consumption motivated by the drop of energy prices imposed by Brazilian Federal Government nearly caused the adoption of austerity measures and rationing of energy to avoid black-outs and economic

recession. In order to avoid the adoption of such new rationing program, Brazilian Government ordered all fossil-fueled 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.

As result of that, Brazilian Federal Government once more took measures to stimulate the implementation of generation projects powered by renewable sources. In this context, Brazilian Federal Government organized several auctions for purchase of energy from new renewable power projects, especially from solar power projects, along with the enactment of further regulation on distributed generation (on-site generation). During such new auctions, Brazilian Federal Government purchased from private developers nearly 2.8GW of energy to be supplied by solar power projects after 2017.

Although still highly dependent on the energy input from large hydroelectric power plants, which represents nearly 65% (sixty-five per cent) of total current energy production in Brazil, the production of energy by other different energy sources, such as biomass, thermal power plants, small hydroelectric power plants, wind farms and solar plants, is progressively occupying an outstanding position in the Brazilian energy matrix.

2. What are 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 28 GW to 57 GW on 2024, representing 24GW of wind power projects, 7GW of solar power projects, 8GW of PCHs and 18GW of biomass fueled power projects. 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 concessionaires, 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 approved certain amendments to Resolution 482/2012 that (1) simplified the rules related to the connection of the distributed generation projects to the SIN, (2) improved the compensation system, and (3) increased the installed capacity up to 5 MW (except for hydroelectric power projects, which were capped at 3 MW).

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 economic growth.

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).

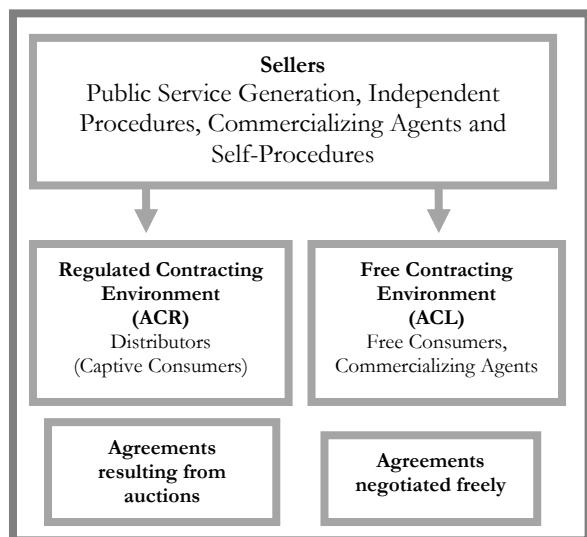
8. Is there a purchase guarantee given by the relevant legislation for the electricity generated by renewable energy companies?

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.

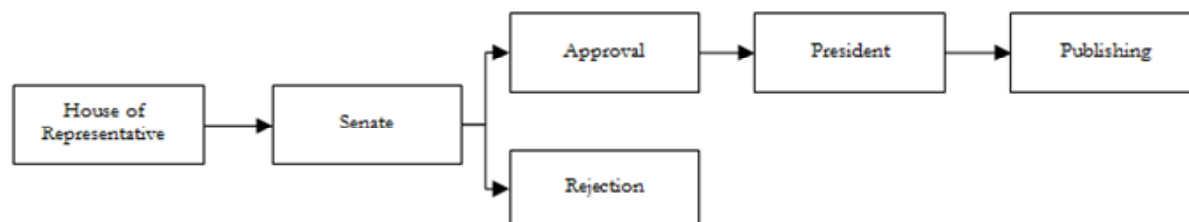
In the case of the PROINFA regime, the minimum price was set in relation to the average national tariff of supply for the final

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/MWh 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/MWh (wind), R\$144.20/MWh (biomass) and R\$141.93/MWh (small hydroelectric power plants) in the 2010 auctions, and R\$300.00/MWh (photovoltaic) in the 2015 auction.

10. Has the Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Brazil is one of the 195 countries that signed the Paris Agreement under the UN Framework Convention on Climate Change. The Presidential request for ratification of Paris Agreement is currently under analysis of Brazilian National Congress. On June 2016, the Brazilian House of Representatives approved certain arrangements to expedite the ratification and the process is expected to be concluded by the end of 2016. Under Brazilian law, the ratification of international treaties shall depend on the approval by the House of Representatives and the Senate. The treaty will become effective and binding after it is published in Brazilian official gazette.



Regarding carbon market, our energy regulatory authorities have also enabled the possibility of using credits arising from the Clean Development Mechanism – CDM in connection with renewable energy projects.

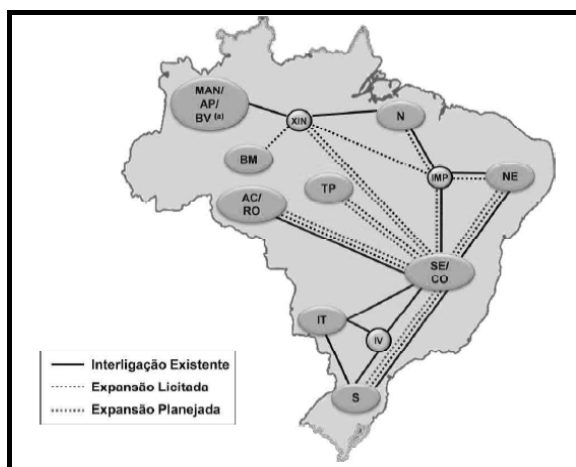
For instance, Decree No. 5,882, dated as of 31 August 2006, sets forth that power purchase agreements executed under PROINFA may have an express clause giving Eletrobrás the right to commercialize credits from CDM as well as to produce all documents required for filling with CDM.

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 do not 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 grip in comparison with other types of energy.

In this sense, ANEEL enacted the Normative Resolution No. 56/2004 that sets forth the procedure for the access of the generating companies that participate of the PROINFA to the system of the transportation of energy.

This Resolution established that the ONS, the concession or permission company of distribution needs to send a definitive access report (*parecer de acesso*) defining the way that the generation company that participates of the PROINFA will be connected to the grid. The access report needs to observe the criteria of minimum global value that is a valuation of the technically equivalent ways to the integration of the generating companies to the grid spending the minimum global value of investments to do this connection.

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

Regarding the possibility of shared connection to the grid, ANEEL Normative Resolution No. 320/2008 established special conditions for wind, biomass and PCHs to access the SIN 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, § 4º only producers complying with the 60% local content requirement for equipment and services for the first phase of the program and 90% for the second phase, were qualified for the auction.

Subsequent auctions did not impose a minimum local content requirement. However, local content requirements for equipment and services are a condition to qualify for 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.

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 Itapúa and some distribution companies that access the shared transmission system pay a connection charge.

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

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

Section 26, § 1º of Law No. 9,427/1996 (as amended) establishes that discounts on distribution and transmission tariffs shall be available to small hydroelectric plants, solar, wind, biomass and qualified co-generation projects with power injected in the transmission and distribution system equal to or less than 30 MW. On December 2015, Law

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>.

No. 9,427/1996 was amended to allow the discount also to solar, wind, biomass and qualified co-generation projects with power input higher than 30 MW and equal or less than 300MW.

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° 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 do not have to pay the financial compensation for the use of the water sources. Law No. 9,427/96

(Section 26 § 4º) states that the water plants with a power equal or lower than 30,000 that maintain the characteristics of a PCH can use this incentive.

e) The Fuel-Consumption Account has been in force since 1993 and collects funds from the electric-power concessionaires of the interconnected grid to subsidize the price of diesel fuel for thermoelectric-generation facilities in isolated areas of the country not serviced by the national grid (mainly in the North region). It is important to note that, as established by Law No. 12,111/2009 in Sections 3 and 4, CCC can also be used for companies that do not 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 Ministry of Mines and Energy, on May 2016 there were 4,594 power generating units operating in Brazil, which totals nearly 145GW of installed capacity. Such number represents an increase of 5.2% of installed capacity if compared with the number of existing power plants on May 2015.

As can be seen in the chart below, although showing a substantial reduction during the past years, hydroelectric power plants stand as the main source of electricity in Brazil, accounting for 64.8% of the domestic supply. Although with a relevant increase from May 2015 (mainly boosted by growth of energy consumption, rain shortfalls and higher incentives from Brazilian Federal Government), the generation of electricity from other renewable sources of energy continues to be incipient if compared with other sources of electric energy.

However, as referred below, generation of electricity from renewable sources such as wind, biomass and solar 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	May 2015		May 2016		Increase from May 2015 to May 2016
	Installed Capacity (MW)	No. of Power Plants	Installed Capacity (MW)	% of Total Installed Capacity	
1. Hydro	89,983	1,242	93,271	64.8%	3.7%
2. Thermo	40,753	2,951	41,883	29.1%	2.7%
2.1 Natural Gas	12,898	153	12,526	8.7%	-2.9%
2.2 Biomass	12,492	525	13,432	9.4%	7.5%
2.3 Oil	9,756	2,218	10,120	7.0%	3.7%
2.4 Coal	3,614	22	3,612	2.5%	-0.1%
2.5 Nuclear	1,990	2	1,990	1.4%	0.0%
2.6 Other	0	31	153	0.1%	-
3. Wind	6,025	361	8,796	6.1%	46.0%
4. Solar	15	40	23	0.0%	51.2%
Total	136,776	4,594	143,922	100.0%	5.2%

(Source: Ministry of Mines and Energy - *Boletim Mensal de Monitoramento do Sistema Elétrico Brasileiro – Maio/2016*)

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CZECH REPUBLIC



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GENERAL

1. What are the nature and importance of the 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 are 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 (the “Energy Act”), as amended, and Act No. 165/2012 Coll., on Supported Renewable Sources (the “Supported Renewable Sources Act”).

The regulatory environment is subject to continuous modifications.

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).

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

Depending on the size and type of renewable energy project, certain construction law and environmental law permits are required (such as 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 1 MW requires authorization, issued by the Ministry of Industry and Trade.

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.

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 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. Despite the announcement of the Ministry of Industry and Trade, no other mandatory buyer has selected.

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 also became entitled to the feed-in tariff or green bonus without regard to the limitation in the preceding paragraph, if such plant was commissioned (in Czech “*uveden do provozu*”) by 31 December 2015.

Last year, the ERO raised the issue of compatibility of the renewables subsidy scheme with the EU state aid rules. The EU Commission issued a decision not to raise objection with respect to the subsidy scheme for renewable sources put into operation after 1 January 2013.² Despite some doubts, especially with regards to the subsidy scheme for renewable sources put into operation before 1 January 2013, the ERO issued also the price decision setting the subsidy scheme for such renewable sources.

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 Supported Renewable Sources Act for a lifetime period defined in secondary legislation.

Under the Supported Renewable Sources 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.

² Decision not to raise objections. State Aid SA.35177 (2014/NN), Official Journal: JOCE C/280/2014.

Also, feed-in tariffs and green bonuses are capped to CZK 4,500/MWh during the initial year of plant operation.

10. Has the Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Although not ratified yet, the Czech Republic signed the Paris Agreement under the United Nations Framework Convention on Climate Change on April 22, 2016. The Czech Republic is a member of the EU Emissions Trading System (ETS) and the mechanism is regulated by the Act No. 383/2012 Coll., on Conditions for Trade of Emission Allowances.

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_provoz_ES_2014.pdf/933fc41a-ad79-4282-8d0f-01eb25a63812

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FINLAND



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GENERAL

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

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 has succeeded in promoting renewable energy in line with the European Union directives and Finland has already reached its national target that requires Finland to increase the use of renewable energy at least to 38 percent of its final energy consumption by 2020.¹ In addition, as much as 79 percent of

the electricity produced in Finland is carbon neutral.² Currently some of the most important sources of renewable energy are biomass, hydropower and wind.³

According to 2015 statistics, Finland's total energy consumption was 361 TWh (of which renewable energy sources accounted for approximately 35 percent) and total electricity generation was 66,2 TWh (of which renewable energy sources accounted for approximately 45 percent.) Based on a breakdown of the total energy consumption by source, the main renewable energy sources are wood-based fuels

transport fuels and fuels for industrial processes. It differs from total consumption in that energy transmission and distribution losses have been removed from it. Thus, it represents the final amount of energy left at the disposal of households and other consumers."

¹ 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 and Statistics Finland: "Energy supply and consumption 2015, 4th quarter", preliminary statistics available at: http://www.stat.fi/til/ebk/2015/04/ebk_2015_04_2016-03-23_en.pdf. According to Statistics Finland, the share of renewable energy calculated relative to final energy consumption has been approximately three to five percent higher than the share calculated from total energy consumption, which means that Finland reached the 38 percent target in 2014. According to Statistics Finland, "final energy consumption measures the consumption of electricity and heat, fuels for space heating,

² See press release *Finnish Energy Industries "Energy Year 2015 and "Säbkontuotanto energialähteittäin"* available at: <http://energia.fi/kalvosarjat/energiavuosi-2015-sabko> as well as <http://energia.fi/energia-jaymparisto/sabkontuotanto>.

³ 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.

(26 percent) and hydro (5 percent) and wind power (1 percent). As regards electricity generation, hydropower (25.1 percent), biomass (16.2 percent) and wind (3.5 percent) contribute the largest proportions.⁴

In comparison to previous year, in 2015 the total energy consumption of Finland decreased by three percent as a result of the exceptionally warm weather that decreased the consumption of energy for heating. Also the net imports of electricity consumed in Finland decreased to 20 percent. Share of renewable energy in Finland's total energy consumption increased by two percent.⁵

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

In general, Finland considers the energy sources specified in the European Union Directives on the Promotion of the Use of Energy from Renewable Sources 2009/28/EC, as amended (the "RES Directive") to be renewable.⁶ According to the RES Directive, the term renewable energy refers to energy that is produced from renewable non-fossil sources such as wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant

gas and biogas. However, peat is considered a slowly renewable energy source in Finland.⁷

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.

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

⁴ See Statistics Finland: "Energy supply and consumption 2015, 4th quarter", preliminary statistics available at: http://www.stat.fi/til/ehk/2015/04/ehk_2015_04_2016-03-23_en.pdf and statistics of Finnish Energy Industries "Energy Year 2015 and "Sähköntuotanto energialähteittäin" available at: <http://energia.fi/kalvosarjat/energiavuosi-2015-sahko> as well as <http://energia.fi/energia-ja-ymparisto/sahkontuotanto>.

⁵ See Official Statistics Finland: "Energy supply and consumption 2015, 4th quarter", preliminary statistics available at: http://www.stat.fi/til/ehk/2015/04/ehk_2015_04_2016-03-23_en.pdf and statistics of Finnish Energy Industries "Energy Year 2015 and "Sähköntuotanto energialähteittäin" available at: <http://energia.fi/kalvosarjat/energiavuosi-2015-sahko> as well as <http://energia.fi/energia-ja-ymparisto/sahkontuotanto>.

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

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

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.⁸
- 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.⁹
- 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 promotes 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.¹⁰
- 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”).¹¹
- 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.

⁸ See also Act on Energy Authority (870/2013).

⁹ 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.

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

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

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 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.¹² The Energy Authority grants various permits for energy projects and is in charge of the feed-in tariff system.¹³ It also enhances and monitors the activities of the electricity and natural gas markets as well as generally promotes the reduction of emissions, energy efficiency and the use of renewable energy.¹⁴

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.¹⁵

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

¹² Ministry of Employment and the Economy, available at: <http://www.tem.fi/index.php?l=en&s=2630>

¹³ Energy Authority, available at: <http://www.energiavirasto.fi/en/web/energy-authority/energy-authority>.

¹⁴ See Government Bill 124/2013 available at: <http://www.finlex.fi/fi/esitykset/lu/2013/20130124>.

¹⁵ 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.

Finland. The necessary permits vary based on the scale and type of the project.

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.¹⁶ 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.¹⁷ In addition, the following liquid fuels remain exempt from excise duty and strategic stockpile fee:¹⁸

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

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.¹⁹

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 industries²⁰ and agriculture.²¹

¹⁶ 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).

¹⁷ Government Bill 147/2010 on Amending Energy Taxation, available in Finnish at "<http://www.finlex.fi/fi/esitykset/ke/2010/20100147>" p. 23.

¹⁸ See Act on Excise Tax on Electricity and Certain Fuels (1260/1996, as amended) and Customer Bulletin No 21, National Board of Customs, 2016 available at: "http://www.tulli.fi/fi/suomen_tulli/julkaisut_ja_esitteet/asiakasohjeet/valmisteverotus/tiedo/stot/021.pdf".

¹⁹ 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.

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

²¹ 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/ke/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.²²

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.²³ 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.²⁴ 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.²⁵ As of May 26, 2016, the Energy Authority had handled and approved 54 percent of all applications of producers that will receive the feed-in tariff.²⁶

Under the tariff system, power projects will get a guaranteed price of EUR 83.5 per MWh for a period of 12 years.²⁷ 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.

²² § 20, Electricity Market Act.

²³ § 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.

²⁴ 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.

²⁵ See the Draft Government Bill amending the Production Subsidy Act available at: http://www.tem.fi/files/43356/HE_TuotantotukimuutosL_luonn_17062015.pdf.

²⁶ See Energy Authority's calculation tool: <https://tuotantotuki.emvi.fi/QuotaCounter>.

²⁷ § 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.

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 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.²⁸ 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.²⁹ 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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Finland signed the Paris Agreement in 2016³⁰ but ratification requires the European Union to clarify the detailed plan for implementing the goals.³¹

Finland has a national scheme for emission trading and strict goals for emission reductions. The Emission Trading Act established the Finnish scheme for greenhouse gas emission allowance trading in 2011 as well as implemented the amendment of the IPPC directive.³² 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 2050.³³

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.³⁴ Thus, electricity generated from renewable sources is not given priority.

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.

²⁸ 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/2014/20140015>.

²⁹ Further information regarding the Seventh Framework Program can be found at: http://europa.eu/legislation_summaries/energy/european_energy_policy/i23022_en.htm.

³⁰ See European Union press release: http://ec.europa.eu/clima/news/articles/news_20160513_01_en.htm and Ministry of Environment's press release: [http://www.ym.fi/en-US/The_environment/Finland_signed_the_Paris_Climate_Agreement\(39090\)](http://www.ym.fi/en-US/The_environment/Finland_signed_the_Paris_Climate_Agreement(39090)).

³¹ See Ministry of Environment's press release: [http://www.ym.fi/fi-FI/Ymparisto/Neuvottelut_Pariisin_ilmastosopimuksen_t\(39169\)](http://www.ym.fi/fi-FI/Ymparisto/Neuvottelut_Pariisin_ilmastosopimuksen_t(39169))

³² There is also an emission trading regime for aviation which is regulated under Aviation Emission Trading Act (34/2010).

³³ See § 6, the Climate Act and Government Bill 82/2014 available at: <https://www.finlex.fi/fi/esitykset/2014/20140082>.

³⁴ See § 20, Electricity Market Act.

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.³⁵ 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.³⁶ The amendment of the Production Subsidy Act came in effect on December 1, 2014,³⁷ after which EUR 20 million has been reserved for off-shore wind power. The state aid must be approved by the EU commission.³⁸

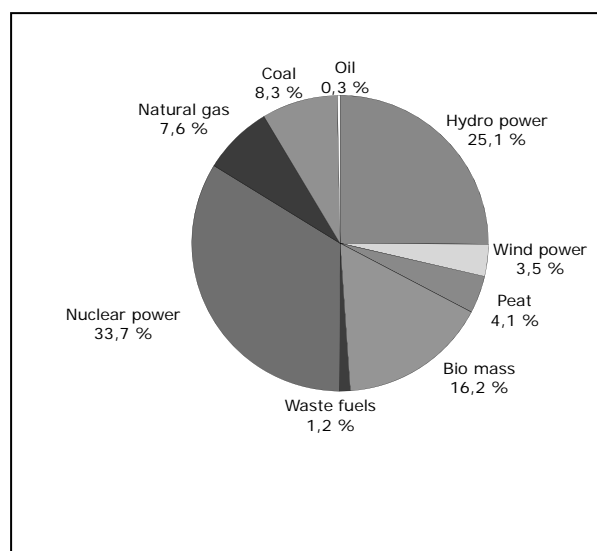
STATISTICS

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 percent³⁹. 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.⁴⁰

Finnish Electricity Supply 2015.⁴¹



³⁵ See the Government Decree on General Rules for the Allocation of Subsidies for Energy (1063/2012).

³⁶ Government Bill 15/2014 available at <http://www.finlex.fi/fi/esitykset/2014/20140015>

³⁷ 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>.

³⁸ See the Ministry of Employment and Economy available at: http://www.tem.fi/en/energy/energy-support/support_for_demonstration_of_offshore_wind_power

³⁹ The share of net imports.

⁴⁰ Original statistics of Finnish Energy Industries available at: <http://energia.fi/energia-ja-ymparisto/sabkontuotanto> and <http://energia.fi/kalvosarjat/energiavuosi-2014-sabko>.

⁴¹ Original diagram of Finnish Energy Industries available at: <http://energia.fi/en/slides/energy-year-2015-electricity>.

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GENERAL

1. What are 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 lower rates for their energy usage, while

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 tons of oil equivalent (“Met”) (as compared to 15,025 Mtep in 2002)³, the share of renewable energy sources being as follows:

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.

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

⁵ A first round of offshore wind power tenders, launched on 5 July 2011, resulted in 2 gigawatts of

At the same time, French government adopted an energy transition law according to which the country's reliance on nuclear energy should be reduced to 50% by 2025⁶

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

Pursuant to article 29 of the law No. 2005-781 dated 13 July 2005⁷ (as amended), renewable energy sources cover wind energy, solar energy, geothermal energy, aerothermy energy, hydro energy, energy generated from biomass, waste water treatment plants and biogas. Article 29 of said law further defines biomass as the biodegradable fraction of products, wastes and residues issued from agriculture, including vegetal and animal substances from earth and sea, 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*

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 Brieuc).

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 Îles d'Yeu and Noirmoutier).

⁶ Program law No. 2015-992 dated 17 August 2015 *on the energy transition for a green growth*.

⁷ Repealed by the order No. 2011-504 dated 9 May 2011 and codified in the new Energy Code.

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, amended by decree No. 2015-1823 dated 30 December 2015, 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 2016 to 30 June 2016 Roof-integrated photovoltaic for 0-9kW: 24,63 c€/kWh Simplified Roof-integrated photovoltaic for 0-36kW: 13,27 c€/kWh and for 36-100 kW: 12,61 c€/kWh For any installation: 5,80 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 Act⁸ 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

⁸ Repealed by the order No. 2011-504 dated 9 May 2011 and codified in article L.131-1 of the Energy code

*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”*⁹. New prerogatives regarding price fixing and control over access to nuclear electricity were granted to the CRE by law No. 2010-1488 dated 7 December 2010.

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

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

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 meters¹⁰, 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 declaration¹¹.

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 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 prefect¹².

⁹ 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.

¹⁰ 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.

¹¹ Article R.421-9 of the town planning Code

¹² 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 and subject to an environmental impact assessment (article L.553-1 of the Environmental Code).

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 12 MW¹³ 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*) No. 2014-355 dated 20 March 2014 amended by the law No. 2015-992 dated 17 August 2015 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 or from the first day of the third months following the enactment of the law No. 2015-992 dated 17 August 2015¹⁴), facilities classified for environmental protection listed in article 1 of the said order (in particular facilities

¹³ Pursuant to article L.311-6 and article R.311-1 of the French energy Code

¹⁴ Pursuant to the order (*ordonnance*) n°2014-355 dated 20 March 2014 *on experimentation for a single authorization in classify facilities for environmental protection* modified by law No. 2015-992 dated 17 August 2015

installations utilizing the mechanical energy of wind) 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 sites¹⁵.

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).

¹⁵ Article R.421-2 of the town planning Code

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 paragraph 12° of the FTC grants an exemption of land tax on installations which produce solar energy, including solar panels.

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

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 (i) to purchase electricity generated from facilities producing renewable energy at a preferential tariff or, (ii) since the law No. 2015-992 dated 17 August 2015, to provide additional compensation for produced electricity. This principle is embodied in articles L.311-10 to L.311-13-6, articles L.314-1 to L.314-13 of the French energy code and also articles L.314-18 to L.314-27 concerning the process of additional compensation.

Firstly, article L.311-10 of the French energy code, provides that when the production capacities do not meet the objectives of the energy multiannual programming, especially those pertaining to techniques of production and geographical localization of the installations, the competent administrative authority can resort to call for tenders.

When tenders modalities provide a contract pursuant to article L.311-12 paragraph 1, EDF and, the non-nationalized electricity distributors are required to enter into a power purchase contract with the successful bidder. However, when tenders modalities provide an additional compensation for produced electricity pursuant to article L.311-12 paragraph 2, only EDF is required to enter into an additional compensation 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) or additional compensation for produced 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 impact of the facilities on the balance between offer and demand and on

supply security; (ii) the nature and origin of primary energy sources, (iii) the impact of the facility regarding the fight against greenhouse effect, (iv) energy efficiency of the facilities 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 général 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. The article R.314-2 of the French energy Code created by law No.2015-1823 dated 30 December 2015 details the limits in terms of installed capacity of the production installations which benefit from the purchase obligation. These limits, which

cannot exceed 12 megawatts for the installations specified at the 2° of the article L.314-1 of the French energy code, are determined for each category of production installation. Article R.314-14 of the French energy Code 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 articles R.314-7 and follows of the French energy Code. Power purchase contracts are concluded in a standard form approved by the French Ministry of Energy¹⁶.

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

9.1. Purchase price and additional remuneration

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. Renewable energy companies, having entered into an additional remuneration contract with EDF, receive an additional remuneration as a supplement to their remuneration on the market. However, the purchase price and the specific conditions for the additional remuneration are not decided by the parties but are set by orders of the French Ministry of Energy.

Under a tender process organized under article L.311-10 of the French energy code, the financial modalities of the power purchase contract or of the additional remuneration contract are determined by the French Ministry of the Energy and are set out in the tender documentation¹⁷. Such price depends on the nature and specificity of the facility and is indexed according to the terms of the power purchase agreement.

If a power purchase agreement has been entered into on the basis of the provisions of article L.314-1 of the French energy code, 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.

If an additional remuneration contract has been entered into on the basis of the provisions of article L. 314-18 of the French energy code, the specific conditions of the additional remunerations are set by an order of the French Ministry of Energy. As a general principle, the amount of the additional remuneration is calculated taking into account the investments and operating costs of efficient plants that are representative of each energy sector, the cost of integration into the electrical system, the revenues from the installation whether the facility contribute to achieving the national electricity policy goal.

9.2. State aid concerns

Wind-energy electricity However, in respect of the purchasing tariff of electricity produced by wind turbines, the European Union Court of Justice considered that these tariffs constitute State aids as defined by the Treaty on the

¹⁶ Article R.314-15 of the French energy code

¹⁷ Articles R.311-12 and R.311-13 of the French energy code

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.

In a recent judgment rendered on 15 April 2016,¹⁸ the Conseil d’Etat rules that France had not properly implemented the decision of 28 May 2014 annulling the abovementioned ministerial order. The judgment states that the enforcement of the annulment decision of 28 May, 2014 requires that the French State ensures that all necessary measures be taken to ensure the payment, by each beneficiary of the State aid (i.e. the difference between the feed-in-tariff paid to the wind-farm producers and the market price), of interests that they would have paid if they had to borrow the corresponding amounts granted pursuant to the annulled ministerial orders pending the decision issued by the Commission on 27 March 2014 approving the French scheme. The Conseil d’Etat gave French authorities a six-month period to take appropriate measures to implement the decision of 28 May 2014.

- Solar photovoltaic energy

In a recent civil litigation, the Court of appeals of Versailles sought a preliminary ruling from the European Court of Justice as to whether the feed-in tariffs system in the solar photovoltaic energy did qualify as State aid.¹⁹ The case is still pending before the Court.

¹⁸ Note: Conseil d’Etat, 15 April 2016, n°393721.

¹⁹ Note: Court of Appeal of Versailles, 8 December 2015.

10. Has the Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

The United Nations Climate Change Conference (also called “COP21” or “CMP11”) held in Paris from 30 November to 11 December 2015. The United Nations countries signed the Paris Agreement (“*Accord de Paris*”) in order to limit the global temperature increase to 2 degrees Celsius and reduce greenhouse gas emissions. On 22 April 2016, this Agreement has been signed by 175 countries, including France, those countries representing more than 90% of greenhouse gas emissions. The Paris Agreement under the United Nations Framework Convention on Climate Change has been ratified by the National Assembly of France on 17 May 2016. The Paris Agreement should now be examined by the Senate on 8 June 2016.

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.

French government adopted a national low-carbon strategy (“*Stratégie Nationale Bas Carbone*” – SNBC)²⁰ in order to reinforce its willingness to reduce GHG emissions. A carbon budget is established for the period between 2015 and 2018, and then for each

subsequent five year period (Article L.222-1 A of the French environmental Code)²¹. The prefect and the president of the regional council, after consultation with regional government, shall jointly develop a regional project on climate, air and energy.

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 Act²² requires the entities responsible for the management and connection of facilities to the electricity grid to guarantee without discrimination an access to the grid to all electricity generators. The two entities responsible for the connection to the grid are (i) Électricité Réseau Distribution France (“ERDF”) for the connection to the medium-voltage or low-voltage grid; and (ii) Réseau de Transport d’Electricité (“RTE”) for the connection to the extra high-voltage or high-voltage grid. In order to be connected to the grid, a generator must request ERDF or RTE (depending on the voltage) to issue a proposition (*Proposition Technique et Financière*) setting out technical and financial conditions under which the facility of the generator may be connected to the grid (the “PTF”). Upon receipt of the generator’s application, the grid manager has three months to study the information submitted by the generator and to provide the generator with the PTF. The PTF contains an estimation of the technical and financial conditions for the connection but also mentions an estimated waiting time for the execution of a connection agreement as well as an estimated length of the connection works.

²⁰ Articles L.222-1 A and follows of the French environmental Code created by law No. 2015-992 dated 17 August 2015

²¹ Decree n°2015-1491 dated 18 November 2015 *on national carbon budgets and national low-carbon strategy*

²² Repealed by the order No. 2011-504 dated 9 May 2011 and codified in the French energy code.

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
Gross Electricity Generation in 2015 (TWh)	546

(Source: RTE – Bilan électrique - 2015)

	Gross Electricity Generation from renewable sources in 2014 (in TWh)
Total	88,3
Hydro	53,9
Wind	21,1
Solar	7,4
Other	5,9

(Source: RTE – Bilan électrique - 2015)

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GEORGIA



David Archvadze



Irakli Mgaloblishvili

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GENERAL

1. What are 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. Ministry of Energy of Georgia, with the Georgian Energy Development Fund, has

commenced the construction of a new 20 MW wind power plant, thus allowing for the additional 300 MW electric power for the county's energy system. The equipment for the estimation of wind power has already been installed near Gori. "Qartli" wind power plant shall be the first fully government-funded, two-lot pilot project intended for such purpose. On November 10, 2015 the official tender has been declared and VESTAS BENELUX B.V. has won the first lot (purchase, transportation, installation and subsequent operation of wind turbines) and JSC Qartli Wind Power Plant has been granted rights to the second contractual lot (consecutive electro- and construction works). The overall construction is set to be finished in September, 2016.

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 Kolokheti 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

At current stage the works are being carried out for the preparation of feasibility study for prospective wind farms which can be placed: - in Iaghluja mountain range (45 MW, 110 mln. KWh), Mta-Sabueti – (100MW, 370 mln KWh) – Samgori upland (45 MW, 130 mln.KWh), - Gori –Skra section (90 MW, 250 mln. KWh), the nearby territory of the Kutaisi (90 MW, 225 mln KWh) – in the gorges of the rivers

Faravani and Chorokhi – accordingly with 120 and 30 MW installed capacity and 336 and 90 mln. KWh electricity generation and etc.

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.

In April, a Memorandum of Understanding was signed between the Ministry of Energy of Georgia and Headwall Power International - an international company focused on the alternative sources of energy, regarding the research of solar energy potential in Gardabani Municipality of Georgia.

According to the Memorandum, Headwall Power International shall research, for a period of twelve months, the solar energy potential in Gardabani municipality. More precisely, the examination of the technical and economic aspects of the solar energy station for the future construction and operation shall also entail an appropriate assessment report and relative proposals regarding the planned facility.

2. What are 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;

¹ Georgian Law on Electric power and Natural Gas, Article 2, paragraph Z ²⁹

- 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 (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;

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

- 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;
- 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.

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

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.

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

⁴ The applicable legislation includes: (i) Law of Georgia on Electric Power and Natural Gas,

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.

Also, from 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

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.

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

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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Georgia has recently signed the Paris

Agreement under the United Nations Framework Convention on Climate Change on April 22, 2016 and as of now, it has not been acceded to or ratified by the Parliament. At the moment, the nascent carbon market or the new carbon credit mechanisms are still in their infancy and currently not fully lay out.

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.

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



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GENERAL

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

Given¹ 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.

In September 2010, the German government published its first energy strategy ("ES") with the intention of organizing an environmentally

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.

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 are 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 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 equalize the financial burden of the promotion of renewable energies. In detail:

Priority connection to the grid system

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

Priority 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 optimize, 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 equalization scheme

The costs resulting from the purchase of feed-in tariffs are equalized according to the EEG and the Ordinance on the EEG Nationwide Equalization Scheme (*Equalisation Scheme Ordinance - AusglMechV*). While the EEG provides for the principles of the equalization 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 equalization 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 equalization 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 equalization 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) equalization scheme

The Federal Network Agency particularly monitors the (nationwide) equalization 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 equalization 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 a 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 are charged with duties regarding the special equalization 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 max. 5 MW	8.42 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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

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

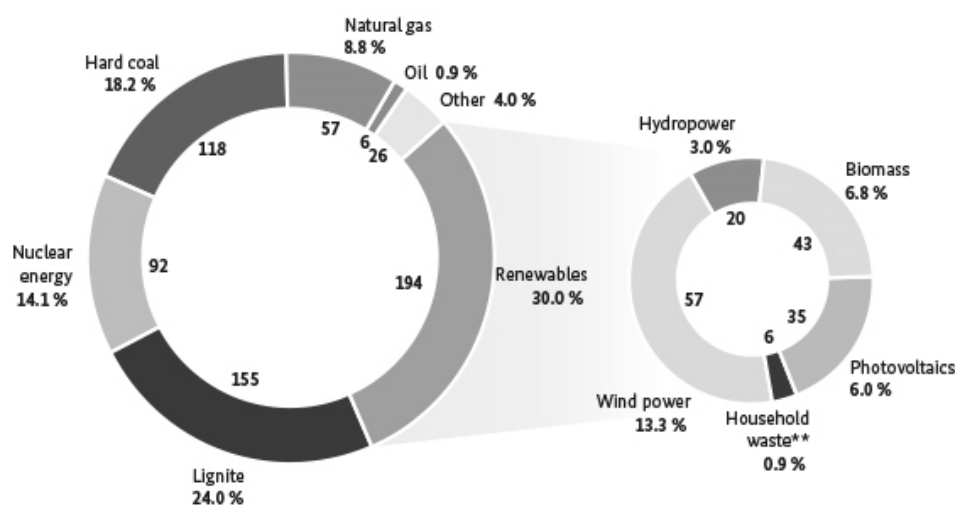
Loan Corporation (*Kreditanstalt für Wiederaufbau – KfW*) are to be mentioned. The KfW grants

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.



* Preliminary figures ** Regenerative part

(Source: Federal Ministry for Economic Affairs and Energy, Working Group on Energy Balances (AGEE-Stat) Status as per December 2015)

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GENERAL

1. What are 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 bio-mass 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 are 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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Hungary has signed, but not yet ratified the Paris Agreement. However, expectation is that the Paris Agreement will be ratified in 2016.

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.

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 2015.

In 2014, the data showed that 10.7% of the electricity generated in Hungary was produced from renewable energy sources. At that time, biomass (5.8%) and wind (2.2%) were the major sources of renewable energy. Other renewable sources included biogas, landfill gas and sewage gas, hydro, solar, and biodegradable waste.

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IRELAND



Alex McLean



Niall Esler

ARTHUR COX

GENERAL

1. What are 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. Meeting

2020 renewable energy efficiency targets could put Ireland on a low-carbon pathway and trajectory in terms of meeting future targets in 2030 and 2050.

The National Renewable Energy Action Plan (“NREAP”) sets out the Government's strategic approach and concrete measures to achieve Ireland’s 2020 targets. Member States are required to submit a report on progress to the European Commission every two years, with the final report to be submitted by 31 December 2021. To date Ireland has submitted two reports, dated January 2012 and February 2014 respectively. 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. Several reports in recent years have provided a sense of the scale of the challenge remaining in order to achieve those targets. Between 200

MW and 250 MW of additional wind capacity must be installed every year to 2020. Approximately 270 MW of wind capacity was installed in 2014. Average installed capacity over the past five years has been 177 MW.

Notwithstanding the above, significant progress has in fact been made. Ireland is just over half-way towards meeting its 2020 renewable energy target, with 8.6% of gross final consumption derived from renewables in 2014. Target achievement in 2020 is possible. In order to meet the national 2020 goal, a range of existing and new actions – and a scaling up of action across all sectors – will be required.

Regulators and policy makers alike face the challenge of ensuring a smooth transition from the current market to a market fuelled by up to 40% renewable energy in less than four 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 order to meet binding national and European targets, EirGrid has introduced Delivering a Secure, Sustainable Electricity System (the "DS3 Programme"). The aim of the DS3 Programme is to address the challenges of operating the electricity system in a secure manner, while achieving the 2020 renewable energy targets. The DS3 Programme is designed to ensure that the power system

can be operated securely with increasing amounts of variable non-synchronous renewable generation over the coming years. The DS3 Programme is made up of 11 work streams, which fall under three pillars: System Performance, System Policies and System Tools. The annual budget for the DS3 Programme has been set at some €235 million and may provide additional revenue streams for generators.

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. No update on Grid25 has been published by EirGrid in the period since March 2015.

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. 2014 saw an increase of 400% in the number of people buying electric cars in Ireland. While 222 were sold in 2014, compared with just 51 in 2013, the figure remained well below the 13,929 petrol cars and 47,559 diesel cars sold. Figures for 2015 are as yet unavailable.

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 are produced from renewable sources. The current minimum percentage requirements (by volume) are 6.383%; from 1 January 2017, the minimum percentage will be increased to 8.695%.

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 fuels¹. VRT and other tax reliefs will however continue to be available in respect of electric and hybrid vehicles in Ireland.

¹ 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 are 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 (the "2011 Regulations") (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. The 2011 Regulations have since been repealed and replaced by the European Union (Renewable Energy) Regulations 2014.

REGULATION

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

The Minister for Communications, Climate Change 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 European Communities (Internal Market in Electricity) Regulations 2010 (the "2010 Regulations") represented the first step taken in Ireland towards the transposition of Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity. The Directive repeals Directive 2003/54/EC. The 2010 Regulations provide, inter alia, for the strengthening of independent regulation, better levels of consumer protection, the licensing of a public electricity supplier, the designation of a

supplier of last resort and the enhancement of security of supply provisions. The European Communities (Internal Market in Electricity and Gas) (Consumer Protection) Regulations of 2011 give further legal effect to consumer protection provisions of Directive 2009/72/EC and the European Communities (Internal Market in Gas and Electricity) (Amendment) Regulations 2015 set out the unbundling rules which apply to, inter alia, electricity transmission system operators.

The European Communities (Renewable Energy) Regulations 2014 (as supplemented by the Sustainable Energy Act 2002 (section 8(2)) (Conferral of Additional Functions – Renewable Energy) Order 2012) have transposed Directive 2009/28/EC on the promotion of use of energy from renewable sources. In addition, the European Union (Energy Efficiency) Regulations 2014 and the European Union (Energy Efficiency Obligation Scheme) Regulations 2014 (the "2014 Regulations") transpose certain provisions of the Energy Efficiency Directive (2012/27/EU) (the "EED"). 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 then Minister (Alex White T.D.) published a White Paper in December 2015 setting out Ireland's new Energy Policy Framework. The White Paper is a welcome addition to the industry as it has set out a clear policy to address the challenges facing Ireland's energy market, particularly the renewable sector. Its publication came shortly following the UN's 21st Conference of the Parties within the United Nations Framework Convention on Climate Change, which was held in November 2015.

The White Paper outlined an ambitious energy transition which will require the active engagement of Ireland's citizens, communities, businesses, academics and experts, and local and national State agencies. It will also require better public awareness of the nature and scale of the challenges Ireland faces, and a robust consensus about the broad policy measures required to meet those challenges.

The Minister's vision of a low carbon energy system means that greenhouse gas emissions from the energy sector will be reduced by between 80% and 95%, compared to 1990 levels, by 2050, and will fall to zero or below by 2100. To achieve this, fossil fuels will grow to account for 19-30% of final energy demand in Ireland. This means that non-renewable energy sources will make a significant – though

progressively smaller – contribution to Ireland's energy mix over the course of the energy transition.

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.

It has been proposed that the powers of the CER be enhanced in The Energy Bill 2016 (the “Bill”) which was published on 18 January 2016. This proposed legislation will amend, consolidate and broaden energy legislation in Ireland. The Bill proposes enhancements to the enforcement powers of the CER, and to rename the CER as the Commission for Regulation of Utilities to reflect its current role, which now includes the economic regulation of water services. It also proposes to give the existing SEM a wider definition to bring it into full compliance with the EU integrated single electricity market. The CER already possesses a range of enforcement powers but there is currently a lack of effective administrative sanctions beneath the ultimate measure of licence revocation. The Bill proposes to give the CER the power to appoint inspectors to investigate suspected/alleged improper conduct by energy undertakings and to impose administrative sanctions. As of the time of writing, the Bill remains before the Houses of the Oireachtas.

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 was certified as the transmission system operator (“TSO”) for Ireland. The ESB remains 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 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, Gas Networks Ireland (formerly known as Gaslink), an independent subsidiary of Ervia, was established as the independent system operator for the Ervia transportation system (transmission and distribution system).

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, Climate Change and Natural Resources (“DCCCNR”) 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.² 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

² Available at "<http://www.seai.ie/Grants/oceanenergy>"

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.

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, Climate Change and Natural Resources ("DCCCNR") to support the construction of new electricity generation plant powered by biomass, hydropower or wind energy. The REFIT I scheme accepted applications until 31 December 2009, and was subject to a quantitative limit which was 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. Applications for the second REFIT programme³ ("REFIT II") and third REFIT programme⁴ ("REFIT III") closed for new applications on 31 December 2015. REFIT II provides support for

³ A Competition for Electricity Generation - from Onshore Wind, Hydro and Biomass Landfill Gas Technologies 2010-20 IS.

⁴ A Competition for Electricity Generation from Biomass Technologies 2010-2015.

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 DCCCNr 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) 1603VtWh. The maximum size of an individual plant that could be accepted into REFIT III was 50MW. An exception to this rule applied to peat co-firing stations which can 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 would have required an individual state aid application to be submitted by DCCCNr to the European Commission.

REFIT II projects must be built and operational by 31 December 2017. The support for any particular project cannot exceed 15 years and the support may not extend beyond 31 December 2032. The wind sector has therefore been increasingly active in the last 12 months as developers seek to meet the REFIT II deadlines.

In order to participate in the REFIT Schemes, renewable generators must first have been accepted by the DCCCNr in accordance with the relevant REFIT terms and conditions. Successful generators who have received 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 DCCCNr), 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.

On 31 July 2015, the DCCCNr published a Consultation Document on a proposed new Renewable Energy Support Scheme to replace REFIT. The DCCCNr is developing a new support scheme for renewable electricity which is to be available this year. This will need to comply with EU State Aid Rules and will therefore be a market-based support mechanism, unlike REFIT.

REFIT Reference Prices indexed to 2016:⁵

a. REFIT I

The reference prices for REFIT I are:

⁵ Figures taken from Department of Communications, Energy and Natural Resources website at: <http://www.dccnr.gov.ie/Energy/Sustainable+and+Renewable+Energy+Division/REFIT.htm>

- Large Wind category (above 5MW) – 69.72 euro per MWh;
- Small Wind category (equal to or less than 5MW) – 72.167 euro per MWh;
- Hydro – 88.068 euro per MWh;
- Biomass Landfill Gas – 85.622 euro per MWh;
- Other Biomass – 88.068 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 – 88.068 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*):
Appendix 1 For using Energy Crops – 99.822 euro per MWh;
Appendix 2 For all other biomass – 89.314 euro per MWh;
- Biomass *CHP* units greater than 1500 kW – 126.091 euro per MWh;
- 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.

A key consideration in the development of the Integrated Single Electricity Market (“**I-SEM**”) is how the REFIT schemes will be amended, and whether they will continue to protect revenues in the same manner. We anticipate widespread negotiations on existing power purchase agreements and potentially in financing documents when the I-SEM and REFIT changes are confirmed, as generators, offtakers and lenders rush to preserve their position in the event that REFIT does not address new risks or costs that may arise in I-SEM.

10. Has the Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

The Paris Agreement was opened for signature at the United Nations Headquarters in New York on 22 April 2016 and will remain open until 21 April 2017, in accordance with Article 20, paragraph 1 thereof. Ireland signed the Agreement on 22 April 2016, but as at the time of writing, has yet to ratify it.

Ireland, as an EU Member State, is required under the European Union Emissions Trading Scheme (the “**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, along with Denmark and Luxembourg, has the most challenging target for greenhouse

gas emissions reductions in the EU; Ireland's target is to achieve 20% lower than 2005 greenhouse gas emissions levels by 2020. Emissions targets also include emissions from agriculture and waste disposal; such emissions currently account for 35% of Ireland's greenhouse gas emissions, with energy-related emissions accounting for the remainder.

The EU ETS was launched in 2005 as the world's first international company-level 'cap-and-trade' system for cost-effectively reducing greenhouse gas emissions. The EU ETS is established under Directive 2003/87/EC and amendments thereto. This was implemented in Ireland under S.I. 490 of 2012, S.I. No. 261 of 2010, and amendments thereto. The scheme is being implemented in distinct phases or 'trading periods'.

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.

Building on Ireland's huge success in securitisation, aircraft leasing and funds management, a highly supportive tax regime has been created as Ireland seeks to become a hub for carbon trading. The key vehicle in this regime is the use of what are known as Section 110 Companies. A unique aspect of Irish tax legislation for Section 110 vehicles is that it generally allows such companies a tax deduction for all interest payable including any profit participating element. This enables Section 110 companies to be effectively tax neutral, which has resulted in Ireland becoming one of the top locations for trading carbon credits. A recent survey ranked Ireland 7th globally for attractiveness of its green tax regime.

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 2009, the CER published a Decision Paper⁶ 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 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.

On 11 December 2015, a consultation process was launched to revise connection policy, primarily to address the large increase in connection applications, principally driven by prospective solar developers. If actioned, this revised approach will ensure solar and other sub-5MW projects cannot automatically avoid all forms of group processing.

⁶ CER/09/099

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.

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 7.

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.

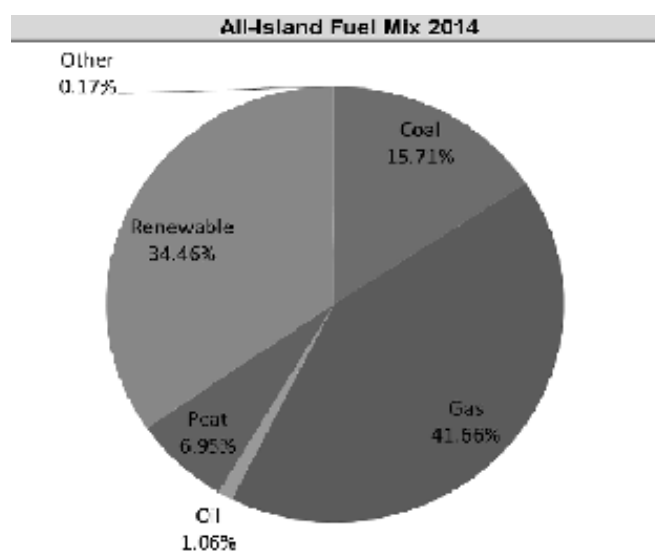
STATISTICS

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 2014, renewable energy sources contributed 34.46% of Ireland's electricity needs. Renewables have continued to contribute more to the fuel mix over recent years; there are a number of contributing factors to this increased contribution. Firstly, and primarily, a significant amount of Guarantee of Origin ("GO") certificates have been imported from Europe by suppliers for use in their fuel mix figures. Secondly, there was an increase in installed capacity of wind in 2013 and 2014 of 198.5 MW² and 367 MW respectively. Finally, the wind capacity factor for 2013 and 2014 was 30.6% and 28.5 % respectively, compared to 28.4% for 2012..⁷ This significant increase in electricity produced from wind has allowed Ireland to reduce its dependency on imported fossil fuels. See Figure 1 for a breakdown of the fuel mix in Ireland in 2014.

⁷ CER Fuel Mix Disclosure and CO² Emissions 2014, published 7 August 2015.

Figure 1: Ireland Fuel Mix



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GENERAL

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

To ensure a stable energy supply

Japan's energy self-sufficiency ratio¹ has historically been very low due to a lack of domestic natural resources. In 2014, it stood at a mere 6%. In other words, around 94% 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 oil declined from 77% in 1973 to 47.3%

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 title of this law is the Act concerning the Rational Use of Energy (Act No. 49 of 1979) (*enerugi no shiyō no gōrika ni kansuru hōritsu*).

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 title of this law is the Act on the Promotion of Development and Introduction of Alternative Energy (Act No. 71 of 1980) (*hikaseki enerugi no kaihatsu oyobi dōnyū no sokushin ni kansuru hōritsu*).

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 92.3% in 2014.⁵

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 remains unstable. As a result, Japan's energy supply (which, as noted above, is heavily reliant on imports) is considered fragile. Renewable energy has a key role to play in enhancing the stability of Japan's energy market.

To reduce the environmental burden

Increased use of renewable energy is critically important to cutting Japan's greenhouse gas emissions. Under the Kyoto Protocol, Japan committed to reducing its greenhouse gas emissions by 6% from 2008 to 2012. The Japanese government set a further target of reducing emissions by 26% from the 2013 level by 2030. Furthermore, the Japanese government floated a long-term target of reducing emissions in Japan to 80% of the current level by 2050.⁷

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 make up 70% of Japan's energy supply by 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 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.

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

The Renewable Energy Act⁸, which governs the Japanese Feed-in Tariff ("FIT") program, defines "renewable energy resources" as follows:⁹

- 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,

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 Fourth Basic Environmental Plan (Cabinet Decision on 27 April 2012).

⁸ The full English title 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*)

⁹ Article 2(4) of the Renewable Energy Act.

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.¹⁰

The Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers¹¹ contains a similar definition of 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.¹² The enforcement ordinance¹³ designates the resources of renewable energy as follows:¹⁴ (i) photovoltaic power; (ii) wind power; (iii) hydro power; (iv) geothermal heat; (v) solar thermal power; (vi) heat in the atmosphere; and (vii) biomass (except for fossil fuels).

¹⁰ There is no ordinance which designates other renewable energy resources at the time of writing.

¹¹ The full English title 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 kyōkyū jigyousha niyoru hikaseki enerugi gen no riyō oyobi kaseki enerugi genryō no yūkokuna riyō no sokushin ni kansuru hōritsu*).

¹² Article 2(3) of the Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers.

¹³ 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 kyōkyū jigyousha niyoru hikaseki enerugi gen no riyō oyobi kaseki enerugi genryō no yūkokuna riyō no sokushin ni kansuru hōritsu sekourei*).

¹⁴ Article 4 of the Enforcement Ordinance of the Act on Promotion of Use of Non-Fossil Fuel Energy by Energy Suppliers.

REGULATION

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

The Renewable Energy Act was passed by the Japanese Diet in August 2011 to promote the use of electric energy generated by renewable energy and to encourage renewable energy business. The act came into force on 1 July 2012. Under the Act, utilities are obligated to purchase all electricity generated from renewable energy sources for certain periods at fixed prices designated by the Ministry of Economy, Trade and Industry (“METI”). The renewable energy procured by utilities, through their grid system, broadly distributed to end-consumers who bear the procurement cost as a “renewable energy surcharge”¹⁵ 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 Ministry of Economy, Trade and Industry (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 participate in the FIT program, a

¹⁵ 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).

renewable energy project must obtain approval from METI (the “Certification of Facilities”, commonly known as “*setsubini-ninte?*”). Upon receiving the application for the Certification of Facilities, METI examines the capacity and quality of the power facilities, maintenance system, measuring equipment and cost projections, and then approves the facilities if all legal requirements are met.¹⁶ If the renewable energy facility is required to undergo 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 for Certification of Facilities.¹⁷

¹⁶ Normally, METI issues the Certification 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 these problems, 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 instructing the relevant utility to terminate grid connections. 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 been the case in Hokkaido or more time is needed in specific areas such as those affected by the March 2011 East Japan Earthquake.

¹⁷ Please note that the procedures associated with the Environmental Impact Assessment are 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.

Other Permits

Other permits may be needed depending on the land classification of project site (such classifications being ultimately determined at the local level in accordance with local laws and regulations). As a typical example, the Agricultural Land Act¹⁸ 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 (“conversion” for certain types of agricultural land is difficult to obtain). Other laws that are often important for renewable energy projects in Japan are the Nature Conservation Act¹⁹, Natural Parks Act²⁰, Act on Protection of Cultural Properties²¹, and the Forest Act²². 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.²³

¹⁸ The Agricultural Land Act (Act No. 229 of 1952) (*nouchi hō*).

¹⁹ The Nature Conservation Act (Act No. 85 of 1972) (*shizen kankyō hōzen hō*).

²⁰ Natural Parks Act (Act No. 161 of 1957) (*shizen kōen hō*).

²¹ The Act on Protection of Cultural Properties (Act No. 214 of 1950) (*bunkazai hōgo hō*).

²² The Forest Act (Act No. 249 of 1951) (*shinrin hō*).

²³ A wholesale supplier with generation facility of 2,000,000 kW or more is categorized as

INCENTIVES

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

A small or medium-sized private business operator²⁴ who establishes a facility that is used for “new energy”²⁵ can apply to have 7% of the costs of the facility deducted from its corporate tax liability. Alternatively, up to 30% of any facility’s set-up costs can be immediately written off as depreciation.

Other operators of solar or wind power facilities can choose to do this as well, but they are not permitted to benefit from the 7% corporate tax deduction applicable only to small and medium-sized operators.

Owners of renewable energy facilities that have acquired Feed-in Tariff authorization can also discount the value of their real-estate by 33.3% for the purposes of the calculation of their real-estate tax for three years.

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

The Renewable Energy Act requires that

“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.

²⁴ A small or medium-sized company means one whose capital amount is less than JPY100,000,000 or whose total number of employees is less than 1,000.

²⁵ “New energy” refers to all forms of electricity generation that do not use fossil fuels and that require government support due to their present high cost

utilities enter into a power purchase agreement with all renewable energy producers that have received METI certification (“Specified Supplier”) at fixed prices for certain periods designated by METI. The Minister of Economy, Trade and Industry 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 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.

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.

Utilities 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 A clearing institution manages the cost of renewable energy so as to average the burden shared among utilities 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 utilities are obliged to purchase electricity derived from renewable sources; and (ii) the minimum period during which utilities 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.' However, on February 9, 2016, the Japanese Cabinet approved a program of changes to FIT which includes a reverse auction system that will replace the FIT system for large-scale solar projects, and, as it was passed into law by the Diet on May 25, 2016, these changes are expected to take effect on April 1, 2017.

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, 2016).

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
Procurement Price	24.00 yen
Minimum Period	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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Japan signed the Paris Agreement under the United Nations Framework Convention on Climate Change in April. However, the agreement had not been ratified as of May 11, 2016.

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) have adopted their own independent carbon credit systems under which such local governments impose CO₂ emission restrictions on businesses of certain sizes and allow them to use carbon credits.

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.

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

The Renewable Energy Act obligates utilities to connect their substation, transmission and distribution facilities with renewable energy-based power plants if the operator requests it. However, utilities can refuse connection in cases such as following:

- the operator does not bear the connection cost;
- there is a possibility that the smooth electricity supply by the utility may be disrupted by the connection;
- the operator does not provide necessary information to the utility for the connection;
- the relevant connection agreement includes untrue facts, illegal contents or an excessive compensation provision against the utility;
- the operator does not agree to contractual provisions under which (i) the utility can require the operator to reduce electricity output, when electricity supply exceeds demand (without compensation in certain cases)); (ii) the utility 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 utility for its loss in respect of the utility's temporary suspension of business when it undertakes regular or extraordinary investigation or construction for connection purposes; or (iv) the operator agrees to take measures when necessary to reduce output;
- the operator does not (i) permit investigation of its facilities by the

utility; (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 utility, even if it takes reasonable measures to accommodate the new supply

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;

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 gyogyon no kenzenna hatten to gyounwa no toreta saisei kanou enerugi denki no hatsuden no sokushin ni kansuru bouritsu*).

(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?

The Japanese government has established assistance programs for local governments and companies that use renewable energy facilities.²⁵ Local governments and companies must apply for an assistance program by submitting a 'use plan'. If the Minister of Economy, Trade and Industry approves such plan, the local government or company will be granted subsidies for up to 2/3 (in case of a local government) or up to 1/3 (in case of a company) of the necessary costs of the facilities. The scope of "renewable energy" under the assistance program is limited to (i) facilities that generate electricity by means of photovoltaic power, wind power, biomass, hydro power or geothermal power; or

(ii) industrial facilities that make use of solar thermal, thermal difference energy, biomass heat energy, biomass fuel production, heat from snow or ice, or geothermal heat in operation

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 energy sources to which this assistance program is applicable are photovoltaic power, using geothermal heat, solar thermal, wind, thermal difference energy, biomass, snow and ice, geothermal power, and hydroelectric sources.

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 Ōi Nuclear Power Plant in Fukui Prefecture was halted for a regular inspection.

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JORDAN



Hala Qutteineh

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GENERAL

1. What are 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 are 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 was enacted in the year 2015.

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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

No, the Paris Agreement under the United Nations Framework Convention on Climate Change has not been ratified by Jordan yet. Jordan had ratified the Kyoto Protocol in January 2003. Under the Kyoto Protocol, a specific mechanism for carbon credits is specified, which Jordan subsequently follows. 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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KAZAKHSTAN



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GENERAL

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

As the most significant among those for Kazakhstan's economy are oil and gas, coal and other ore minerals, the legal framework in these economic sectors is very well-developed and historically the government has been less focused on the development of alternative energy sources. For instance, at present the majority of power stations in Kazakhstan run on coal, and, in a much less degree, natural gas or oil derivatives.

However, during the last decade the country has started to actively focus on the creation of favorable conditions for the use of renewable energy sources

("RES"). In 2009 the country adopted the Law on Support of the Use of RES ("**RES Law**"). Further, in 2010 Kazakhstan approved the State Program of Boosted Industrial and Innovative Development of the Republic of Kazakhstan in 2010-2014 (the "**Program**"). The Program confirmed the significant potential of RES, such as water, wind and solar power in Kazakhstan in the short-term and medium-term perspective. In particular, according to the

Kazselenergoproject Research Institute, Kazakhstan is the global leader in terms of the potential of its wind power resources per capita, which, undoubtedly, affects the nature of RES projects currently implemented in the country. Moreover, despite the geographic position of Kazakhstan, solar energy resources in the country are stable and acceptable thanks to its favorable climatic conditions. Studies show that the solar energy potential in the southern regions of the country is 2,500 – 3,000 sunny hours per year.

In 2013, Kazakhstan's President approved the Concept of the Transition of the Republic of Kazakhstan to a "green economy", which stipulates that the development of renewable power engineering in Kazakhstan should proceed via the construction of wind and solar power stations with the share of such power stations in total electric power generation to reach 3% in 2020 and 10% in 2030.

As of today there are relatively few alternative energy projects, which are mostly implemented in the area of wind and water power. In 2010 – 2011, the Merke HPS and the first and the only wind power station were put into operation, and in 2012 the only power plant which operates on solar energy started functioning. Following the construction of the first large wind power

station (“WPS”) in Yerementau, Akmola region, in 2014, several dozen WPSs will be constructed in the southern and central regions of Kazakhstan.

The main hydropower potential is in the Almaty region. Eleven hydropower stations (“HPS”) are planned to be built there by 2020. In addition, HPSs will be constructed in the East Kazakhstan, Zhambyl and South Kazakhstan regions.

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

Under the RES Law, RES means sources of energy which are continuously renewable through natural processes, including:

- solar radiation energy;
- wind energy;
- hydrodynamic energy of water; and
- geothermal energy (the heat of soil, underground water, rivers and water bodies);

as well as man-made sources of primary energy resources, such as biomass, biogas and other fuels from organic waste used in electric and/or thermal power generation.

REGULATION

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

In general, matters related to electric and thermal power transmission and consumption are regulated by Law “On Electric Power”, № 588-II dated 9 July 2004 (as amended) (the “**Electric Power Law**”).

The principles of relations in the area of support for the use of RES were first set out in the RES Law (Law “On support of the use of renewable energy sources”, № 165-IV ZRK dated 4 July 2009 (as amended)).

Certain matters in the area of the use of RES are regulated by other legislative acts, such as the Land Code, the Water Code and the Natural Monopolies Law.

Issues arising in the area of biofuel production and turnover are regulated by a special law - Law “On the state regulation of biofuel production and turnover”, № 351-IV ZRK dated 15 November 2010 (as amended).

In addition, there are a number of by-laws regulating certain matters related to the use of RES.

For the purposes of further development of RES and exchange of experience with the world community, Kazakhstan has acceded to the International Renewable Energy Agency (IRENA) and ratified its charter made in Bonn on 26 January 2009 (ratified by Law “On the ratification of the Charter of the International Renewable Energy Agency (IRENA)”, № 82-V ZRK dated 22 March 2013).

In July 2013, the RES Law and some other legislative acts were amended to modify the system of procurement of electric power from RES-using producers. These amendments came into effect on 12 January 2014.

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

Historically, the Ministry of Energy and Mineral Resources was responsible for the issues of renewable energy. In 2010, its functions in the area of state support for the

use of RES were transferred to the Ministry of Industry and New Technologies (“MINT”), which was also responsible for the implementation of state policy and supervision of the power sector (except for oil and gas) as a whole.

Pursuant to the decisions of the president of Kazakhstan, the functions of the Competent Authority for RES issues were first transferred to the Ministry of Environment and Water Resources in October 2013 and then, following the large-scale reorganization of the Kazakhstan Government in August 2014, to the newly created Ministry of Energy (“ME”). The ME is now the competent authority for the electric and heat power spheres, environmental protection and energy efficiency issues as well.

Local executive authorities are responsible for certain functions in the area of the use of RES, including the approval of construction projects in respect of facilities using RES for the generation of thermal energy to be delivered to the centralized heat supply systems, and the reservation and allocation of land for the construction of RES-using facilities.

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

Starting from 2012, the generation, transmission and distribution of electric and/or thermal power, as well as the operation of electric stations, electric grids and substations and the use of RES power, are not licensed activities. However, the purchase of electric power for the purpose of power supply requires a license. Also, designing and construction of a power plant shall require a construction license in accordance with Kazakhstan Law “On Permits and Notifications”, No. 202-V ZRK dated 16 May 2014.

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

No licensing requirement for generation of all types of energy (except nuclear energy).

INCENTIVES

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

The Tax Code does not provide any special tax treatment or additional benefits for activities related to the use of RES. However, from 1 January 2014 R&D conducted in the area of RES are included on the list of types of activities which meet the goals of creating a special economic zone, the “Innovative Technology Park”, where special tax, customs and land use regimes apply.

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

Yes. If previously regional electric grid companies to whose electric grids RES-using facilities were directly connected were required to purchase the full amount of electricity directly from qualified power generating organizations using RES (“Suppliers”), from January 2014 power is purchased from such Suppliers by a special financial settlement center (the “FSC”). In accordance with the RES Law, a power purchase contract with the FSC must be valid for 15 years.

The FSC sells generated power to so-called “conventional customers”, which are:

- power generating organizations using coal, gas, sulphur-containing raw

materials, oil products and nuclear fuel;

- electric market participants acquiring electricity outside the Republic of Kazakhstan; or
- hydro-electric power stations located in one hydro-electric power complex with capacity of over 35 MW (except those commissioned after 1 January 2016).

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

Suppliers may, at their discretion, sell generated electric power using one of the following options:

- to the FSC at fixed tariffs indexed for inflation; or
- to customers at negotiable prices in accordance with general provisions of the Electric Power Law.

Suppliers selling power to customers at negotiable prices are not allowed to sell generated power through the first option.

Please see current fixed tariffs in Annex 1 to this Questionnaire.

10. Has the Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Kazakhstan signed the Paris Agreement on 2 August 2016 (ratification is expected by the end of 2016).

Legal framework for a carbon market is currently under development in Kazakhstan. Carbon credits mechanism was introduced in the Environmental Code of the Republic of Kazakhstan, but operation of the relevant provisions have been suspended until 1

January 2018.

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

New and reconstructed RES-using facilities have a right to free and indiscriminate access to the nearest outlet of the electric or thermal grids of power transmitting organizations.

Power transmitting organizations are required to provide the Suppliers with free access to the transmission of electric and thermal power through the grids and the Suppliers are exempt from payments of fees for the transmission of electric and thermal power to the power transmitting organizations.

Energy produced using RES is given priority for transmission during restrictions of throughput capacity (except for periods of mitigation by the system operator of unified energy system contingencies).

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

Governmental Resolution No.644 dated 12 June 2014 approved an increased fixed tariff (73 tenge/kWh as compared to a common fixed tariff of 34.61 tenge/kWh) for solar plants which use photovoltaic modules based on Kazakhstan origin silicon with total capacity of 37 mW.

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

Thermal power

Sale and purchase contracts in respect of thermal power generated from RES are concluded for a period not shorter than the

pay-back period of a project for the construction of a RES-using facility.

All thermal power generated from RES to be delivered to a centralized thermal supply system of a populated locality is acquired by the power supply organizations of such locality. Costs of thermal power generated from RES are included in the tariff of the power supply organization. Suppliers selling thermal power are exempt from paying the thermal power transmission fees of the power transmitting organizations.

Investment Preferences

In accordance with the Entrepreneurial Code of the Republic of Kazakhstan, investment preferences are granted via an investment contract concluded with the competent authority (currently the Ministry for Investments and Development) and are available for certain types of activities in accordance with the list of priority activities approved by the Government of the Republic of Kazakhstan. Priority types of activities qualifying for investment preferences currently include, inter alia, the generation, transmission and distribution of electricity and manufacturing of electric equipment.

Under an investment contract, an investor may be eligible for the following types of investment preferences: exemption from customs duties; provision of state in-kind grants. In addition, the following preferences will be available for priority investment projects: (i) exemption from corporate income tax; (ii) exemption from land tax; (iii) exemption from property tax; and (iv) investment subsidy.

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 public sources¹, in 2015 the percentage of electricity generated based on RES in the total generation of electricity in Kazakhstan was as follows:

- Hydro – 10,2%
- Wind – 0,14%
- Solar – 0,05%

¹. Available at <http://www.kegoc.kz/>

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KYRGYZSTAN



Magomed Saaduev

KALIKOVA & ASSOCIATES

GENERAL

1. What are 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 are 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). HPP’s with the established capacity of 30 and more MW are considered traditional sources of energy. According to the Law on Renewable Energy, traditional energy is the energy gained from non-renewable energy sources, particularly from hydrocarbons (coal, oil, gas) and hydroelectric power stations with the established capacity of 30 and more megawatts.

- 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 Concept development of small hydropower of the Kyrgyz Republic until 2017 approved by the KR Government Resolution No.507 of July 20, 2015; (vii) the

Regulation on the State Agency for Fuel and Energy Sector under the KR Government, approved by the KR Government Resolution No. 650 of November 14, 2014; (viii) the KR Government Resolution No.4 of January 6, 2016 “On formation of the Open Joint-stock company “National Energy Holding Company”; (ix) 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.

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 National Energy Holding Company which is fully owned by the KR Government and authorized to manage and develop Kyrgyz Energy sector.²; (iii) the Ministry of Economy which is a special authorized body for development of state policy on energy, including renewable energy;³ (iv) 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; (v) 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

² The National Energy Holding Company was formed on the basis of the Ministry of Energy and Industry which was liquidated in November 2015 according to the KR Government Resolution No.768 of 16 November 2015.

³ The Ministry of Economy was authorized to develop state policy on energy and industry after liquidation of the Ministry of Energy and Industry in November 2015.

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.⁴

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.

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: Severelectro OJCS, Vostokelectro OJSC, Oshelectro OJSC, and Jalalabadelectro OJSC. In all companies the majority

⁴ 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, Severelectro, Vostokelectro, Jalalabadelectro, Oshelectro), which own corresponding high voltage power transmission and distribution lines.

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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

The Paris Agreement under the United Nations Framework Convention on Climate

Change is not signed by the Kyrgyz Republic. However according to local mass media the President and the KR Government confirmed that Kyrgyzstan generally agrees with the Paris Agreement and it will be signed a bit later but any exact date was not mentioned.⁵

In the meantime 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.

⁵ http://www.vb.kg/doc/338790_mid:_kyrgyzstan_ne_otkazyvaetsia_ot_podpisanii_klimaticheskogo_soglasheniia.html

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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KLAVINS ELLEX

GENERAL

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

Renewable energy resources are steadily increasing their role in the balance of primary energy resources in Latvia. According to data of the Central Statistical Bureau, in 2014 the share of renewable energy sources comprised 38.7% of the total gross final energy consumption in Latvia, which shows a continuous increase since 2010, when it was 30.4%. The main types of renewable energy resources used in Latvia are solid biomass (wood-pulp) and hydro energy. The majority of electricity generated from renewable energy resources is provided by large hydro power plants (Kegums HES, Plavinas HES and Riga HES), while some is generated by smaller hydro power plants and also wind power plants, biogas power plants, biomass combined heat and power plants, the latter of which have considerably increased their output in recent years. In addition, renewable energy resources (wood pulp) are increasingly being used in cogeneration units. The share of energy generated by renewable energy sources used in transport in 2013 was 3.1% of the entire consumption of energy in the transport (in 2012 it was 2.1%).

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.

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REGULATION

4. 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.

5. 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.

6. 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 connection of the power station to the grid, etc.
- permit for performance of polluting activities might be necessary as well.

The following persons acting in energy sector (electricity) are subject to registration requirement:

- electricity producers, whose power stations exceed 1 MW in capacity, must register with the Register of Electricity Producers;
- electricity traders, whose total sales volumes exceed 4,000 megawatt hours

per annum, must register with the Register of Electricity Traders.

In addition, the possessors of hydro power plants are subject to compulsory third party liability insurance.

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

There is no such particular concept under the Latvian legislation in the energy sector, however, certain activities are exempt from certain licenses. For instance, users of equipment, which is fueled by renewable energy resources, are exempt from the general requirement of obtaining permit of greenhouse effect gas emission for this equipment.

INCENTIVES

8. 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, if they correspond to the efficiency criteria provided in the respective regulations.

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, the following share of total consumption of all end consumers in Latvia shall be comprised of electricity produced from renewable energy resources:

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.

Electricity producers, who generate electricity by means of renewable energy resources, for a period of 20 years since establishing the power plant can 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),

as long as they have not used this right prior to 1 January 2015. Prior to 2015 the state aid was not limited to first 20 years; however, due to EU law on state aid, amendments were adopted in Electricity Market Law in order to avoid providing inequitable benefits to some producers as opposed to others.

The producers generating electricity by means of renewable energy resources may receive a fee for electric capacity installed (biomass,

biogas), if the electrical capacity is at least 1 MW (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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Latvia has not ratified the Paris Agreement, and there is no publicly available information on the intention of ratification in foreseeable future.

However, Latvia has ratified the Kyoto Protocol. 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?

Incentives available to renewable energy generation companies have been reduced in recent years due to the limitations on state aid set forth in EU law. The European Commission has pointed out on the previous over-subsidizing in the energy market in Latvia. Thus, according to the Energy Development Guidelines for 2016-2020 developed by the Ministry of Economics, the future incentives available from state will be technology-neutral and more efficiency-based. Any specific incentives for renewable energy generation companies will have to be approved by the European Commission in advance to their adoption.

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 statistical information from the Central Statistical Bureau of the Republic of Latvia regarding electricity generated from renewable energy sources, GWh.

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	2015
Hydroelectric power plants in total	3457	3520	2887	3706	2912	1993	1860
Wind turbines	50	49	71	112	120	141	147
Biomass power plants	4	9	13	65	215	319	378
Biogas power plants	44	57	107	223	287	350	391
Total	3555	3635	3078	4105	3534	2803	2776
Pro rata share	49,22	48,47	41,93	55,03	46,7	37,6	n/a

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LITHUANIA



Edvinas Beikauskas

ELLEX

GENERAL

1. What are 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 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% and subsequently 23.86% in 2014 (in % of gross final energy consumption)¹. It means that Lithuania has already reached its 2020 target. In the last several years, the use

¹ <http://ec.europa.eu/eurostat/documents/38154/4956088/SUMMARY-RESULTS-SHARES-2014.xlsx/04529edf-13f5-464a-9993-df7a09aee3a9>

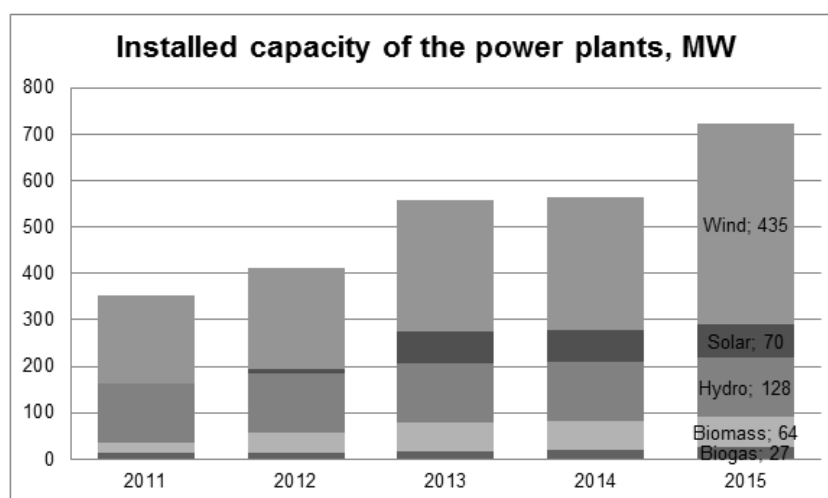
of renewable energy was growing in all sectors. The growth in the electricity sector was mainly determined by installed - new wind power plants, in the heat sector – new biofuel boilers and in the transport sector - mandatory requirements for fuel blending.

In 2015, the total electricity demand of 11,806 TWh and final electricity consumption of 10,015 TWh was fulfilled by 4,6 TWh of local electricity generation (exported 0,253 TWh) and rest of electricity demand was fulfilled by 7,460 TWh of imported electricity (i.e. two thirds of consumed electricity). While the biggest stake of local electricity generation in Lithuania depends on imported fossil fuels, the share of renewable energy sources is also constantly increasing and in 2015 covered nearly half 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. In 2015 there were 435,2 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 during 2016.

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.



Source – National Commission for Energy Control and Prices.

In 2014, the share of renewable energy sources in heating and cooling sector was 41.61%. In the heating sector the share of biofuel equaled approximately 38.9% of the fuel consumed for heating (and cooling) in 2014, 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 4.19 % in 2014 (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 2015 there were 74 GWh of solar energy generated and supplied to the grid (e.g. in 2012 – 2 GWh). The installed capacity of solar power plants increased up to 69,6 MW in 2015, 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 are the definition and coverage of renewable energy under the relevant legislation?

Following Article 2(a) of the Directive 2009/28/EC, the Law on Renewable Energy provides the definition of renewable energy sources covering wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.

Moreover the Lithuanian law extends the primary concept of renewable energy sources, thus covering “any other renewable non-fossil energy sources, exploitation of which is technologically feasible or will be feasible in the future”. Such extended definition enables the energy policy decision makers to apply relevant legislation for the benefit of new technologies becoming available for commercial use of energy production.

However, despite the renewable energy definition in force, for the purposes of electricity generation, currently the limited scope of power plants does fall under the established support framework: wind, biomass and solar power plants, as well as hydro power plants not exceeding 10 MW of installed capacity may only apply for support schemes, including fixed price (feed-in tariff) and other related guarantees, secured by the State.

REGULATION

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

In Lithuania the renewable energy sector is mainly regulated by the State, establishing general principles for development of

renewable energy generation capacities, commercial activities of energy production and energy trading. Regulations of the renewable energy sector also include the framework for the promotion of energy from renewable sources, or the support schemes secured by the State for renewable energy companies.

The regulatory framework of the renewable energy sector in Lithuania is structured based on the Law on Renewable Energy (adopted in 2011 as further amended), which transposes the Directive 2009/28/EC into the national law, as well as on other laws adopted by Parliament and promulgated by the President.

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

- The Law on Renewable Energy (adopted on 12 May 2011 as further amended) establishes legal background for public management, regulation, supervision and control of the renewable energy sector, as well as the basic principles for commercial activities in the renewable energy sector. The Law aims at sustainable development in the use of renewable energy sources, promotion of new energy generation technologies, and increased consumption of energy from renewable sources. The Law structures general national framework, i.e., schemes and legal instruments, for support of renewable energy;
- The Law on Implementation of the Law on Amendments and Supplement to the Law on Renewable Energy adopted on 17 January 2013. The key objective of this law is to review and slow down the uncontrolled expansion

of small capacity solar power plants that occurred due to regulatory loopholes and extremely high feed-in tariffs during 2012. This law aims at changing the validity period of certain issued permits to develop electricity generation capacities for solar power plants, feed-in tariff application rules, as well as respective rights and obligations of developers active in the solar energy sector;

- The National Energy Independence Strategy, approved by the Parliament on 26 June 2012, sets key objectives for the Lithuanian energy sector for the period leading up to 2020 and outlining the vision of the energy sector up until 2050. As a task for development of the national energy sector, the Strategy *inter alia* targets an increase of the share of renewable energy sources in final gross consumption of energy;
- The Law on Energy (new wording adopted in December 2011, as further amended) establishes objectives of the State energy sector regulation, including promotion of the use of local and renewable energy sources as one of the principal objectives. The competence of the Government, as well as the competence of other public authorities acting within the energy sector is established;
- The Law on Electricity (new wording adopted in January 2012, as further amended) establishes the principle of public service obligations in the electricity sector related to the public safety, environmental safety, diversification of energy sources, as well as renewable energy generation; and
- The Law on Heat Sector (new wording adopted in 1 January 2008 as further amended) establishes the principle of promotion for usage of local fuel, bio-

fuels and renewable energy sources for the heat energy generation. It is stated that the Government and local municipalities shall ensure support for take-off (purchase guarantee) of the heat energy produced using renewable energy sources, waste combustion and geothermal energy. Such take-offs are determined as a public service obligation.

Basic provisions established in the laws are further elaborated in a more detailed procedural level by the secondary legislation acts adopted by the Government, the Ministry of Energy, the National Control Commission for Prices and Energy (National Regulatory Authority), or other competent public authorities.

By April 2016 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 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 date of 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 (of which 7,7164 MW were still available for 1 April 2016).

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 who were already holding issued permits to develop electricity generation capacities in power plants not exceeding 30 kW of installed capacity were 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 quarterly 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 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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Lithuania signed the Paris Agreement under the United Nations Framework Convention on Climate Change on 22 April 2016, however the agreement has not been ratified yet.

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 36 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 fully 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 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. It 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?

The quantity of electricity produced in 2015 by using the renewable energy resources equaled 1 611 GWh (not including the Kruonis Pumped Storage Plant): the biggest quantity of electricity was produced in the wind power plants – 50.1 percent, and in the hydro power plants – 21.4 percent. The quantity of electricity produced in the biofuel power plants and in the biogas power plants constituted 23.9 percent, in the solar power plants – 4.6 percent.

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MACEDONIA



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GENERAL

1. What are 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 are 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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

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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MONTENEGRO



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GENERAL

1. What are 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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

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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GENERAL

1. What are 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 the 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 it in the following years;

- Achieving a 10% share of biofuels in the transport fuel market by 2020 and increasing 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, the 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 EU legislation, will be subject to renewable technologies becoming economically sustainable and should be based on the use of national resources. The new energy policy stresses that the support systems for renewables should not distort the market and cause energy prices to increase. It also states that state support for the development of renewable energy sources should promote technologies allowing for energy storage in periods of

high supply and with minimum impact on the stability of the grid. It is assumed that any kind of support for renewable energy sources should not extend beyond 2030.

In line with these policy changes, the renewable energy support scheme was substantially modified on July 1, 2016 (please see point 8 and 9 below for more information). The new renewable energy support scheme provides for preferential support mechanisms for renewable technologies using local resources (biomass) and ensuring the stability of the grid (especially co-combustion of biomass and coal in so-called “dedicated co-firing installations”, i.e., installations in which more than 15% of energy is generated from biomass, biogas, agricultural biogas and bio liquids) to the detriment of the development of certain other technologies (such as wind and solar energy technologies).

2. What are 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.

¹ The Act of February 20, 2015, on Renewable Energy Sources (Journal of Laws of 2015, item 478).

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”).

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.

² The Act of April 10, 1997, the Energy Law (Journal of Laws of 2012, item 1059, as amended).

³ Journal of Laws of 2007, No. 93, item 623, as amended.

The Ministry of Energy is responsible for shaping the national policy with regard to renewable energy sources.

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).

Location of wind power plants has recently been made subject to severe restrictions provided in the Act on Investments in Wind Energy Projects.⁴ According to its provisions a wind power plant cannot be located in a distance shorter than tenfold its height (including the rotor and blades) from the nearest residential building. Given the dispersed mode of settlement of a Polish countryside, it is feared that the introduction of such minimal distance requirement will make the location of new wind power plants practically impossible.

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, interconnected to a grid of the rated voltage lower than 110 kV, 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, interconnected to a grid of the rated voltage lower than 110 kV, 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 the case of energy production in small installations) or by the President of the Agricultural Market Agency (in the case of energy generation from agricultural biogas and bio liquids).

⁴ The Act of May 20, 2016, on Investments in Wind Energy Projects (Journal of Laws of 2016, item 961).

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 incurred 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 July 1, 2016, under the former renewable energy support scheme, all renewable energy installations used to benefit from a purchase guarantee of renewable energy generated in such installations. Mandatory purchases of energy

produced in renewable energy installations were 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 was unlimited in volume and in time.

The current support scheme foresees a gradual departure from 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 or trading, or to pay a substitute fee (the "quota obligation") and a switch to the auctioning system in which renewable energy installations bid to receive support in the form of guaranteed prices for pre-determined amounts of energy generated each year.

Under the regime applicable from July 1, 2016, the mandatory purchase obligation applies to (i) producers entitled to remain in the green certificate regime who do not exercise the option for voluntary transition to the auctioning regime (however, starting from January 1, 2018, the mandatory purchase obligation with respect to installations which remain in the green certificate regime will be limited only to installations of a capacity below 500 kW), (ii) micro installations and (iii) installations of a capacity below 500 kW that have won auctions. Its term is, however, limited to 15 years from the date energy was produced in a renewable energy installation for the first time. Other renewable energy producers do not benefit from the purchase guarantee. They 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 former regime applicable until July 1, 2016, there was no guarantee of minimum prices for renewable energy; the “obligated suppliers” had to purchase energy produced from renewable energy installations at an average price of energy on a competitive market published by the President of the ERA on a yearly basis. Prices of green certificates were determined by the market as well.

Under the current regime auction winners benefit from guaranteed energy prices in the amounts declared in their winning bids. The term of this support is to be determined in a notice of an auction and cannot be longer than 15 years from the date on which a renewable energy installation generated energy for the first time. The support is granted in the form of:

- for installations of a capacity below 500 kW – guaranteed energy prices in offtake contracts concluded with obligated suppliers;
- for other auction winners – payments to a special purpose vehicle established by the state to manage the support for renewable energy installations in the auctioning system. These payments will cover the negative balance (if any) resulting from the difference between average energy prices on the market (determined based on energy prices on the Polish commodity exchange) and prices of energy established in the bids of the auction winners.

With respect to renewable energy installations operated by prosumers, the RES Act provides for certain energy settlement advantages enabling such

prosumers to benefit from lower energy prices in periods in which their own production does not cover their energy consumption.

10. Has the Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Poland signed the Paris Agreement on April 22, 2016; in order to ratify it, the president of Poland will have to obtain the consent of the parliament.

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. The system is currently in 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 are, however, still 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 are also granted to existing power plants.

The principles of the EU ETS have been implemented in Poland in the Act on the Greenhouse Gas Allowances Trading System⁵ and the Act on the Greenhouse Gas

⁵ Journal of Laws of 2015, item 1223, as amended.

Emissions Management System.⁶

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 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, when refusing the interconnection, is obligated to indicate a date on which the interconnection will be technically possible following the necessary expansion or modernization 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 to electric energy generated from renewable energy sources.

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?

Investment aid can be granted for the development of renewable energy projects within the framework of the EU grants awarded under the Operational Program Infrastructure and Environment 2014-2020 and regional operational programs. Investors planning to implement renewable energy related projects can also apply for financial support from national funds for environmental protection. In particular, the National Fund for Environmental Protection and Water Management offers (i) loans for the development of distributed renewable energy production and (ii) loans or subsidies for the purchase and installation of new facilities for the production of energy (and heat) from renewable energy sources in residential buildings. These support mechanisms are, however, not specifically

⁶ Journal of Laws of 2015, item 2273, as amended.

aimed at the development of domestic technologies.

As regards incentives for the development of renewable technologies using locally available resources, the RES Act introduces a mechanism based on which support for biomass combustion plants (including co-firing plants) may be granted subject to the use of a given share of “local” biomass (produced a maximum of 300 km away from the installation in which it is used) in the total amount of biomass used in such plants.

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

Polish law provides 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 interconnection to the grid in the amount of 50% of the interconnection fee (the interconnection fee is calculated on the basis of the actual costs incurred 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 Biofuels⁷ for 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 fuels and liquid biofuels sold, traded or used by it in road and rail transport 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, or use such fuels for their own purposes, on the territory of the Republic of Poland. The National Indicative Target for 2016 is 7.10% (and 7.80% in 2017).

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 – 2015 (based on green certificates issued) based on data published by the Energy Regulatory Authority.

⁷ Journal of Laws of 2006, No. 169, item 1199, as amended.

Type of renewable energy source	2005	2006	2007	2008	2009	2010
Biogas	104,465.281	116,691.863	161,767.939	220,882.924	295,311.796	363,595.743
Solar	0	0	0	0	1.328	1.672
Biomass	467,975.678	503,846.206	545,764.936	560,967.435	601,088.244	635,634.844
Wind	135,291.628	257,037.412	472,116.429	806,318.563	1,045,166.230	1,823,297.061
Water	2,175,559.099	2,029,635.604	2,252,659.312	2,152,943.187	2,375,767.238	2,922,051.638
Co-firing	877,009.321	1,314,336.612	1,797,217.058	2,751,954.127	4,287,815.430	5,243,251.417
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
Type of renewable energy source	2011	2012	2013	2014	2015	
Biogas	430,537.322	529,384.449	665,143.194	803,125.465	873,269.913	
Solar	177.805	1,177.532	1,418.771	4,514.874	40,897.867	
Biomass	1,101,188.962	2,208,508.115	3,846,121.796	4,615,077.438	4,490,125.286	
Wind	3,128,672.517	4,612,893.792	6,078,433.878	7,640,802.091	10,536,563.669	
Water	2,316,833.384	2,031,724.612	2,439,274.973	2,181,135.795	1,828,417.274	
Co-firing	5,999,582.057	6,714,155.690	3,751,860.243	4,462,167.696	4,120,825.586	
Total	12,976,992.047	16,097,844.190	16,782,252.855	19,706,823.359	21,890,099.595	

As estimated based on the data gathered by the President of the ERA as of June 30, 2015, the amount of energy sold to final customers in 2014 was 122,000,000 MWh. Electricity generated from renewable energy sources amounted to: (i) 15.3% of the aggregate amounts of energy sold to final consumers, calculated based on the numbers of green certificates issued; and (ii) 13.3% of the aggregate amounts of energy sold to final consumers, calculated based on the numbers of green certificates submitted for cancellation.⁸

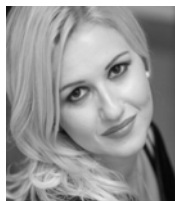
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⁸ Source: Energy Regulatory Authority.

ROMANIA



Irina Moinescu



Nisa Jecu

TUCA ZBARCEA & ASOCIATII

GENERAL

1. What are 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 member 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 are 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; (v) dispatchable generation units, which exceed the quantities notified through the hourly physical notifications submitted by the producers to the transmission and system operator; and (vi) 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 authorisation 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. 1015/2015 approving the 2016 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. 101/2015;
- 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 organisation 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 authorised 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 2016 quota has been determined by ANRE and approved by the Government at 12.15% of the final gross electricity consumption, such being slightly higher than the quota approved for 2015 (i.e. 11.9%).

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. As per the secondary regulation issued by ANRE, the postponed green certificates will be released for trading in monthly instalments, pro rata with the average number of the green certificates postponed each month. 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.

As regards the ANRE report on overcompensation for the year 2015, although it concluded that there is a risk of overcompensation for the solar plants, no new reduction measures will be adopted considering that the promotion scheme applies only for the plants commissioned or refurbished before the end of 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 have amended the existing secondary regulations in order to implement this exemption. However, this has not happened up until the date of this Report.

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 authorisation 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 authorisation decision of the EC.

However, meanwhile, new EU guidelines have been issued which raise the 125 MW thresholds 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 centralised 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 authorised 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, centralised and non-discriminatory manner, on the centralised 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 2016, 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, organisational and functional perspectives.

ANRE is entirely financed from its own income deriving from tariffs charged for the release of authorisations 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 centralised 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 authorisation 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 neighboring 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 authorising 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 authorisation 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 authorised expert, which analyses 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 authorisation 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 analyses 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 energisation 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 authorisation**

The execution of any electricity generation capacity having an installed capacity exceeding 1 MW is conditional upon obtaining the setting-up authorisation from ANRE.

Such authorisation 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 authorisation), 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 for the entire calendar year (i.e. from January to December), irrespective of the date 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 authorisation and fire security authorisation

The civil protection authorisation is an administrative act attesting to the fulfilment of the measures for complying with the civil safety requirements, while the fire security authorisation is an administrative act attesting to the fulfilment 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 authorisation**

The environmental authorisation 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 authorisation**

The water management authorisation 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 authorisation 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 energisation shall be provided in the connection agreement and it will last until complying with the conditions for final energisation, but no more than 24 months.

- **Connection certificate**

The connection certificate certifies the fulfilment of the conditions provided in the grid connection permit and further establishes technical conditions for using the grid after energising the project. The final energisation of the project is conditional upon the issuance of the connection certificate.

- **Final energization**

The connection process is deemed completed after the final energisation of the project. If the preliminary energisation of the project is not mandatory, the issuance of the connection certificate shall be succeeded directly by such final energisation.

- **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 authorisation).

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 centralised 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 centralised 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 centralised wholesale markets**

As it shall be further detailed in a subsequent section, wholesale electricity transactions can only be performed in the centralised markets operated by OPCOM. As such, in order to be able to trade the generated electricity, producers should first register in any of the centralised markets referred to below.

Centralised Market of Bilateral Agreements

The Centralised Market of Bilateral Agreements is an organised 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 centralised 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 organised 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 authorisations 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 authorisations 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 fulfilment 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 centralised markets operated by OPCOM, the current energy law requires transactions to be concluded in a transparent, public, centralised and non-discriminatory manner. According to ANRE's official interpretation of such legal provisions, wholesale electricity transactions can only be performed in the centralised markets operated by OPCOM, namely: (i) the Centralised 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, such methodology was not published in the Official Gazette of Romania.

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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

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.

Romania has signed the Paris Agreement under the United Nations Framework Convention on Climate Change on 22 April

2016 but it has not yet ratified it.

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 harmonised 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 transitional free allocation for the modernisation of electricity generation and electricity produced from waste gases). The auctioning procedure of greenhouse gas emission allowances is regulated in Romania under Government Emergency Ordinance No. 115/2011 establishing the institutional framework and authorisation 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 recognised 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 recognised 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 guaranteed 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.

However, from time to time, different state aid schemes may be developed by the central or local authorities that may be also helpful in supporting such area of activity.

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 8 operational programs. From the Regional Operational Program (ROP) 2014-2020, will be financed, for example, the acquisition and installation of alternative systems for electricity generation from renewable energy sources. The projects may be submitted with the competent Agency for Regional Development until 16 November 2016.

Also, some additional measures related to the energy sector (such as stimulating the production of non-commercial renewable energy through the construction and/or refurbishment of generation capacities of electricity from biomass and geothermal energy) could be financed from the Large Infrastructure Operational Program (LIOP) 2014-2020.

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 2015, out of the total electricity generated in Romania, about 40% was generated from renewable sources as follows:

Hydro	27.15%
Wind	11.15%
Solar	1.19%
Biomass	0.17%

(Source ANRE Report on the results of the electricity market monitoring in December 2015)

As regards the total generation capacity installed as at 1 April 2016, out of a total of 24,631.943MW, renewable energy generation capacities covered 11,186.932 MW, as follows:

Hydro	6733.619MW
Wind	3007.694MW
Solar	1324.146MW
Biomass	121.423 MW
Geothermal	0.050 MW

(Source: The official website of the Romanian transmission and system operator (Transelectrica))

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RUSSIA



Adam Smith



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GENERAL

1. What are 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, renewables have historically played a relatively small role in the country's fuel mix. However, the outlook has been changing, and 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 Policy in Increasing the Effectiveness of Use of Renewable Energy Sources for the period until 2024.¹ The Guidelines have been updated a number of times, most recently in November 2015. Under the Guidelines, it is planned that Russia will achieve 4.5% of power generation using renewables by 2024 (from a base of 1% in 2009). In addition, the Russian Government has approved a new State Program on Energy Efficiency and Energy Sector Development to provide for government financial support (including

in the form of subsidies) to encourage the development of renewable energy in Russia.² This State Program refers to an interim target of 2.5% for power generation based on renewable sources by 2020. The Russian Government's Energy Strategy for the period up to 2030³ also addresses the development of renewable energy sources and energy-saving technologies.

In January 2016 the Russian President signed an order resolving to hold a Year of the Environment in Russia in 2017⁴ in order to attract public attention to environmental issues. It is hoped that this will provide an opportunity to create momentum for the development of green technology in Russia.

Hydropower potential

Hydropower is one of Russia's greatest energy resources. Nine percent of the world's hydropower resources are located within the territory of Russia, mostly in Central and Eastern Siberia and in the Russian Far East. The North Caucasus and western Urals are also understood to have considerable hydropower potential.

¹ Government Decree No. 1-r, dated 8 January 2009.

² Government Decree No. 321, dated 15 April 2014.

³ Government Decree No. 1715-r, dated 13 November 2009.

⁴ President Order No. 7, dated 5 January 2016.

Russia currently has in operation 102 hydroelectric plants having a capacity of over 100 MW. The total installed capacity of hydroelectric units is about 46,000 MW. Hydroelectric plants account for almost 20.6% of Russia's total electric power output.⁵ In addition, the current national scheme for the development of the power sector by territory until 2030 envisages the construction or expansion of a significant number of large-scale (over 100 MW) hydroelectric plants.⁶

The investment program for 2016-2020 of RusHydro, the state-controlled hydropower generator, reflects the country's continued investment in hydropower generation. The program provides for commissioning of an additional 915.48 MW of capacity in various regions of Russia, including the Nizhne-Bureiskaya and Nizhne-Zeiskaya projects in the Amur Region, Ust-Srednekanskaya in the Magadan Region and Gotsatlinksaya in Dagestan.⁷ At the end of 2014, RusHydro completed commissioning of the Boguchanskaya hydroelectric plant, one of the largest in Russia, with a capacity of 2,997 MW.⁸

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 Industry⁹ 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 for the development of the power sector by territory until 2030 envisages the construction (expansion) of up to 16 wind farms in Russia by 2030.¹⁰

Russia has a large number of isolated local power systems with no connection to the national power grid, and renewables are seen as having potential to supply such regions in particular. In 2015, a consortium including Mitsui & Co., Komaihaltec Inc. and Fuji Electric Co., working in cooperation with the state-owned regional power company, RAO Energy Systems of the East, installed a pilot wind power and smart grid system in the isolated township of Ust-Kamchatsk in Kamchatka. This project has the potential to become a model for the introduction of wind power and micro-grid systems in many of Russia's isolated communities.¹¹

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.¹² However, as at July 2015 biofuels had an insignificant share in the overall energy production matrix of Russia, estimated at 1.2%, with biomass accounting for only 0.5%.¹³

The Russian Government is making efforts to promote bioenergy. In April 2012, it approved a Complex Program for the Development of Biotechnologies for the period until 2020, which is intended to

⁵ <http://www.eng.rushydro.ru/industry/history/>

⁶ Government Decree No. 2084-r, dated 11 November 2013.

⁷ <http://www.eng.rushydro.ru/press/news/99722.html>

⁸ <http://www.boges.ru/gidrostantsiya/istoriya-stroitelstva/>

⁹ <http://rwi.ru/en/main.php?lang=EN>;

¹⁰ Government Decree No. 2084-r, dated 11 November 2013.

¹¹ https://www.mitsui.com/jp/en/topics/2016/1218942_8921.html

¹² <http://lesa-rossii.ru/>

¹³ http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Biofuels%20Annual_Moscow_Russian%20Federation_7-1-2015.pdf

establish a basis for the development of bioenergy and support for regional projects for the production of energy and heat from biofuel.¹⁴

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. A forestry sector study in respect of the Russian Far East prepared by the Food and Agriculture Organization of the United Nations in cooperation with the EBRD has identified opportunities for biofuel investments in this region in particular, due to its high availability of wood residues and forest industry waste.¹⁵ The Russian Federal Forestry Agency has developed a list of priority projects for biofuel production in Russia.

In addition, Russia has large potential to develop peat as a biofuel. (The country has up to 47% of the world's peat resources.) The Ministry of Energy has prepared a draft law that includes peat in the list of renewable energy sources which, if approved, would allow thermal power plants using peat as fuel to benefit from the regulatory support mechanisms.¹⁶

While there is currently is no specific government program to promote the construction of biogas facilities in Russia, there are a handful of biogas projects in operation, including one in the Kaluga region using biogas from agricultural waste. It has been reported that agreements have been signed recently for the construction of

an additional 50 bioenergy stations using agricultural waste with total capacity of 120 MW in 27 Russian regions, including in the Belgorod, Voronezh and Rostov regions.¹⁷

Geothermal power potential

Geothermal energy is used in Russia both for heat supply and for power generation. Russia's geothermal resources are located primarily in Kamchatka, the Kuril Islands, the Northern Caucasus and the Kaliningrad Region. Currently there is understood to be 82 MW of geothermal power generation capacity in operation.¹⁸ 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.¹⁹ In 2011 Russia signed an inter-governmental agreement with Iceland on cooperation in the development of geothermal energy and, in June 2011, Rushydro signed a cooperation agreement with Reykjavík Geothermal to build geothermal power plants in Russia (primarily in Kamchatka), with total installed capacity of up to 200 MW.²⁰ RusHydro has a number of other plans for geothermal energy, including a project to increase the installed capacity of the Mutnovsky geothermal power plant in Kamchatka.²¹ In addition, it is reported that the Institute of Thermal Physics of the Siberian Branch of the Russian Academy of Sciences and

¹⁴ 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.

¹⁵ <http://www.ebrd.com/news/2014/ebd-and-fao-promote-viable-forests-in-russias-far-east.html>

¹⁶ [http://asozd.duma.gov.ru/main.nsf/\(Spravka\)?OpenAgent&RN=1009335-6](http://asozd.duma.gov.ru/main.nsf/(Spravka)?OpenAgent&RN=1009335-6)

¹⁷ http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Biofuels%20Annual_Moscow_Russian%20Federation_7-1-2015.pdf

¹⁸ http://www.geothermal-energy.org/electricity_generation/russia_kamchatka.html

¹⁹ Report on Geothermal Energy Projects in Russia published in the Bulletin of Russian Academy of Physical Science, No. 1 2009

²⁰ Rushydro official press release, dated 15 June 2011.

²¹ <https://pangea.stanford.edu/ERE/db/WGC/papers/WGC/2015/26074.pdf>

Rushydro have signed an agreement to build Russia's first geothermal binary cycle power plant, on the Kamchatka Peninsula.²²

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 recent years Russia has shown a significant interest in developing domestic production of solar equipment, as a high-tech industry.

In 2015 Hevel, the largest integrated solar power company in Russia launched the country's first full-cycle plant for the manufacture of solar cells. Located in Novocheboksarsk, Chuvash Republic, it has the capacity to manufacture 97.5 MW of thin-film solar modules annually. In October 2015 Hevel launched the first stage (out of seven) of a 10 MW solar power plant in Buribay, Republic of Bashkortostan. Design and construction work is now underway on large solar power plants in the Orenburg and Saratov regions and also in other parts of the country.

Solar power projects have predominated in the tenders for new renewable generation projects on the wholesale power market conducted in 2014-2015. In 2014, 33 solar projects were selected for construction under capacity supply agreements and a further 14 were selected in 2015. The projects selected in 2015 include projects sponsored by Solar Systems, Avelar Solar Technology and T Plus that, once completed, will represent 280 MW of capacity.²³

2. What are 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")²⁴. The definition includes:

- solar energy;
- wind energy;
- water energy (including energy from waste water), excluding use of such energy at pumped storage hydroelectric 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 domestic refuse dumps; and
- gas from coal workings.

²² <http://www.aquatherm-spb.com/en/News/kamchatka-geothermal/>

²³ <http://www.atsenergo.ru/vie/proresulst/>

²⁴ Article 3 of the Electricity Law.

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 principles 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.²⁵

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.
- The Guidelines for State Policy in Increasing the Effectiveness of Use of Renewable Energy Sources for the period until 2024, adopted by Government Decree No. 1-r, dated 8 January 2009. The Guidelines outline proposed steps by state authorities to

promote a greater use of renewables, establish targets for power generation using renewable energy sources and lay down various pricing and other parameters to be applied in the operation of the regulatory support mechanisms.

- 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 to 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.
- Government Resolution No. 850, approving the criteria for granting subsidies from the federal budget to compensate for the costs of technological connection of qualifying renewable generating facilities with a capacity not exceeding 25 MW, dated 20 October 2010. Pursuant to this Resolution, Ministry of Energy Order No. 380 dated 22 July 2013 approves the rules for granting subsidies from the federal budget for renewable projects to benefit from the compensation scheme.
- The rules for maintaining the register of issuance and cancelation of certificates confirming volumes of power generated by generating facilities based on renewable energy sources, adopted by

²⁵ Non-Commercial Partnership “Council of the Market for maintaining an effective system for the wholesale and retail trade in power and capacity” (the “Market Council”).

Government Resolution No. 117 dated 17 February 2014.

- 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 long-term 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”), which 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.

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

The Russian power market has a number of regulatory and coordinating bodies exercising different functions, but the principal regulatory body having immediate responsibility for the administration of incentives for renewable generators is the Market Council. In particular, the Market Council is responsible for certifying generating facilities using renewable energy sources as qualifying generating facilities and for maintaining the register of certificates confirming the volumes of power generated by them. Other relevant regulatory bodies include the Federal Antimonopoly Service and regional (Federation Subject) authorities having responsibility for the power sector, which together administer retail market power tariffs.

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 power market. The wholesale market is open to generators whose 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.

In order for a renewable project to benefit from the various forms of support available under the regulatory regime, the operator must obtain from the Market Council a certificate confirming that the project meets the criteria to be a qualifying renewable facility. In order to qualify, the facility must:

- use only renewable energy sources or a combination of renewable and other energy sources for generating purposes;
- be in operation;
- be connected to the grid and equipped with metering equipment as required by Russian law; and
- be included in the general scheme and program for the long-term development of the power sector of the region of the Russian Federation in which it is located. (In the case of projects whose power is to be sold on the retail market, inclusion in the scheme and program is on the basis of tender.)

In addition, power generating facilities are treated as hazardous industrial facilities, the operation of which may require additional permits, including environmental approvals.²⁶

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 noted, any generating facilities with a capacity of less than 25 MW can operate on the retail market, which is more lightly regulated.

²⁶ 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.

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 interest rate applicable to the deferred tax is to be within the range of one 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?

There is no general purchase guarantee as such. However, the Electricity Law provides for the following support mechanisms:

- 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.²⁷ In practice, the Government has chosen to implement the latter, as further described below.
- A requirement for network companies to buy power for the purposes of compensating for network losses primarily from renewable energy

²⁷ Article 21(1) of the Electricity Law.

sources.²⁸ This mechanism has been implemented on the retail power market.

The wholesale capacity market support system is open to solar, wind and small-scale (less than 25 MW) hydroelectric projects. A certain volume of renewable generation projects of each type is selected through an annual tender process. (The first such tenders were held in 2013.) Successful bidders qualify to enter into long-term agreements for the delivery of renewable capacity (“ADRCs”)²⁹, analogous to similar agreements that exist to support investment in conventional thermal generation. The contract entitles the operator of the project to receive capacity payments from wholesale market power buyers over a fifteen-year supply period. The payments are calculated on a basis that is intended to allow for recovery of capital invested (subject to certain limits) and a fixed rate of return (in principle 14% for projects selected before 1 January 2016 and 12% for projects selected thereafter). The capacity payments actually received are subject to a number of adjustments, including by reference to the degree of localization achieved by the project and its capacity utilization factor.³⁰ In November 2015, in response to the recent sharp devaluation of the Rouble, the Government amended the applicable regulations so as to give investors some relief from exchange rate risks for projects due for implementation after 1 January 2015 on the basis of tenders performed

before that date.³¹

Separately, a regulation was adopted in January 2015 to provide the detailed legislative basis for the renewables purchase obligation imposed on network operators on the retail market, including the methodology for calculation of the applicable tariffs. In order to limit the cost burden imposed by this system on local power systems, certified renewable generation operating on the retail market in any given region is restricted to 5% of projected network losses in that region, with the inclusion of renewable projects in the local generation plan being on the basis of tender.

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 as such but, as noted above, makes general provision for an incentive mechanism through either the addition of a premium to the wholesale market price or preferential treatment in the capacity market, and the Russian Government has chosen the latter option (which provides assurance of a certain level of capacity payment for projects that are successful in the tender process). Further, renewables are supported on the retail power market by the renewable purchase obligation imposed on the distribution network operators, power sold under which is subject to tariff regulation.³²

²⁸ Article 32(3) of the Electricity Law. Government Decree No. 47 dated 23 January 2015

²⁹ The full name is “*agreements for the delivery of capacity of qualifying generating objects functioning on the basis of renewable energy sources*”.

³⁰ Government Decree No. 861-r amending the Policy Guidelines, dated 28 May 2013.

³¹ Resolution No. 1210 dated 10 November 2015 and Regulation No. 2279-r dated 10 November 2015.

³² Article 3(2) of Regulation No. 1178, dated 29 December 2011, On Price Formation in the Sphere of Regulated Prices (Tariffs) in Electrical Power.

10. Has the Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

On 14 April 2016 the Government issued Decree No. 670-r approving the Paris Agreement. Russia signed the Paris Agreement on 22 April 2016, the first day the document was open for signature.³³ However, the agreement has yet to be ratified in Russia - ratification will require a federal law to be passed by the Russian Parliament and signed by the President. According to the draft Government Resolution approving measures for the ratification of the Paris Agreement in Russia, a draft of such federal law is to be submitted to the Government for review by December 2019.³⁴

The Paris Agreement requires each signatory state to set its intended “nationally determined contribution” with respect to targets for the reduction in emissions of greenhouse gases (“GHG”) and to pursue domestic measures to achieve them. Russia has submitted an intended national contribution indicating a reduction in emissions by 2030 to 70-75% of 1990 levels.³⁵

In fact, Russia already has in place general regulations aimed at achieving this target, although the exact mechanisms are yet to be decided. Presidential Decree No. 752 “On the Reduction of Emission of Greenhouse Gases” dated 30 September 2013 established

a national target of achieving by 2020 a level of GHG emissions not exceeding 75% of the 1990 level. Pursuant to this Decree, the Government has in 2014 approved a set of measures to achieve this target³⁶, and in 2015 issued a resolution³⁷ approving a concept for the establishment of a system for monitoring, reporting and reviewing the volume of GHG emissions in Russia. This concept is due 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, there is a system of state subsidies applied towards the network connection costs of renewable energy projects with an installed capacity of not more than 25 MW.³⁸

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

Promotion of the use of locally manufactured equipment is a central policy objective of the regulations for the support of renewable generation. 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 facilities of the principal types. These are: (i) for wind projects, 25% for 2016, rising to 65% from 2019; (ii) for solar projects, 70% from 2016; and (iii) for hydroelectric projects (with capacity less

³³ http://www.mid.ru/en/web/guest/vsemirnaa-meteorologiceskaa-organizacia-vmo-/-/asset_publisher/xBdCUCbW9A2i/content/id/2248604

³⁴ <http://regnum.ru/news/polit/2104864.html>

³⁵ <http://www4.unfccc.int/submissions/INDC/Submission%20Pages/submissions.aspx>

³⁶ Government Decree No. 504-r, dated 2 April 2014.

³⁷ Government Resolution No 716-r, dated 22 April 2015

³⁸ Article 21(1) of the Electricity Law.

than 25 MW), 45% for 2016, rising to 65% from 2018.³⁹ Facilities that do not achieve the applicable target level receive significantly reduced capacity payments or power tariffs, as applicable.

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

In addition to the measures already mentioned, the Policy Guidelines and Energy Strategy⁴⁰ 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.⁴¹ Likewise, the percentage of power generated from renewable sources did not exceed 1% (8.5 billion KWH) of the total volume of generation.⁴² We are not aware of any officially published statistics breaking down this aggregate figure by specific types of renewable energy on a country scale.

As already noted, however, large-scale hydroelectric stations make a significant contribution to Russia's power production (at approximately 20.6%).

³⁹ Government Decree No. 1-r, dated 8 January 2009.

⁴⁰ Part III of the Policy Guidelines, Article 10 of the Energy Strategy.

⁴¹ Part II of the Policy Guidelines.

⁴² Ibid.

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GENERAL

1. What are 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.

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").

In Slovakia, the policy approach to the transposition of the EU renewable energy objectives into the national context is to a large extent shaped by (i) concerns about the higher cost of renewable energy sources in comparison to the conventional ones; (ii) the existing energy mix which is not considered suitable for supporting the electricity generation from unpredictable renewable energy sources (solar and wind); as well as (iii) the relatively high energy intensity of the Slovak economy. This is coupled with a strong political support for the generation of electricity from nuclear energy focused on the completion of two 440 MW nuclear units and a separate project of construction of a new nuclear power plant. The National Action Plan for Renewable Energy adopted by the Ministry of Economy of the Slovak Republic (the “Ministry of Economy”) in October 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

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.

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 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 elektrizačná a prenosová sústava, a.s. (“SEPS”)) has suspended the issuance of consents to the connection of wind farms to the network. Following the considerable increase in the installed capacity of solar power plants (with wind and solar energy being regarded as carrying with them very similar risks), it is unlikely that wind energy projects could become of any importance in the foreseeable future.

Another renewable energy source with certain, if not large, potential is geothermal energy. It is currently used at a local level in several locations within Slovakia mainly for the production of heat. More intensive use of geothermal energy is constrained in

particular by technical barriers.

2. What are 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,

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., Act No. 173/2015 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.

the technical parameters of which are comparable to those of natural gas);

- aerothermal energy (defined as energy available in the form of heat in the air); and
- hydrothermal energy (defined as energy available in the form of heat in the surface water).

REGULATION

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

The renewable energy sector is regulated mainly by the Renewable Energy Act, the Network Industries 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

⁶ Act No. 250/2012 Coll. on regulation in network industries, as amended by Act No. 435/2013 Coll., Act No. 321/2014 Coll. and Act No. 391/2015 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., Act No. 321/2014 Coll. and Act No. 91/2016 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., Decree of RONI No. 143/2015 Coll., Decree of RONI No. 226/2015 Coll. and decision of the Constitutional Court of the Slovak Republic No. 220/2016 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).

contains specific measures ensuring the promotion of electricity generated from renewable energy sources, the Network Industries Act contains the framework for the price regulation in the energy sector and the Energy Act regulates in particular the licensing procedure and approvals of investments in the energy sector.

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

The principal regulatory bodies in the renewable energy sector are the Ministry of Economy and RONI. Supervisory powers are exercised by the Slovak Commercial Inspection.

The Ministry of Economy bears the main responsibility for the formulation of renewable energy policy. It effectively regulates the construction of new renewable energy facilities through issuing certificates on the compliance of the investment plan of an energy generating facility with the long-term concept of the Slovak energy policy (the “Energy Policy”).⁹ Such compliance certificates are currently required for all power plants with the total installed capacity equal to or greater than 1 MW except for solar power plants where a compliance certificate is required already for power plants with the total installed capacity equal to or greater than 100 kW. The Ministry of Economy may also impose obligations in the general economic interest on electricity producers in order to ensure the use of renewable energy sources in the generation of electricity or on the distribution system operators and transmission system operator in order to ensure preferential access, connection, transmission, distribution and supply for electricity generated from renewable energy sources. However, such

⁹ The Energy Policy is approved by the Government of the Slovak Republic based on a proposal prepared by the Ministry of Economy.

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 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

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, EUR 44.0150/MWh in 2015 and EUR 33.8520/MWh in 2016.

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:

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

I. Installations put into operation from 1 January 2016:

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		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		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

¹¹In 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.

¹¹ Act No. 561/2007 Coll. on investment aid, as amended.

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 could 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.

10. Has the Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Slovakia has signed but not yet ratified the Paris Agreement. The current Slovak government is aiming to promptly ratify the Paris Agreement and it is expected that the process should be finalized by the end of 2017.

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.

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).² 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.

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 2014 (in GWh)	% of Gross Electricity Production in 2014
Total	27,401	100
Renewable Energy Sources	6507	23.75
Hydro All Plants	4,462	16.28
of which: hydro 1 MW (net of pumping)	45	0.16
hydro 1-10 MW (net of pumping)	104	0.38
hydro 10+ MW (net of pumping)	4060	14.82
pumped storage ³	253	0.92

² 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.

³ Under the Renewable Energy Act, electricity produced in pumped storage hydropower plants is not counted towards electricity produced from renewable energy sources.

Geothermal	x	x
Solar (Photovoltaic)	597	2.18
Wind	6	0.02
Municipal Solid Wastes (Renew)	22	0.08
Wood/Wood Wastes/Other Solid Wastes	916	3.34
Biogases	479	1.75

Source: The data on gross electricity production in GWh are cited according to the publication Energy 2014, published by the Statistical Office of the Slovak Republic in December 2015.

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GENERAL

1. What are 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 August 2016, there are 245 generation licenses for wind, 907 generation licenses for hydropower, 36 generation licenses for geothermal and 64 generation licenses for biomass power projects in Turkey. There are also 4 wind power and 127 hydropower license applications which have been found acceptable by EMRA and 6 wind power and 52 hydropower license applications currently pending before EMRA.

As of July 2016, there are more than 4500 applications for license-exempt electricity generation by the relevant distribution companies. The total installed capacity of the accepted applications is more than 2,700,000 kW.

2. What are 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.

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

¹ Published in the Official Gazette No. 25819 dated 18 May 2005.

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, 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 before the preliminary license application is made except for the wind, solar, hydro and geothermal power plants. EIA Affirmative Approval or EIA Is Not Required Decision must be received during

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.

the preliminary license period, which is a maximum of 24 months, for the wind, solar, hydro and geothermal power plants. 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.

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

⁷ Published in the Official Gazette No. 18749 dated 9 May 1985.

⁸ Published in the Official Gazette No. 18916 dated 2 November 1985.

⁹ Published in the Official Gazette No. 27214 dated 29 April 2009.

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

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.

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.

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.

¹³ Both the Regulation and Communiqué are published in the Official Gazette No. 28783 dated 2 October 2013.

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.

Enerji Piyasaları İşletme Anonim Şirketi (“EPIAŞ”) 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 EPIAŞ 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 EPIAŞ. 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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Turkey entered into the Framework Convention in 2004 and became a party to the Paris Agreement on 22 April 2016. However, the Protocol is not ratified yet, and thus currently it is not effective in Turkey.

Turkey is among the Annex-I countries under the Framework Convention; however it is not included in Annex B, which sets forth the liabilities of the Annex-I countries. As a result, Turkey does not have any liability under the Paris Agreement, which are basically obliging developed countries to undertake economy-wide absolute emission reduction targets and enhancing their mitigation efforts. However,

Turkey is subject to the common liabilities applicable for all contracting parties, such as the preparation of nationally determined contributions. Besides; due to its special statute, Turkey is eligible for receiving support from the developed countries for the implementation of the agreement. Turkey has submitted its intended nationally determined contribution on 30 September 2015. In this document, Turkey has stated that its main target is 21 percent reduction of greenhouse gas emissions by 2030 and to make required reforms in seven different fields, which are energy, industry, transportation, buildings and urban transformation, waste, and forestry.

Turkish government has not issued any national legislation for implementation of the Paris Agreement and intended nationally determined contributions. However, the Ministry of Environment and Urban Planning prepared a Communiqué on Voluntary Carbon Market Project Registration¹⁴ to fulfil the liabilities of Turkey in accordance with the Framework Convention and Kyoto Protocol which was signed by Turkey on 5 February 2009 under the Framework Convention. 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.

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

Article 6/C of the Renewable Energy Law provides that EMRA shall give priority to the facilities generating electricity from renewable energy resources in terms of their connection to the transmission and/or distribution systems.

¹⁴ Published in the Official Gazette No. 28790 dated 9 October 2013.

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. This regulation was repealed and replaced by a new one on 24 June 2016. The new regulation provides, same as the repealed one that at least 55% of the equipment must be domestically produced to benefit from this incentive. Until now, 16 renewable energy projects have benefited from this incentive.

Unlike the repealed one, the new regulation does not cover the license exempt electricity generation facilities. Although, the regulation regarding the license-exempt facilities still has a provision which gives them the right to benefit from domestic equipment incentive, there is a draft regulation which

also repeals that provision. Therefore, in accordance with the existing actions of the Turkish government the license exempt facilities in Turkey will not be able to benefit from the domestic equipment incentive.

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 based generation facilities with a minimum established power of 1 MW and micro cogeneration facilities exempt from the obligation to obtain a license or establish a special purpose company. Individuals and legal entities generating electricity within the scope of this provision benefit from the above stated guaranteed prices for 10 years if they generate more than their needs and transmit such excess to the system.

Besides, the Turkish Parliament has recently enacted Law No. 6719¹⁵ (the “Amending Law”), which amends the EPL. The Amending Law introduces the concept of “renewable energy resource areas”, and provides additional incentives to the renewable energy based power plants to be constructed in such areas as follows:

- (i) a separate domestic equipment usage threshold will be determined under a regulation to be issued by the Ministry, which is expected to facilitate the use of domestic equipment incentive by such power plants;
- (ii) prior to the amending law, in practice, the transmission lines required for the connection of renewable energy based power plants to transformers were constructed by the generation companies and the cost of construction was reimbursed by Türkiye Elektrik

¹⁵ Published in the Official Gazette No. 29745 dated 17 June 2016.

İletim Anonim Şirketi (“TEİAŞ”), the state-owned electricity transmission company; the Amending Law provides that these lines will be constructed by TEİAŞ itself prior to the date of operation of the relevant power plant;

- (iii) measurement data will no longer be required with regard to generation facilities to be constructed on renewable energy resource areas.

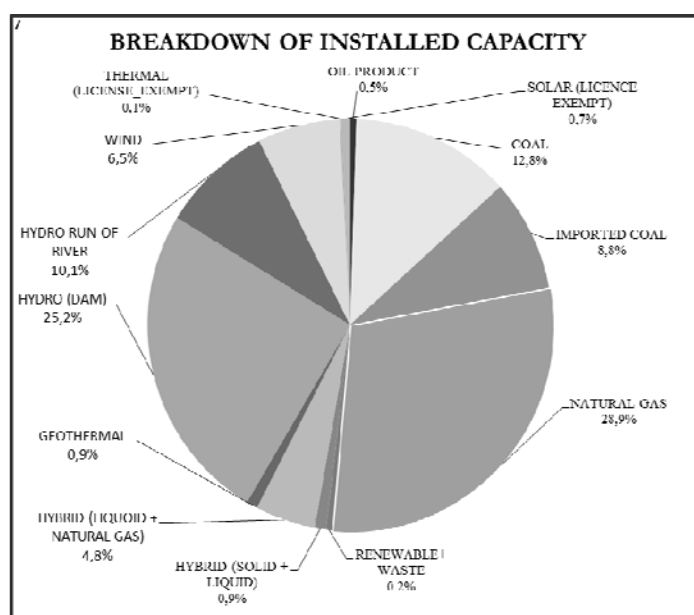
The Amending Law also introduces a purchase guarantee mechanism for the privatization of renewable energy based power plants owned by Elektrik Üretim Anonim Şirketi (“EÜAŞ”). According to this new privatization method, the winning bidder will not pay any transfer price for the transfer of the facility or shares and the bargaining will take place by way of reduction of electricity sales price to be sold to Türkiye Elektrik Ticaret ve Taahhüt

Anonim Şirketi (“TETAŞ”), the state-owned electricity wholesale company. Therefore, there will be a purchase and price guarantee from TETAŞ regarding the renewable energy based power plants after their privatization. The Ministry will issue a regulation to set forth the principles and procedures regarding such tenders.

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 July 2016 is 73.146,7 MW. The breakdown of such installed capacity is as follows (Source: TEİAŞ).



Electricity generation in Turkey was approximately 261.7 billion kWh in 2015 while electricity consumption was 265.7 billion kWh in the same year (Source: TEİAŞ)

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UKRAINE



Oleksandr Polonyk



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AVELLUM

GENERAL

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

Ukraine experiences deficit of energy and is a major importer of energy resources (especially natural gas, and lately energy coal). At the same time energy intensity of Ukraine's economy is astonishing (3 – 4 times higher than in developed countries).

Development of renewable energy industry in Ukraine helps save conventional energy resources and reduce anthropogenic impact on the environment. Growth in the installed capacity and output of electricity from renewable energy sources would help diversify energy resources and lead to strengthening of Ukraine's energy security, which became a priority for the nation.

Currently, energy producers operate over 200 power plants generating energy from renewable energy sources, which make up an insignificant portion in Ukraine's energy balance. According to calculations of the Institute of Renewable Energy Industry of the National Academy of Science, the technically feasible potential for renewable energy sources in Ukraine amounts to approximately 50% of the overall energy consumption.

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

The Law of Ukraine “*On Alternative Energy Sources*” defines renewable energy sources as:

- solar energy;
- wind energy;
- geothermal energy;
- wave and tidal energy;
- hydro energy;
- biomass energy;
- organic waste gas;
- gas from sewage treatment plants; and
- biogas.

The law determines that all the renewable energy sources are also considered alternative energy sources. The latter, being a broader term, also includes secondary energy resources, specifically blast-furnace and coking plant gas, methane from coal deposits and dump energy potential of technological processes.

The Tax Code of Ukraine contains a similar definition of the renewable energy sources.

REGULATION

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

The renewable energy sector of Ukraine is regulated by a number of laws adopted by the Ukrainian Parliament and secondary legislation adopted by the relevant regulatory bodies. The legislative framework includes the following key laws and regulations:

- Law of Ukraine “On Alternative Energy Sources”;
- Law of Ukraine “On Electricity Industry”;
- Law of Ukraine “On Functioning of Electricity Market of Ukraine”;
- Law of Ukraine “On Lands for Energy Sector and the Legal Regime of Special Zones for Energy Objects”;
- Regulation of the NEURC “On Approval of Procedure for the Establishment, Revision and Termination of the “Green” Tariff for Business Entities and Private Households”;
- Regulation of the NEURC “On Approval of the Procedure for Determining the Level of Use of the Ukrainian Produced Equipment at Electric Power Facilities, Including the Commissioned Construction Phases (Start-Up Complexes) that Produce Electricity from Alternative Energy Sources (Except for Blast Furnace and Coking Gases, and for Hydro – Only Micro- Mini- and Small Hydro Power Plants) and Establishing the Respective Premium to the “Green” Tariff”; and
- Regulation of the NEURC “On Approval of Rules for Connection of Power Units to Power Grid”.

Important policy documents are:

- Instruction of the Cabinet of Ministers of Ukraine “On the National Action Plan For Renewable Energy until 2020”; and
- Resolution of the Cabinet of Ministers of Ukraine “On Approval of the State Targeted Economic Program for Energy Efficiency and Development of the Production of Energy from Renewable Energy Sources and Alternative Types of Fuel for 2010-2016”.

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

The principal regulatory body in the Ukrainian renewable sector is the National Electricity and Utilities Regulation Commission (the “NEURC”). The principal state authority responsible for state policy and governance in the energy industry is the Ministry of Energy and Coal Industry of Ukraine.

Certain aspects of the renewable energy sector are governed and regulated by the Ministry of Regional Development, Construction, Housing and Public Utilities of Ukraine, the Ministry of Ecology and Natural Resources of Ukraine, and the State Agency of Ukraine for Energy Efficiency and Energy Saving.

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

The key license necessary for renewable energy project in Ukraine is a license for electricity generation issued by the NEURC (except for license-exempt generation outlined in item 6 below). On top of that, in order to benefit from the “green” (feed-in) tariff an alternative energy producer would need to make a separate application to the NEURC for the “green” (feed-in) tariff. In

addition, a number of other permits, consents and agreements may need to be obtained/concluded for renewable energy projects including, without limitation:

- permits, approvals, agreements and/or consents for obtaining ownership or lease rights to the land plot;
- certificates, declarations and other approvals in relation to construction and commissioning of the facilities;
- agreements with the system operator (depending on the capacity of the generating facility this may be the transmission system operator or the distribution system operator) on connection to the grid;
- accession agreement to the Agreement among the Members of the Wholesale Electricity Market of Ukraine; and
- power purchase agreement with the State Enterprise “Energoynok”, the operator of the wholesale electricity market of Ukraine.

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

Yes. Electricity generation using alternative energy sources (except for blast furnace and coking gases) with generating equipment with installed capacity of up to 10 MW is exempt from licensing by the NEURC, the energy regulator, provided such electricity is produced for own consumption (*i.e.*, not for sale on the wholesale electricity market of Ukraine).

INCENTIVES

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

Companies involved in renewable energy generation benefit from certain tax incentives.

Generally, import of goods to Ukraine is subject to value added tax (the “VAT”) at the 20 per cent rate. However, the Tax Code of Ukraine exempts import of the following goods from VAT:

- equipment powered by renewable energy sources;
- equipment and materials for generation of energy from renewable energy sources; and
- materials, equipment, and components used to manufacture equipment powered by renewable energy sources, materials, raw materials, equipment and components, which are to be used for generation of energy from renewable energy sources.

Such goods are also exempt from customs duties under the Customs Code of Ukraine.

The exemption from the VAT and customs duties applies only if the taxpayer uses such goods in its own production and identical goods of equivalent quality are not manufactured in Ukraine. The Cabinet of Ministers of Ukraine approves the list of goods eligible for exemption from the VAT and customs duties.

Generally, supply of electric energy is subject to excise tax in Ukraine at 3.2 per cent. applicable to the price of such electric energy (exclusive of VAT). However, the

Tax Code of Ukraine exempts supplies of electricity produced from renewable energy sources from the excise tax.

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

Yes. There is a purchase guarantee for the producers of electricity that have been granted the “green” (feed-in) tariff. In accordance with article 17¹ of the Law of Ukraine “*On Electricity Industry*”, the wholesale electricity market (specifically its operator, the State Enterprise “Energoynok”) must purchase all the electricity generated from renewable energy sources by a producer that has been granted the “green” tariff (as decreased by the volume of the electricity consumed by the generating facility). The purchase guarantee applies irrespective of the size of the installed capacity of the generating facility or the volume of the output. Such electricity is purchased at the “green” tariff.

The state guarantees that this mechanism will be available and set forth in a law until expiration of the “green” tariff on 1 January

2030.

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

Producers of electricity from alternative energy sources (except for blast furnace and coke gas) are eligible to sell such electricity at a special price, the “green” (feed-in) tariff. The “green” tariff varies for each type of alternative energy and also depends on when the relevant generating facility is commissioned. The regulator approves “green” tariffs individually for each producer (only households have their “green” tariffs approved generally without linking the tariff to each individual producer). The “green” tariff is set to expire on 1 January 2030.

The green tariff is calculated by multiplying the January 2009 retail tariff for Class 2 consumers (UAH0.5846) and the “green” tariff index determined by the law. The “green” tariff indices are as follows:

Generating facilities entitled to green tariff	“Green” tariff index depending on the date of commissioning of the generating facility							
	Until 31.03.2013	01.04.2013-31.12.2014	01.01.2015-30.06.2015	01.07.2015-31.12.2015	01.01.2016-31.12.2016	01.01.2017-31.12.2019	01.01.2020-31.12.2024	01.01.2025-31.12.2029
wind energy facilities with capacity below 600 kW	1.20	-	-	-	-	-	-	-
wind energy facilities with capacity from 600 kW to 2,000 kW	1.40	-	-	-	-	-	-	-
wind energy facilities with capacity over 2,000 kW	2.10	-	-	-	-	-	-	-
wind energy facilities with each wind turbine having capacity below 600 kW	-	1.20	1.08	1.08	1.08	0.96	0.84	
wind energy facilities with each wind turbine having capacity from 600 kW to 2,000 kW	-	1.40	1.26	1.26	1.26	1.12	0.98	

wind energy facilities with each wind turbine having capacity over 2,000 kW	-	2.10	1.89	1.89			1.68	1.47
biofuel energy facilities	2.30	2.30	2.07	2.30			2.07	1.84
biogas energy facilities	-	2.30	2.07	2.30			2.07	1.84
ground-mounted solar energy facilities	8.64	6.30	5.67	3.15	2.97	2.79	2.51	2.23
roof-top solar energy facilities with capacity over 100 kW	8.28	6.48	5.83	-			-	-
roof-top solar energy facilities with capacity below 100 kW	7.92	6.66	5.99	-			-	-
roof-top solar energy facilities	-	-	-	3.35	3.20	3.04	2.74	2.43
household roof-top solar energy facilities with capacity below 30 kW	-	6.66	5.99	3.72	3.53	3.36	3.02	2.69
household wind energy facilities with capacity below 30 kW	-	-	-	2.16			1.94	1.73
micro hydro energy facilities	2.16	3.60	3.24	3.24			2.92	2.59
mini hydro energy facilities	2.16	2.88	2.59	2.59			2.33	2.07
small hydro energy facilities	2.16	2.16	1.94	1.94			1.75	1.55
geothermal energy facilities	-	-	-	2.79			2.51	2.23

The “green” tariffs are linked to the official UAH/EUR exchange rate determined by the National Bank of Ukraine as at 1 January 2009 (specifically UAH10.85546/EUR1.00). On the quarterly basis the NEURC, the energy regulator, adjusts the “green” tariffs based on the average official UAH/EUR exchange rate determined by the National Bank of Ukraine for the 30 calendar day period preceding the date of the session of the regulator.

The generating facility is eligible for an increase of its “green” tariff (additional 5% or 10%), if the facility has been commissioned between 1 July 2015 and 31 December 2024 and the qualifying level of equipment of Ukrainian origin has been used in its construction (see details in item 12 below).

10. Has the Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

Ukraine signed the Paris Agreement on 22 April 2016, but has not ratified it yet. According to the statement of the Head of the Committee of Foreign Affairs of the Ukrainian Parliament, the Paris Agreement will be ratified by the end of 2016.

Currently there is no carbon credits mechanism in Ukraine. The Ministry of Ecology and Natural Resources of Ukraine has recently announced that it is working on the scheme for greenhouse gas emission allowance trading. The Ministry has also published a concept for the implementation of such scheme based on Directive 2003/87/EC.

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

Yes, renewable energy generation companies have priority in certain cases. In accordance with article 24 of the Law of Ukraine “*On Electricity Industry*”, electricity suppliers that distribute electricity using their own power networks may not refuse access to the grid to the renewable energy generation companies.

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 facility is eligible for an increase of its “green” (feed-in) tariff (additional 5% or 10%), if the facility has been commissioned between 1 July 2015 and 31 December 2024 and the qualifying level of equipment of Ukrainian origin (local content) has been used in its construction.

If the local content of the generating facility exceeds 30%, such facility’s “green” tariff may be increased by 5%, and if the local content exceeds 50%, the “green” tariff may be increased by 10%.

The local content is calculated as a sum of weighted percentages of various elements of the generating facility. The law assigns specific weighted percentage to each major component of a generating facility of a particular type. For example, a wind energy generating facility has the following principal components with assigned weighted percentages: blades (30%), tower (30%), nacelle (20%) and main frame (20%).

The NEURC determines the level of the local content of a generating facility based on an application filed by the operator of the

generating facility. The application among other things must include certificates of origin in order to confirm Ukrainian origin of the components of the generating facility. The certificates of origin are issued by the Chamber of Trade and Industry of Ukraine (or its local branches).

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

The main incentives available to renewable energy generation companies are “green” (feed-in) tariff, as well as the VAT and customs duties exemptions (see details in item 7 above).

Few other benefits available to renewable energy companies are of regulatory nature. While most generating companies are obliged to sell their electricity in the wholesale electricity market (*i.e.*, direct contracts are unavailable to them), renewable energy companies may sell electricity directly to consumers. Furthermore, while the capacity threshold for the “license-exempt generation” in conventional energy is 5MW, in the renewable energy sector a producer does not require a license for the operation of a renewable energy facility having capacity of up to 10MW.

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?

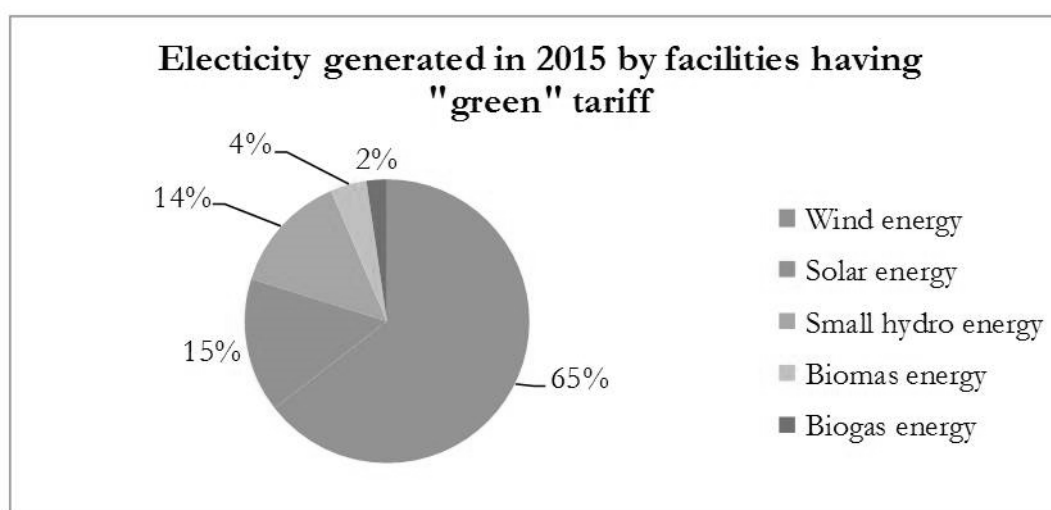
According to the State Statistics Service of Ukraine, in 2014 Ukraine saw 5.6% decrease in overall electricity generation (183 billion kWh compared to 194 billion kWh in 2013).

According to Razumkov Centre, an NGO, in 2015 the overall electricity generation fell by further 13.6% to 157 billion kWh. This is mainly attributable to annexation of Crimea, continuing hostilities in the Eastern Ukraine, as well as decline in economic output.

Major share (94.5%) of electricity generation in Ukraine is secured in nearly equal parts by heat and nuclear power plants. In 2014 renewable energy generation facilities secured 5.95% of the electricity generated in

Ukraine. Hydro power contributed 5.1%, while all other renewable energy sources account for 0.85%.

According to the State Agency of Ukraine for Energy Efficiency and Energy Saving, in 2015 renewable energy generation companies having the "green" (feed-in) tariff produced 488.223 million kWh of electricity. This amount was split among major types of renewable energy sources as follows:



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UNITED KINGDOM



Tallat Hussain¹



Katy Norman

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GENERAL

1. What are 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.¹

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 participants⁴. 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

¹ As a result of recent political turbulence relating to a potential Brexit, uncertainty has pervaded the issue of renewable energy. However, a common viewpoint would suggest that key environmental principles relating to renewable power are so enshrined within UK legislation, that its sudden demise is unlikely.

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/clc734-cutting-carbon-in-europe-2020-plans.pdf>

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 depressed emissions more than anticipated. Any 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 2016⁷. Phase III also broadens the scheme to include more industrial sectors (e.g., aluminum production, bulk organic chemical processing and more greenhouse gasses (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.⁸ 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)⁹. 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% currently¹⁰;

- The Renewable Energy Target, under which the UK has committed to deriving 15% of all energy from renewable sources by 2020 and Europe's target of 40% by 2030 (in line with the EU Renewable Energy Directive). In 2015, renewable energy sources accounted for 24.7% of total UK electricity generation, with wind and bioenergy being the main contributors¹¹.
- A carbon price floor, which was implemented on 1 April 2013.¹² This changed 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;¹³ The carbon price floor will be capped at £18 per ton of carbon dioxide from 2016-17 to 2019-2020;¹⁴ and
- Government support for carbon capture and storage technology development. The UK Carbon Capture and Storage (CCS) Commercialization Competition made available £1 billion capital funding,

⁶ See http://ec.europa.eu/clima/policies/ets/index_en.htm

⁷ See http://ec.europa.eu/clima/policies/ets/reform/index_en.htm

⁸ See http://ec.europa.eu/clima/policies/ets/monitoring/docs/gd1_guidance_installations_en.pdf

⁹ See <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02012R0601-20140730&from=EN>

¹⁰ See http://ec.europa.eu/clima/policies/ets/index_en.htm

¹¹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/511939/Renewables.pdf

¹² See http://www.hm-treasury.gov.uk/d/carbon_price_floor.pdf

¹³ See <https://www.gov.uk/climate-change-levy-application-rates-and-exemptions>

¹⁴ See <https://www.gov.uk/government/publications/carbon-price-floor-reform>

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 bidders out of four to the planning and design stage, the Peterhead Project in Aberdeenshire (CCS at the existing gas-fired power station would be transported and stored in a gas reservoir beneath the North Sea); and the White Rose Project in Yorkshire (storage in a saline aquifer beneath the North Sea for which White Rose received a EUR 300million grant from the European Commission).¹⁵ In September 2015, due to reduced renewable subsidies, Drax announced its withdrawal as a partner of Capture Power Ltd, the developer of the White Rose CCS Project. This withdrawal, together with the November 2015 UK government announcement that the £1 billion ring-fenced capital budget for the CCS Competition was no longer available has had an unfortunate impact on the UK's CCS industry. In April 2016, the UK's Energy Secretary announced a Development Consent Order would not be granted for the White Rose CCS project on the grounds that there is no funding available and no prospect of sufficient funding being made available¹⁶.

- 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)¹⁷. 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 2020¹⁸. 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.¹⁹ Since its inception, the GIB has supported 75 green infrastructure projects, committing approximately £2.6bn to the UK's green economy, into transactions worth approximately £10.6bn²⁰.

In March 2016, the GIB announced further investments:

- GIB will help Stirling Council save £31m by financing an energy-efficient street lighting project. The council will borrow £9.87m over four financial years using the GIB's Green Loan, and it is expected that power consumption will fall by 63% and greenhouse gas emissions will fall by the equivalent of 14,400 tonnes over the project's lifetime. The energy that will be saved per year is estimated to be comparable to total electricity consumed by over 850 homes²¹.
- GIB alongside Equitix committed £10m to the expansion of the Wick district heating scheme. Pursuant to this

¹⁵ www.parliament.uk/briefing-papers

¹⁶ See https://sequestration.mit.edu/tools/projects/white_rose.html

¹⁷ See <http://www.greeninvestmentbank.com/>

¹⁸ This target was set by the Committee on Climate Change in 2008

¹⁹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/336552/green-investment-bank-annual-report-2013.pdf

²⁰ See <http://www.greeninvestmentbank.com/>

²¹ See <http://www.greeninvestmentbank.com/news-and-insight/2016/gib-will-help-stirling-council-save-31m-by-financing-energy-efficient-streetlighting-project/>

upgrade, it is expected the district heating network will reach 150 new customers. The investment also aims to reduce greenhouse gas emissions by an additional 3,000 tonnes of carbon dioxide per year²².

- Acquisition of GLID Wind Farms by GIB (Offshore Wind Farm) and funds managed by BlackRock. The acquisition was the first time that operating offshore wind farms within the UK were owned by non-utility investors.

In March 2016, the UK government launched the process to privatise the GIB, involving the sale of the UK government's existing shares in the GIB and the commitment of additional capital from new investors²³. On 19 April, the House of Lords passed the Enterprise Bill, required to proceed with the privatisation of the GIB. It is hoped that the privatisation will enable the GIB to deliver a greater green impact, driving further capital investment. A 'Special Share' has been authorized by the UK government to protect GIB's green mission²⁴. The Enterprise Bill received Royal Assent on 4 May 2016 and is now an Act of Parliament (the Enterprise Act 2016). Clause 29 of the Enterprise Bill 2015-2016 will have the following effects²⁵:

1. Pursuant to the sale of shares in GIB, repeal the bulk of the Enterprise and

Regulatory Reform Act 2013 ('ERRA 2013');

2. Retain the Secretary of State's power to provide funding to the GIB and the requirement for the government to provide a copy of GIB's annual report before Parliament each year (during the time period for which it is a shareholder in the GIB); and
3. Necessitate the government to Parliament and devolved administrations, stipulating plans for the sale of GIB (prior to when the repeal of ERRA 2013 can come into effect)²⁶.

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 2013²⁷. 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.²⁸ The current RO regime will be closed to all new generation from 31 March 2017, with developers offered a choice between CfD and RO between 2014 and

²² See <http://www.greeninvestmentbank.com/news-and-insight/2016/gib-and-equitix-commit-10m-to-expansion-of-wick-district-heating-scheme/>

²³ See <http://www.greeninvestmentbank.com/news-and-insight/2016/uk-green-investment-bank-privatisation-process-to-launch/>

²⁴ See <http://www.greeninvestmentbank.com/news-and-insight/2016/uk-green-investment-bank-to-establish-a-special-share/>

²⁵ See <http://uk.practicallaw.com/cs/Satellite/resource/7-621-1328>

²⁶ See <http://uk.practicallaw.com/cs/Satellite/resource/7-621-1328>

²⁷ Royal Assent was granted in December 2013.

²⁸ See <https://www.gov.uk/government/collections/electricity-market-reform-contracts-for-difference>

2017.²⁹ 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.³⁰ On 16 May 2016, the RO closed to onshore wind operators, but solar operators and onshore wind operators that meet certain criteria may be eligible for a grace period that could make them eligible for RO accreditation until 31 January 2019³¹.

Electricity generation that is accredited under the RO will continue to receive support until the scheme closes in 2037.³²

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 of 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 demand³³. This translates into the equivalent of powering approximately 3 million homes³⁴. The government is attempting to increase the amount of onshore wind power produced in order to make it a key component of the UK’s renewable energy mix by 2020.³⁵ Wind energy is currently the cheapest large-scale renewable energy source that can be deployed on a large scale.³⁶

In 2015, bioenergy accounted for 35% of renewable energy fuel use and generation from bioenergy increased to a record high of 29.0 TWh, an increase of 28% on 2014 figures. Generation from plant biomass increased from 13.1 TWh in 2014 to 18.8 TWh in 2015 (largely attributable to the full coal to biomass conversion of a third unit at

²⁹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/289076/Transition_and_Grace_Periods_Government_Response_-_12_Mar_2014.pdf

³⁰ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/371384/Annual_Update_Print.pdf

³¹ See <https://www.ofgem.gov.uk/publications-and-updates/frequently-asked-questions-closure-renewables-obligation-ro-onshore-wind-great-britain>

³² See <https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/the-renewables-obligation-ro>

³³ See <http://infrastructure.planningportal.gov.uk/projects/yorkshire-and-the-humber/hornsea-offshore-wind-farm-zone-4-project-two/>

³⁴ See <http://www.smartwind.co.uk/the-zone.aspx>

³⁵ See <https://www.gov.uk/onshore-wind-part-of-the-uks-energy-mix>

³⁶ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42852/5936-renewables-obligation-consultation-the-government.pdf, page 46.

Drax in July 2015)³⁷.

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.³⁸

Approximately 2%³⁹ 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 utilized, 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 2% of current UK generating capacity.⁴⁰

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 2010⁴¹ and the Department of Culture, Media & Sport (DCMS') Climate Change Plan 2010-2012⁴² 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 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 and is on track to meet the first three carbon budgets.

The Climate Change Act (2008) requires the Secretary of State to set the level of the fifth carbon budget for the 2028-2032 period, by June 2016. The Committee on Climate Change published its advice on the recommended level of the fifth carbon

³⁷ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/511939/Renewables.pdf

³⁸ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/197993/consultation_notification_process_new_build_dedicated_biomass_projects.pdf

³⁹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415998/renewables.pdf

⁴⁰ See <https://www.gov.uk/harnessing-hydroelectric-power>

⁴¹ See <http://www.defra.gov.uk/publications/2011/03/26/climate-change-plan-2010-pb13358/>

⁴² See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/78335/DCMS_Climate_Change_Plan2010_12.pdf

budget in November 2015, which would limit annual emissions to 57% below 1990 levels⁴³.

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)⁴⁴, 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.⁴⁵ 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 2015, renewables accounted for 24.7% of electricity generation, up from 19.1% in 2014.⁴⁶

In November 2013, the government updated the UK Renewable Energy Roadmap⁴⁷, which analyses the progress which has been made in meeting the targets established under the EU Renewable Energy Directive⁴⁸ 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.⁴⁹ The Capacity Market is designed to financially incentivize 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.⁵⁰

⁴³ See <https://www.theccc.org.uk/publication/the-fifth-carbon-budget-the-next-step-towards-a-low-carbon-economy/>

⁴⁴ 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*.

⁴⁵ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228752/9780108508394.pdf

⁴⁶ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415998/renewables.pdf

⁴⁷ See <https://www.gov.uk/government/publications/uk-renewable-energy-roadmap-second-update>

⁴⁸ 2009/28/EC

⁴⁹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/371384/Annual_Update_Print.pdf

⁵⁰ See <https://www.gov.uk/government/collections/electricity-market-reform-capacity-market>

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 carbon emissions by 2050 are at least 80% lower than the 1990 baseline (for the period 2023–2027).⁵¹ 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.⁵²

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).⁵³

The Energy Act 2011, which received Royal Assent on 18 October 2011, establishes the framework to implement the Coalition government’s “Green Deal”⁵⁴ 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)⁵⁵ 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 (“ECO2”).⁵⁶

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.⁵⁷ 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,⁵⁸ is being replaced by the EMR, as

⁵¹ Section 1(1), Climate Change Act 2008, Ch. 27 Part 1.

⁵² See <https://www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050/supporting-pages/carbon-budgets>

⁵³ See <http://www.legislation.gov.uk/ukpga/2008/32/contents>

⁵⁴ 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.

⁵⁵ See <https://www.ofgem.gov.uk/environmental-programmes/energy-companies-obligation-eco/previous-energy-efficiency-schemes>

⁵⁶ 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>

⁵⁷ Section 57 Energy Act 2013

⁵⁸ *The England & Wales and Scotland Renewables Obligation Orders were introduced in April 2002. In*

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.⁵⁹ Certainty is provided because key terms cannot be altered, even in the event that a future government seeks to change policy objectives. The program for EMR has been established to attract the £110 billion of capital investment⁶⁰ 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 2016, the government has published an array of guidance, regulations and legislation including the Electricity Market Reform Delivery Plan,⁶¹ the CfD standard terms and conditions⁶², the Electricity Market Reform (General) Regulations 2014⁶³, the

Capacity Market Rules⁶⁴, and the Electricity Market Reform Annual Update 2014⁶⁵. The final CfD Allocation Framework was published on 1 September 2014⁶⁶, and updated on 2 October 2014.⁶⁷ 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.⁶⁸

Reference Price

In December 2013, DECC produced the first EMR Delivery Plan which sets out strike prices for CfDs for the period 2014/15 – 2018/19.⁶⁹ 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 possible⁷⁰. The prices are designed to be broadly comparable to the support levels

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 (NLAER).

⁵⁹ See <https://www.gov.uk/government/publications/electricity-market-reform-contracts-for-difference>

⁶⁰ See <https://www.gov.uk/government/policies/maintaining-uk-energy-security--2/supporting-pages/electricity-market-reform>

⁶¹ See <https://www.gov.uk/government/publications/electricity-market-reform-delivery-plan>

⁶² See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/348142/Generic_CfD_TCs__29_August_2014_.pdf

⁶³ See http://www.legislation.gov.uk/ukdsi/2014/9780111116791/pdfs/ukdsi_9780111116791_en.pdf

⁶⁴ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/340046/capacity_market_rules.pdf

⁶⁵ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/371384/Annual_Update_Print.pdf

⁶⁶ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/349370/Final_Allocation_Framework.pdf

⁶⁷ 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

⁶⁸ See <https://www.gov.uk/government/statistics/contracts-for-difference-cfd-allocation-round-one-outcome>

⁶⁹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/268221/181213_2013_EMR_Delivery_Plan_FINAL.pdf

⁷⁰ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/268221/181213_2013_EMR_Delivery_Plan_FINAL.pdf

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 Framework⁷¹, 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 2020/21.⁷² The intention is that the new regime will save consumers around £5 billion by 2030.⁷³

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.⁷⁴ 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.⁷⁵

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.⁷⁶ The government took powers in the Energy Act 2013 to establish an Offtaker of Last Resort (OLR) mechanism to further support

⁷¹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209361/Levy_Control_Framework_and_Draft_CfD_Strike_Prices.pdf

⁷² 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_UPDATE_D_6_DEC.pdf

⁷³ 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

⁷⁴ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/267649/Generic_CfD_-_Terms_and_Conditions_518596495_171_.pdf

⁷⁵ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263169/FID_Update_3_Contract_Award_Process.pdf

⁷⁶ See <http://uk.practicallaw.com/5-557-406?q=offtaker+of+last+resort>

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 2014⁷⁷, and the government's response was published in September 2014⁷⁸, which confirmed the government's intention to implement the OLR policy and clarified its high-level design.

The intention of the government is 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 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 opened to eligible generators (being generators with a CfD or Investment Contract) on 1 October 2015⁷⁹.

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 Britain⁸⁰.

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").⁸¹

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

⁷⁷ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/278893/OLR_Consultation_11_Feb.pdf

⁷⁸ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/324261/OLR_Government_Response.pdf

⁷⁹ See <https://www.ofgem.gov.uk/publications-and-updates/introduction-offtaker-last-resort>

⁸⁰ Section 82(7), Energy Act 2004 Part 2, Ch. 1.

⁸¹ Utilities Act 2000, Ch. 27, Part V (amending the Electricity Act 1989).

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 priority objectives set out in its single departmental plan (2015-2020) are:

1. to ensure the UK has a secure and resilient energy system;
2. to keep energy bills as low as possible for households and businesses;
3. to secure ambitious international action on climate change and reduce carbon emissions cost-effectively at home; and
4. to manage the UK's energy legacy safely and responsibly⁸²

The principle UK laws and regulations relevant to the renewable energy sector are:

- the Climate Change Act 2008⁸³, 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 power⁸⁴;

- the Energy Act 2011⁸⁵ 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 targets⁸⁶ 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

⁸² See <https://www.gov.uk/government/publications/decc-single-departmental-plan-2015-to-2020/single-departmental-plan-2015-to-2020>

⁸³ Brought into force by the Climate Change Act 2008 (2020 Target, Credit Limit and Definitions) Order 2009 No. 1258.

⁸⁴ 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).

⁸⁵ Brought into force by the Energy Act 2011 (Commencement No. 2 and Saving) Order 2013.

⁸⁶ Section 1(1) Energy Act 2013

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 2008³, which makes provisions for infrastructure in Renewable Energy Zones (being areas outside the UK's territorial sea to be exploited for energy production)⁴;
- the Planning and Energy Act 2008⁵, 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 2000⁶, 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 sources⁷; 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 2050.⁸ 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 fourth⁹.

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

The principal regulatory body in respect of renewable power is Ofgem, an independent body which regulates the pricing, transmission and production of energy in the UK. Ofgem administers the Renewables Obligation and its role includes¹⁰:

- 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.

³ Brought into force by the Planning Act 2008 (Commencement No. 1) (England) Order 2009 No. 1303 (C. 70).

⁴ As defined in section 84(4), Energy Act 2004, Part 2, Ch. 2.

⁵ See www.opsi.gov.uk.

⁶ Brought into force by the Utilities Act 2000 (Commencement No. 1 and Saving) Order 2000 No. 2412 (C. 67).

⁷ Related legislation includes the Electricity and Gas (Carbon Emissions Reduction) (Amendment) Order 2010 (SI 2010/1958).

⁸ See <https://www.gov.uk/government/publications/2010-to-2015-government-policy-greenhouse-gas-emissions/2010-to-2015-government-policy-greenhouse-gas-emissions>

⁹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47617/3749-carbon-plan-annex-b-dec-2011.pdf

¹⁰ Ofgem also administers the NIRO.

In 2009, Ofgem established a new business unit, Ofgem E-Serve, which runs government schemes such as:

- the Renewables Obligation Smart Meters¹¹;
- Offshore Electricity Transmission for renewable and non-renewable sources¹²;
- the administration of government environmental programs (e.g., the Renewables Obligation, Climate Change Levy exemptions and the Carbon Emission Reduction Target¹³, which obliges energy suppliers to provide grants and offers to enable individuals to pay for energy efficiency measures and renewable energy technologies in their homes); and the Renewable Heat Incentive (RHI)¹⁴.

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. It was further restructured in January 2016 to enable it to best meet the future challenges of energy regulation⁹⁹. Since 2009, Ofgem E-Serve has administered schemes worth more than £6 billion a year for less than 0.5 per cent of their total value¹⁰⁰. A number of regulatory amendments to the RHI scheme came into effect on 12 February 2015¹⁰¹, including

updating the Ofgem Heat Loss Assessment tool and the introduction of a new tiered tariff applicable to producers of biomethane¹⁰². Ofgem has provided detailed guidance on the changes¹⁰³.

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.¹⁰⁴ 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.¹⁰⁵

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 is responsible for taking forward the

¹¹ See <https://www.ofgem.gov.uk/about-us/who-we-are/our-structure/ofgem-e-serve>

¹² See <https://www.ofgem.gov.uk/network-regulation-riio-model>

¹³ See <https://www.ofgem.gov.uk/about-us/how-we-work/promoting-sustainability/sustainability-reporting>

¹⁴ See www.ofgem.gov.uk.

⁹⁹ See <https://www.ofgem.gov.uk/publications-and-updates/new-ofgem-organisational-structure>

¹⁰⁰ See <https://www.ofgem.gov.uk/environmental-programmes/e-serve/about-e-serve>

¹⁰¹ See http://www.legislation.gov.uk/ukdsi/2015/9780111124970/pdfs/ukdsi_9780111124970_en.pdf

¹⁰² See <https://www.ofgem.gov.uk/publications-and-updates/changes-non-domestic-rhi-regulations-february-2015>

¹⁰³ See <https://www.ofgem.gov.uk/publications-and-updates/guidance-volume-one-two-and-fuel-measurement-and-sampling-guidance>

¹⁰⁴ See <https://www.ofgem.gov.uk/information-consumers/domestic-consumers/understanding-energy-bills>

¹⁰⁵ See for example: <http://www.businessgreen.com/bg/analysis/2320773/good-energy-warns-over-ofgem-restrictions-to-smarter-tariffs>

commitments in the UK Renewable Energy Strategy including:

- 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.¹⁵

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.¹⁶

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.¹⁷ 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 2009 on behalf of the Secretary of State. A licence under the Food and Environmental Protection Act (Part II)

¹⁵ See http://tools.decc.gov.uk/en/content/cms/meeting_energy/renewable_ener/ored/ored.aspx

¹⁶ 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>

¹⁷ See <https://www.gov.uk/guidance/consents-and-planning-applications-for-national-energy-infrastructure-projects>

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.¹⁰⁹ 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.¹¹⁰ The MMO licenses approximately 300 projects a year which allows industries using marine resources to bring significant and sustainable social and economic benefit to the UK¹¹¹.

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.¹⁸

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

¹⁰⁹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/43573/Section_36_guidance.pdf

¹¹⁰ See <https://www.gov.uk/marine-licensing-impact-assessments> See also Part 4 of the Marine and Coastal Access Act 2009

¹¹¹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/430632/corporate-plan14-17_-_new.pdf

¹⁸ Application fees for these consents are set out in the Electricity (Offshore Generating stations) (Applications for Consent) Regulations 2006

individual cases or a class of activity and may be unconditional or subject to certain conditions including length of time.¹¹³ 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 2013¹¹⁴¹¹⁵. More recently, an exemption Order was also granted to Carbon Free Moy Limited in respect of the 60MW Moy onshore wind farm in January 2015.¹¹⁶

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.¹⁹ Electricity that is generated from renewable sources is

¹¹³ See <https://www.ofgem.gov.uk/licences-codes-and-standards/licences/licence-exemptions-and-exceptions>

¹¹⁴ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/137875/markinch_baillie_license_exemptions.pdf

¹¹⁵ See http://www.legislation.gov.uk/uksi/2013/1011/pdfs/ukxi_20131011_en.pdf

¹¹⁶ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/397129/Moy.pdf

¹⁹ 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.

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).²⁰ 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.²¹ 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.²²

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,²³ through changes that came into force on 1 December 2012.²⁴

On 27 August 2015, the UK government launched a consultation on the future of the FITs scheme which, inter alia, proposed a number of measures aimed at controlling the cost of the FITs scheme to limit the impact

²⁰ Part V, Sections 48 and 49 of the CCL.

²¹ 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).

²² See <https://www.gov.uk/government/news/hubnetakes-action-on-solar-farm-threat>

²³ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42917/5905-government-response-to-consultation-on-comprehensi.pdf

²⁴ See <https://www.gov.uk/combined-heat-and-power-incentives>

on consumer bills. Subsequently in December 2015, the UK government announced revised tariffs, including a new tariff for domestic-scale solar of 4.39p/kwh²⁵. The new tariffs aim to provide a sustainable return for investors in small-scale renewable technology without imposing unnecessary burdens on the bill payers who subsidise the renewables industry. On FITs, the government also announced that:

- deployment caps will be set to limit new spending on the FITs scheme to £100 million up to the end of 2018/19;
- the reintroduction of pre-accreditation for solar PV and wind generators over 50kW and all hydro and anaerobic digestion generators; and
- measures to pause new applications to the FITs scheme from 15 January to 8 February 2016, to allow time for the implementation of cost control measures.²⁶

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.

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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

The UK signed the Paris Agreement on 22 April 2016 but as of May 2016 has not yet ratified the Paris Agreement²⁷.

The UK ratified the Kyoto Protocol on 31 May 2002 and entered into force on 16 February 2005. The Kyoto Protocol introduced the concept of carbon emissions trading and enabled the UK, an Annex 1 country under the protocol, to use carbon credits to meet its emission reduction commitments.

In an attempt to go beyond the reductions required under the Kyoto Protocol, the UK Government launched the UK Emissions Trading Scheme with an auction in March 2002²⁸. Companies and other organisations known as 'Direct Participants' bid emission reductions over the five year period between 2002-2006 in return for a share of £215 million incentive funding from Defra. The UK scheme did not involve allocation as usually defined since allowances were distributed to the winning bidders. From April 2002, the Direct Participants could trade their emission 'allowances' – the emissions allowed after the promised reductions. Direct Participants were issued with allowances equal to their target

²⁵ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/487300/FITs_Review_Govt_response_Final.pdf

²⁶ See <https://www.gov.uk/government/news/changes-to-renewables-subsidies>

²⁷ See https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtsg_no=XXVII-7-d&chapter=27&lang=en

²⁸ See <https://www.nao.org.uk/wp-content/uploads/2004/04/0304517.pdf>

emissions each year, and at the end of each year, must hold enough allowances to cover its actual emissions for that year. Over the 2002-2006 period, Direct Participants were required to deliver reductions from baseline levels totaling 11.88 million tonnes. The UK Emissions Trading Scheme was the first in the world to allow many companies (34 in total) to participate. The voluntary scheme ended in December 2006.

On 1 April 2010, the Carbon Reduction Commitment Energy (CRC) Efficiency Scheme, a mandatory UK energy saving and carbon emissions reduction scheme was launched.²⁹ The scheme applies to large energy-intensive businesses and public sector organisations in the UK and is designed to target emissions not already covered by the EU ETS or Climate Change Agreements. Organisations that meet the qualification criteria for the scheme are required to participate, and must buy allowances for every ton of carbon they emit. The scheme is currently in its Initial Phase (1 April 2014 – 31 March 2019). The scheme was projected to reduce non-traded carbon emissions by 16 million tonnes by 2027, supporting the UK's efforts to reduce its carbon emissions by 80% by 2050. However, the UK government confirmed in its 2016 budget that, following its review of energy efficiency taxes, it will abolish the CRC Energy Efficiency Scheme from the end of the 2018-2019 compliance year and businesses will be required to surrender allowances for the final time in October 2019. In doing so, the aim is for the business energy tax landscape to become more streamlined in the UK, as the CRC Energy Efficiency Scheme will be replaced with an increase in the CCL.

²⁹ See <https://www.gov.uk/government/publications/2010-to-2015-government-policy-energy-demand-reduction-in-industry-business-and-the-public-sector/2010-to-2015-government-policy-energy-demand-reduction-in-industry-business-and-the-public-sector#appendix-3-crc-energy-efficiency-scheme>

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',³⁰ a formative aspect of which is the Smart Metering Implementation Program,³¹ 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

³⁰ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/285417/Smart_Grid_Vision_and_RoutemapFINAL.pdf

³¹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/413712/Consultation_on_review_of_Data_Access_and_Privacy_framework_final.pdf

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.³²

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.³³

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.³⁴

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.³⁵

The 2016 UK budget did not include any additional incentives for domestic (local) manufacturing of equipment or materials used in the construction of renewable energy based power plants.³⁶

The government introduced the Enhanced Capital Allowances (ECA) scheme in 2001 to encourage businesses to invest in low carbon, energy-saving equipment³⁷. The scheme provides a tax incentive to businesses that invest in equipment that meets published energy-saving criteria. The

³² See <https://www.gov.uk/government/publications/2010-to-2015-government-policy-uk-energy-security/2010-to-2015-government-policy-uk-energy-security>

³³ www.hmtreasury.gov.uk

³⁴ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/293759/376_30_Budget_2014_Web_Accessible.pdf

³⁵ www.hmtreasury.gov.uk

³⁶ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/508193/HMT_Budget_2016_Web_Accessible.pdf

³⁷ See <https://www.gov.uk/government/publications/enhanced-capital-allowance-scheme-for-energy-saving-technologies>

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 scheme³⁸.

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.³⁹ 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.

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.⁴⁰ 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.⁴¹

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.⁴²

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

³⁸ <https://www.gov.uk/government/uploads>

³⁹ 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.

⁴⁰ 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.

⁴¹ 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".

⁴² See <https://www.gov.uk/government/publications/planning-our-electric-future-a-white-paper-for-secure-affordable-and-low-carbon-energy>

removed.⁴³

In December 2015, the government announced proposals for reduced support under the RO scheme for Solar PV generating stations of 5MW capacity and below⁴⁴. The rationale behind the changes is that government subsidies were only ever intended to be a temporary measure, and that as the cost of renewable technologies has reduced, the cost to generators is no longer as high.

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.⁴⁵

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.⁴⁶ 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 the scheme.⁴⁷ 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.⁴⁸ Further changes to the Domestic RHI scheme came into force on 24 March 2016, inter alia, removing the need for applications to have a Green Deal Assessment, which was perceived as an unnecessary burden and indexing tariffs for applications accredited on or after 1 April to the UK Consumer Price Index, as the Retail Price Index previously used is no longer classified as a National Statistic⁴⁹.

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 2015 was a record 24.7%, an increase of

⁴³ See <https://www.ofgem.gov.uk/ofgem-publications/58129/ro-supplier-guidance.pdf>

⁴⁴ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/486091/20151216_Small_scale_solar_PV_government_response_FINAL.pdf

⁴⁵ 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.

⁴⁶ 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 Trust⁴⁶, 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.

⁴⁷ See <https://www.gov.uk/renewableheatincentive>

⁴⁸ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/403636/2015_Dom-RHI_Regs_Changes_Info_Sheet_5_February_2015.pdf

⁴⁹ See <https://www.gov.uk/government/publications/renewable-heat-incentive-amendments-to-scheme-eligibility/renewable-heat-incentive-amendments-to-scheme-eligibility>

5.6% compared to 2014.⁵⁰ In the fourth quarter (“Q4”) of 2015, renewables’ share of electricity generation was a record 26.9%, up 5% on the share in Q4 2014. At the end of Q4 2015, the UK’s renewable electricity capacity totaled 30.0 GW, an increase of 22% on that installed at the end of Q4 2014. At the end of 2015, onshore wind and solar PV had the highest share of capacity (each at approximately 30%), followed by offshore wind and bioenergy (both at approximately 17%), and hydro (5.8%).⁵¹

Total renewable electricity generation in 2015 was 54.1 TWh, a 34% (13.7TWh) increase on 2014.

The main contributors to this substantial increase were wind and bioenergy (principally due to the conversion of a third unit at Drax from coal to biomass).

Bioenergy represented 35% of total renewable generation in 2015; onshore wind had a 28% share, offshore wind a 21% share, with 9.1% from solar photovoltaics and 7.6% of renewable generation from hydro.⁵²

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⁵⁰ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415998/renewables.pdf

⁵¹ See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415998/renewables.pdf

⁵² See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415998/renewables.pdf

UNITED STATES OF AMERICA



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GENERAL

1. What are 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 2015, approximately 14% 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. The information below is current as of May 2016.

2. What are 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, 37 states and the District of Columbia have implemented some type of RES or renewable portfolio standard (“RPS”), also 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”).¹¹ These QFs are entitled (but not obligated) to sell their power to the utility to which they interconnect at an “avoided cost” rate – that is, a rate that reflects the cost the utility avoids by taking the power from the QF rather than an alternative source. Avoided cost rates are set by the state, and utilities often offer the avoided cost rate for small QFs by tariff. While in some cases the rates a QF can negotiate for a bilateral market-based sale may be better than the avoided cost rate available under PURPA, the program remains popular because QFs, whether or not they sell power at the avoided cost rate, also benefit from certain other regulatory exemptions by maintaining QF status.

PURPA applies in all fifty states, the District of Columbia and Puerto Rico. To be eligible for this program, (1) at least 75% of energy input for the QF must come from renewable resources, geothermal resources, biomass (any organic material not derived from fossil fuels), waste (which is broadly defined as an input having little or no commercial value and which may include, among other things, used rubber tires, refinery off-gas, synthetic gas from coal, and various types of low-BTU coal waste as set forth in the regulations), or

¹¹ 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.

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).

The State of California has one of the more stringent requirements, compelling retail sellers and publicly owned utilities to acquire 50% of their electric power from renewables by 2030. 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 of electricity is generally a matter of state or local law. The construction of generation or transmission facilities located more than 5.6 km from the ocean coast (or more than 16.2 km of the coast of the State of Texas or the western coast of the State of Florida) requires federal approval. 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

² The following is a general description of the tax provisions applicable to renewable power. It is

eligible to receive either a production tax credit (“PTC”) or an investment tax credit (“ITC”). The specific eligible projects are defined by statute.

The PTC is generally available to the owner of a qualified facility that sells electricity produced in the US to an unrelated person. Wind, geothermal facilities and biomass projects are among the types of projects that may qualify for the PTC. As the name suggests, the tax credit taken for any particular year is based on that year's production. The amount of the credit is 1.5 cents per kilowatt hour of electricity, adjusted for inflation, for certain technologies, such as wind, geothermal and closed-loop biomass. With the inflation adjustment, the rate for these facilities was 2.3 cents per kilowatt hour for 2015. For certain other technologies, including open-loop biomass and landfill gas, the credit is reduced by half, and thus the 2015 rate for these types of facilities was 1.2 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 2017. In December 2015, the relevant ITC and PTC laws were amended to further extend the PTC for wind facilities to include those for which construction begins before 1 January 2020, but this extension was accompanied by a phase-out of the PTC for wind facilities over a four year period. Where construction of a wind facility begins prior to 1 January 2017, the full PTC is available. For wind facilities

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where construction is commenced after 2016 and before 2020, the PTC available is reduced by 20%; for facilities with construction beginning in 2017, by 40%; where construction is commenced in 2018; and by 60% for facilities begun in 2019. 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 2017. This guidance was clarified in September 2013 and again clarified and modified in May 2014 and May 2015. 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. This continuous efforts test will be deemed met if the facility is placed in service during a calendar year that is no more than four years after the calendar year in which construction of the facility commenced. 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. In addition, the PTC is now available for certain facilities that are comprised in part of used property, provided that the fair market value of such used property does not exceed 20% of a facility's total fair market value.

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 qualified fuel cell property, and qualified small

wind energy property placed in service before 1 January 2017 and for solar energy property placed in service before 1 January 2022 (but with the solar credit phasing out, with the credit at 26% for 2020 and 22% for 2021. A solar facility for which construction commences before 1 January 2022 but which is not placed in service prior to 1 January 2024 is eligible only for a 10% ITC. A 10% ITC is available for solar energy property placed in service after 31 December 2021 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 2017 with the deadline for the commencement of construction extended to 1 January 2020 in the case of wind facilities, but the wind credit is reduced by 20% in 2017, 40% in 2018 and 60% in 2019.

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 geothermal facilities, the construction of which commences before 1 January 2017, are eligible for the 30% ITC even if such facilities are not placed in service within four

calendar years of the commencement of construction.

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 generators using certain renewable energy sources, including photovoltaic and on-shore wind (pricing varies by technology type and size of the project).

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 Paris Agreement under the United Nations Framework Convention on Climate Change been ratified? Is there a carbon market or carbon credits mechanism in your jurisdiction?

On 22 April 2016, US Secretary of State John Kerry signed the Paris Agreement, which aims to reduce carbon output and to keep the global temperature rise to “well below” 2° Celsius. As part of the agreement, the administration pledged to reduce United States greenhouse gas emissions in 2025 by 26-28% (from 2005 levels). The agreement remains legally and politically controversial in the United States. Some have argued the agreement is unlawful or that the next president could withdraw from or ignore the agreement. Others argue that the agreement is binding under the United Nations Framework Convention on Climate Change, which was ratified by the US Senate in 1992.

The development of national carbon emission limitations is among the priorities of the current executive administration. The EPA has mandated carbon emissions standards for new power plants constructed after 23 October 2015. These standards vary by fuel source and technology employed. In addition, in October 2015, the EPA issued the Clean Power Plan, rules targeting carbon emissions from existing power plants. The Plan sets carbon emissions targets by state; individual states then determine how to meet those targets. The Plan aims to cut carbon pollution from the power sector by 30 percent from 2005 levels, by 2030. In February 2016, the US Supreme Court issued a stay preventing the Clean Power Plan from going into effect.

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 Title XVII of the Energy Policy Act of 2005 for innovative technologies. It periodically opens solicitations for new applications.

Title XVII 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. The maximum term of the underlying loan is the lesser of 30 years or 90 percent of the projected useful life of the facility.

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 2015, approximately 14% of the electric generation in the US came from renewable resources, including hydroelectric (compared to 33% for coal, 33% for natural gas, 19% for nuclear, and 1% for petroleum and other resources). Of the 14% generated by renewable resources, approximately 44% was generated using hydropower and 34% using wind. Other renewable resources include biomass, 11%; solar, 7%; and geothermal, 3%.

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