**RENEWABLE ENERGY MARKET IN UKRAINE**

**General overview**

Ukrainian alternative energy sector is considered by the largest international players as one of the most fast-growing and attractive European market among the developing economies. This is explained, to a large extent, by the advantageous geographical conditions in Ukraine as well as increase in the prices of communal services, such as electricity and heating in the last two years and favorable legal framework.

In its 2014 national action plan (Figure 1), Ukraine set the target of producing 11% of its energy from renewable sources by 2020. However, barring a massive influx of investment, it is likely to miss this goal. Renewables have attracted significant interest, but accounted for just 1.3% of Ukraine’s energy production in 2016, with another 6.1% from large-scale hydroelectric plants. One issue is that the 11% target does not factor in the Russian occupation of Crimea since 2014 and parts of the eastern Donbas, a major setback.

*Source: Institute for Social and Economic Research, Kyiv Post*

In September 2017 the Energy Strategy of Ukraine until 2035 was presented by the Ministry of energy and Coal Industry of Ukraine. According to this document, the renewable energy industry should pay a significant role in the development of the energy sector.

Following a couple of years of relative silence on the alternative energy market in Ukraine, a substantial increase in the number of commissioned renewable energy projects was observed in 2016 and the in the beginning of 2017. Thus, a couple of dozen projects, mainly in relation to wind, solar and biomass energy, was completed in 2016 or are at their ﬁnal stages of completion. Many of these projects are carried out by foreign investors, who turned to the Ukrainian market following introduction of legal reforms in relation to feed-in tariff regulation in mid-2015. The plans to construct high capacity solar power stations in the Chernobyl exclusion zone were announced by the Government of Ukraine.

1 775 million kWh of electricity was generated from renewable sources in Ukraine in 2016 which is 183.9 million kWh more than in previous year. Renewable electricity saved about 1 million 315 thousand tons of CO2 emission. The RES share in total electricity generation in Ukraine reached 1% in 2016.

*Source: Ukrainian Wind Energy Association*

As a result of first 6 months of 2017, 79 new renewable energy facilities with a total capacity of 182.7 MW were built in Ukraine. Total investments in these projects exceeded EUR 210 million. The total capacity of renewable energy facilities in Ukraine exceeded 1.64GW. It is estimated that by the end of the year, this figure may exceed 1.52 GW.

As of June 1, 2017, the total power of renewable energy sources in Ukraine, including solar and wind energy, small hydropower and biomass power plants (biogas), amounted to 1461.7 MW. During the first half of 2017, the total power of solar power stations increased by 132 MW (an augmentation of 23% compared to January 1, 2017) to 705 MW in Ukraine. During this period, 67 new solar power stations were constructed.

The capacity of the wind farms has increased during the reporting period by 20.7 MW (+ 4.7% from the beginning of the year) to 458.7 MW (data of the Ukrainian Wind Energy Association, UWEA). The capacities of small hydroelectric power stations make up 120 MW as of June 1, 2017 (+2 MW in the first half of the year). The growth of power facilities of biomass generation electricity was also almost 2 MW - up to 33 MW.

In accordance with the forecasts, in 2017 the Ukrainian market of equipment and services for renewable energy will exceed EUR 400 million. More than 60% of the Ukrainian renewable energy market will occupy the solar energy segment, about 30% - wind power, 10% will be the projects in the field of small hydropower and biomass energy.

According to the experts from IB Centre expert group, by the end of 2017, the Ukrainian and foreign developers are implementing in Ukraine more than 70 new investment projects in the field of renewable energy with a total installed capacity of more than 430 MW. In particular, in the second half of this year, 57 new large and medium-sized *PV plants,* as well as several hundred small roof solar power stations with a total capacity of around 360 MW will be built in Ukraine.

In the segment of *wind energy* in the second half of 2017, the growth is expected at a level exceeding 50 MW - up to 510 MW. In the segment of *small hydropower*, a slight increase of 0.8 MW is expected. In the *biomass segment*, the forecast of capacity growth is 4 MW to 37 MW for the electricity generation and more than 26 MW to 306 MW for the heat generation from biomass. Thus, according to the results of 2017, the total capacity of renewable energy facilities in Ukraine can reach 1.9 GW, which is more than 4.3% in the overall energy balance.

In December 2017 Ukrainian President Petro Poroshenko signed the law on Ukraine's accession to the statute of the International Renewable Energy Agency (IRENA). After joining IRENA, Ukraine will be able to increase green investments, get cheap loans for "green" projects, and develop joint mechanisms for financing the preparation and implementation of quality projects.

**Feed-in Tariff**

For many years, Ukraine has been making efforts to stimulate ﬁnancially the generation of electricity from alternative sources of energy. Such stimulation results in legislative provision for feed-in tariff, i.e., the guaranteed obligation of the state to purchase generated “green” energy from producers of alternative energy.

The feed-in tariff is ﬁxed in euro until 2030 and is paid in the national currency. All generated electricity, except for volumes for personal needs, shall be paid under the feed-in tariff (except for blast furnace and coke gas, and for hydro plants with capacity of up to 10 MW).

It is the obligation of the wholesale electricity market of Ukraine to purchase “green” energy produced under the feed-in tariff and make full payment for the cost of electricity, regardless of the installed capacity or volume of supply.

The amount of the feed-in tariff depends on the commission date of the object of electricity generation, including construction phase of the electricity station, which produces electricity from alternative energy sources.

The feed-in tariff for different types of renewable sources of energy is shown in the table below (in EUR).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Type** | **Capacity (kW)** | **Commission date** | | | | | |
| **01.07.-31.12.2015** | **2016** | **2017 - 2019** | **2020 - 2024** | | **2025 - 2029** |
| **Ground-mounted solar power plant** |  | 0.1696 | 0.1599 | 0.1502 | 0.1352 | | 0.1201 |
| **Rooftop power plant** |  | 0.1804 | 0.1723 | 0.1637 | 0.1475 | | 0.1309 |
| **Wind turbine** | <600 | 0.0582 | | | | 0.0517 | 0.0452 |
| 600-2000 | 0.0679 | | | | 0.0603 | 0.0528 |
| >2000 | 0.1018 | | | | 0.0905 | 0.0792 |
| **Biomass** |  | 0.1239 | | | | 0.1115 | 0.0991 |
| **Biogas** |  | 0.1239 | | | | 0.1115 | 0.0991 |
| **Hydro plant** | <200 | 0.1745 | | | | 0.1572 | 0.1395 |
| 2000-1000 | 0.1395 | | | | 0.1255 | 0.1115 |
| 1000-10000 | 0.1045 | | | | 0.0942 | 0.0835 |
| **Geothermal energy** |  | 0.1502 | | | | 0.1352 | 0.1201 |
| **Solar power for private household** | <30 | 0.2003 | 0.1901 | 0.1809 | 0.1626 | | 0.1449 |
| **Wind turbine for private household** | <30 | 0.1163 | | | | 0.1045 | 0.0932 |

*Source: DLF attorneys-at-law, International Energy Agency, Energy and Utilities the National Commission of Ukraine*

The use of equipment of Ukrainian origin by investors is stimulated by the relevant *premium to the feed-in tariff* (throughout all term of its validity), if the electricity objects are commissioned by 31 December 2024.

Therefore, if equipment of Ukrainian origin is used at least at the level of 30%, the premium to the feed-in tariff shall be 5%. If equipment of Ukrainian origin is used at least to the level of 50%, the premium to the feed-in tariff shall be 10%.

The level of use of equipment of Ukrainian origin at power plants that generate electricity from alternative energy sources is deﬁned as the sum of respective percentages of speciﬁc items of equipment. The Law of Ukraine On Electricity provides an exhaustive list of equipment for each type of alternative energy source that qualiﬁes for the feed-in tariff premium.

However, it is worth noting that such premium to the feed-in tariff is not applicable to the electricity objects of private households.

*Solar panels and private households*

According to the State Agency for Energy Efﬁciency and Energy Saving of Ukraine, the rise in the number of solar panels installed by households is *latest trend* in the alternative energy sector of Ukraine. This is attributed to the positive legislative changes made in 2015, which allowed private households to not only sustain their electricity needs by means of using renewable energy sources, but to also sell any such excessive energy generated under the feed-in tariff. The trend has been growing continuously for the last two years.

Thus, pursuant to the Law of Ukraine On Electricity, private households are entitled to set up electricity generating facilities with a capacity of up to 30 kW and sell electricity produced from solar or wind energy under the feed-in tariff to the electricity distribution company in the amount that exceeds monthly consumption of electricity by such private households.

**Tax benefits**

For a number of years, the producers of “green” energy in Ukraine have enjoyed quite substantial tax beneﬁts. However, amendments made to the Tax Code of Ukraine in late 2014 cancelled many tax privileges for producers of electricity from alternative energy sources, speciﬁcally in relation to income and land taxation. Currently only those entrepreneurs constructing renewable energy objects in the Chernobyl exclusion zone enjoy tax privileges; the rent for land use in the exclusion zone is paid at 15% (i.e., with an 85% discount).

Nevertheless, some tax beneﬁts are still available for renewable energy producers. Thus, pursuant to the Tax Code of Ukraine, no VAT is applicable to transactions on import to the territory of Ukraine of:

* equipment which is functioning on the basis of alternative energy sources, energy saving equipment and materials, means of measuring, control and management of energy resources, equipment and materials for production of alternative types of fuels or electricity from renewable energy sources;
* materials, equipment, components for manufacturing equipment, which is functioning on the basis of renewable energy sources; raw materials, equipment and components for production of alternative types of fuels or electricity from renewable energy sources; energy saving equipment and materials, products whose operation provides saving and rational use of energy resources; means of measuring, controlling and managing energy resources.

In addition, pursuant to the Customs Code of Ukraine, the abovementioned goods are exempt from import and export duties, provided that the taxpayer uses them for its own production and that no identical goods with the same qualities are produced in Ukraine. Nevertheless, this tax benefit, while being settled on paper, cannot be actually implemented in practice due to the failure of the Cabinet of Ministers of Ukraine to approve the list of such goods with specification of codes under the Ukrainian Classification of Foreign Economic Activity Products.

Furthermore, the Tax Code of Ukraine provides that any transactions regarding sale of electricity generated by qualiﬁed cogeneration units and/or from renewable energy sources are not subject to excise tax.

Data sources:

* Ministry of energy and Coal Industry of Ukraine
* State Agency on Energy Efficiency and Energy Saving of Ukraine
* International Energy Agency
* Ukrainian Association of Renewable Energy
* Ukrainian Wind Energy Association
* DLF attorneys-at-law
* Baker&McKinsey
* Kyiv Post
* IB Centre
* Interfax Ukraine

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