

WIND POWER SECTOR OF UKRAINE 2019



1.12. FUTURE WIND POWER DEVELOPMENT FORECAST



To implement the Decision of the Energy Community Ministerial Council “On the implementation of Directive 2009/28/EU and amending Article 20 of the Treaty establishing the Energy Community”, according to which mandatory national goals in the field of renewable energy are set, Ukraine has committed to reach 11% RES share in total energy supply by 2020.

The Cabinet of Ministers of Ukraine therefore approved the National Renewable Energy Action Plan for the Period up to 2020. This plan envisaged an

increase in the installed renewable electricity capacities to 10,900 MW (*including large hydro*) and 26 billion kWh of “green” electricity generation in 2020.

In 2017, the Energy Strategy of Ukraine till 2035 “Security, Energy Efficiency, Competitiveness” was adopted, which identified priority areas for the Ukraine’s fuel and energy complex development in the period till 2035. This Energy Strategy predicts the increase of renewable energy share in the total primary energy supply to 12% by 2025 and to 25% by 2035.

Figure 1.12.1. RES development until 2035: status and prospects

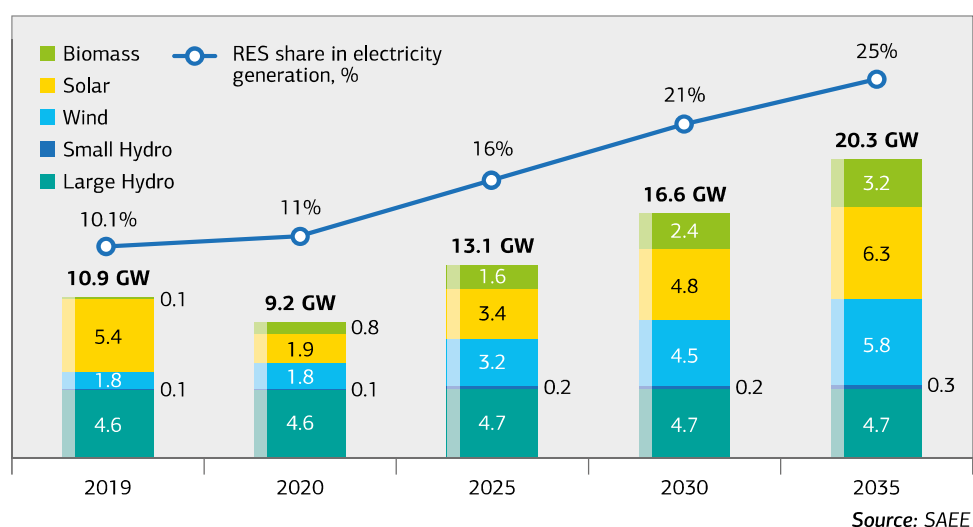
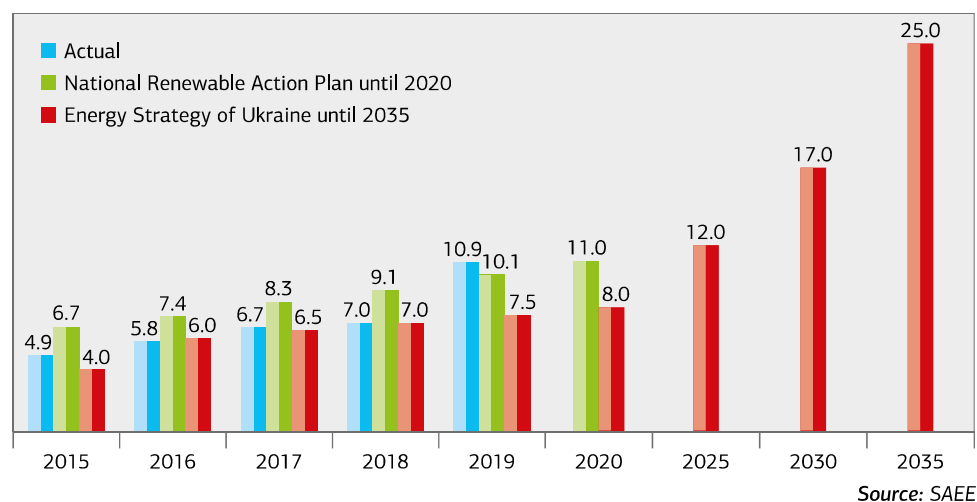


Figure 1.12.2. RES share in energy balance of Ukraine by 2035, %



The state support for renewable energy in Ukraine promotes the rapid development of renewable energy sources. However, it should be noted that high credit rates, due to the country's high political and economic risks, significantly offset the rather high rates of the "green" tariffs in Ukraine in comparison with other European countries. In addition, despite official statements on support for renewable energy, the government's policy indicates that other types of generation, in particular nuclear, are more important for Ukrainian officials.

An unsettled issue of the SE Guaranteed Buyer's budget deficit and possible restructuring of the PPAs negatively affects the future growth rate of industry. According to the UWEA's survey of companies operating in the renewable energy market of Ukraine, the

growth rate of wind power capacity is expected to decrease during 2020 with the commissioning of only about 450 MW of new capacity (after a record 637 MW in 2019).

According to the UWEA forecast, the total installed capacity of wind power plants located in mainland regions of Ukraine may reach **1,600 MW** by the end of 2020.

In early September 2018, the Norwegian wind developer NBT signed the EPC-agreement for the implementation of the Syvash wind power plant along the northern shore of Lake Syvash, Kherson region. The **250 MW Syvash Wind Power Plant** will comprise of 63 wind turbines and is expected to be fully commissioned during second half 2020.



The total CAPEX of the wind energy project amounts to EUR 380 mln and is being implemented by Powerchina Fujian Electric Power Engineering. A financing agreement between NBT, Total Eren and the European Bank for Reconstruction and Development (EBRD) was signed at the prestigious Davos World Economic Forum in January 2019.

When completed, the Syvash WPP will be one of the largest in Ukraine and will send 850 GWh of clean electricity a year into the grid and can supply the electricity needs of approximately 100,000 households.

Implementation of **500 MW Zaporizhzhia wind power plant** started in Pryazovsk and Melitopol districts of Zaporizhzhia region in 2008. When completed the Zaporizhzhia WPP will comprise up to 167 Wind Turbine Generators. Its first phase totaling 98 MW implemented by EuroCape Ukraine 1 LLC is under construction (*at the time of writing this report*). The first phase includes installation of 27 wind turbines (*the first sets of which have already been delivered to Ukraine*), construction of its own transformer substation and 330 kV overhead transmission lines. Financing for the first phase of the project is provided by the Overseas Private Investment Corporation ("OPIC"). Inauguration of the first 98 MW of the Zaporizhzhia wind power plant is expected in 2020.

MC Wind parks of Ukraine expands generating capacity of their wind power plants in Mykolaiv region. In 2020, for example, the company plans to install up to 30-40 MW of the Ukrainian-made wind turbines with a capacity of 4.8 MW at their **Olviya Wind Power Plant**. The wind turbines of the same model totaling 25 MW will also be erected at the **Kramatorsk wind power plant** in Donetsk region.

In 2020, VR Capital and Ukraine Power Resources are expected to put into operation the first stage of the **Dnistrovska wind power plant** with a total installed capacity of 40 MW in the Bilhorod-Dnistrovskyi district of Odesa region. For the first phase of

the project it is planned to install 10 GE wind turbines with a capacity of 4.0 MW each, and additional 60 MW are planned for 2021.

Limited Liability Company Yuzhne Energy has intention to construct the **initial phase of wind power plant with total capacity of 76.5 MW at Lymanskyi District, Odesa region**. The Initial Phase of WPP with capacity of 27 MW will compose 6 turbines, infrastructure objects and electric transmission line, which will be installed at the territory of Sychavska, Lyubopil and Vyzyrska Village Councils outside the settlements.

The project's owner is Chinese company China Longyuan Power Group Corporation Ltd., which is the biggest operator of windfarms in China with installed capacity of 19 GW as of the first half 2019, which is 9.9% from the nationwide wind power capacity in China.

The project is at an early stage of construction, which involves the installation of 17 modern wind turbines with a capacity of 4.5 MW each, the construction of own substation and the installation of 110 kV high-voltage power lines. The wind power plant is expected to be commissioned in 2021.

Special attention should be paid to the project of the **800 MW wind park in the Nikolske and Mangush districts of Donetsk region** developed by WIND FARM LLC, which differs from any other wind projects in Ukraine.

Firstly, the project involves the establishing manufacture of wind turbine components in Ukraine. Such supply chain will include the mining industry, metallurgy, machine building, transport and construction industries, as well as energy sector. At the same time, wind turbine production will not be limited to the need of WIND FARM LLC only but will be exported as well.

WIND FARM LLC has already secured the potential support of one of the world's leading wind manufacturers, which is considering the possibility of setting up a production facility in Donetsk region based on the one of the existing enterprises in the machine-building industry. Currently, significant amounts of wind power equipment installed in the West European countries are manufactured in China. From this perspective, Ukraine occupies a favorable geographical position located between China and the Western Europe, so the equipment produced in Ukraine will have a competitive price for a lower transportation cost to ensure manufacturing capacity utilization.



Secondly, the company is planning to sale electricity generated from wind under the market price not applying for “green” tariff, thus contributing to liquidity of the electricity market and electricity price reduction.

To make the project more attractive for investors, the Company expects some surcharge to the market price for the equipment of Ukrainian origin, which should be introduced in Ukraine provided by the legislative provision. Considering the volume of additional revenues to the budget, the project has many advantages for Ukraine since its implementation increases local and national budget earnings through taxes paid and improves labor market situation.

The new approach of WIND FARM LLC demonstrates a new possibility for project financing through the creation of additional revenues to the state budget and gives hope for further development of the entire RE industry. After all, others will follow a way paved by the large-scale project.

In general, as of 31 December 2019, the SE Guaranteed Buyer has concluded pre-PPAs for 5.6 GW of wind capacity.

In the next two years, UWEA expects the growth of wind power capacity primarily in such regions of Ukraine as: Zaporizhzhia, Mykolaiv, Kherson, Odesa, Donetsk, Ivano-Frankivsk, Zhytomyr and Rivne.