



PERSPECTIVES OF WIND ENERGY DEVELOPMENTS IN RUSSIA

Wind energy is one of the most developed and investment-attractive types of renewable energy sources (RES) in the world. The economic potential of RES in Russia amounts to 2,225 thousand GWh annually, while the technical potential, which is a part of the total potential that can be efficiently utilized, is at 37,366 thousand GWh annually. The RES potential of the country is mainly met by the technical potential of wind and solar energies. The most developed type of RES (excluding large hydro power plants) is small hydro power plants, followed by biofuels, while wind and solar energies are the least developed types of RES in Russia. According to the Ministry of Economic Development of Russia, the country has the economic potential of wind energy of 250 thousand GWh annually, which amounts to 25% of total energy consumption of the country in a year. The share of RES in the total electricity generation of Russia, without taking into account large hydroelectric power plants (HPPs), is less than 1%, while the share of HPPs in the total electricity production of Russia is about 15%. So, despite the country's potential, currently, energy production using RES in Russia is relatively low. For instance, in 2014 total electricity generation using renewables in Russia was at 174 thousand GWh, while China, USA and Brazil produced 1,253 thousand GWh, 559 thousand GWh and 430 thousand GWh of green energy, respectively.

Taking into account the vast territory of the country, the development of RES is highly attractive in terms of providing electricity to remote and isolated areas of Russia that suffer from the lack of centralized power supply. Remote areas of the country use diesel power generators with a total capacity of 7 GW and the total annual output of 50 thousand GWh. However, electricity generation using RES in these areas is more attractive even taking into account the high technological costs. Therefore, Russia, which is mainly generating electricity using fossil fuels, is planning to develop renewable energy sources in remote and isolated areas of the country.

However, despite the aforementioned fact, the RES sector has not been properly developed due to the high cost difference between the energy generated using RES versus the low tariffs of traditional electricity generation. For example, most of the RES projects launched at the beginning of the 21st century in Russia were shut

down due to the lack of financial feasibility. Other than the cost of RES, the sector has other pitfalls. For the wind energy in Russia, the main challenges of the development of the sector are costly equipment, lack of qualified local manpower, difficulties of logistics and adapting western technologies due to the extreme cold weather conditions in the northern part of the country.

Even though climate in Russia is harsh, it is still favorable for wind farm constructions due to the existence of wind corridors with a wind speed above 6 meters per second (m/s), which is essential for the operation of wind turbines. In this light, the first wind atlas, showing potential windfarm locations, was published in 1930s, later the atlas was updated by the Russian-Danish Institute for Energy Efficiency and Riso National Laboratory in 2000. According to the atlas, there are several areas across the country with high wind energy potential. Murmansk and Kaliningrad regions in the North-West Federal District, Krasnodar and Volgograd regions in the South Federal District, Omsk and Novosibirsk regions in the Siberian Federal District and Khabarovsk region in the Far East Federal District have the highest wind energy potential in the country. The area along the coasts of the Barents and Kara seas, the Bering Sea and the Sea of Okhotsk have the highest mean wind speed average exceeding 6 m/s, while the coasts of the East-Siberian, Chukchi and Laptev seas to the north and the Japan Sea to the east have a wind speed of 5-6 m/s. The coasts of the Black, Azov and Caspian seas in the south and on the White Sea in the northwest have a mean wind speed of 3.5-5 m/s. Unfortunately, wind energy generation in Russia has an ephemeral character. For instance, the average annual wind speed variation across the country is 2-3 m/s, with high wind speed in winter months. Therefore, it needs to be paired with another energy type that can be produced according to a schedule.

Although wind energy potential across the country has been studied for a long time, first laws and regulations on the development of wind energy appeared only recently. According to the documents approved in 2009, such as the Guidelines of the State Policy in the Sphere of Enhancement of Energy Efficiency of the Electric Energy Industry on the Base of Renewable Energy Use for the Period up to 2020, it was planned to increase the share of energy generation via renewables except

HPPs from 0.5% to 4.5%. Meanwhile, by 2030, the Russian Ministry of Energy, RusHydro and the Russian Institute of Energy Strategy were planning to increase the total capacity of wind power plants up to 7 GW. However, due to the low pace of commissioning of RES facilities, the implementation plans were revised and a new legal framework regulating RES production, Decree #449 on the Mechanism for the Promotion of Renewable Energy on the Wholesale Electricity and Capacity Market was adopted by the Government of Russia on May 28, 2013. According to the Resolution No. 861-r of May 28, 2013, the annual wind power target of the country was planned to reach 100 MW and 250 MW of energy in 2014 and 2016, respectively. As for 2017, this number is supposed to be at 500 MW. Once again, the optimistic expectations were not met: the wind energy capacity was at 103 MW in 2015. Moreover, in 2016, the total amount of energy produced in Russia was at 1,048.3 thousand GWh, of which, 0.1 thousand GWh was produced using RES.

Despite the slow pace of the development of the wind energy projects in Russia, there are several projects that are operational or being implemented. For instance, the largest wind farms in Russia are the Ostaninskaya (26 MW), the Donuzlav (18.7 MW), the Tarkhankut (15.9 MW) and Zelenograd wind farms (5.1 MW). Also, a windfarm project in the Republic of Kalmykia (south of Russia) with a capacity of 51 MW is to be commissioned at the end of 2017 and the construction of a wind project in the Ulyanovsk region with a total capacity of 35 MW is planned to start in 2017. Moreover, after entering the wind energy market in 2015, the state corporation Rosatom via its subsidiary VetroOGK submitted an RES projects package with a total capacity of 610 MW.

To conclude, even though Russia has a huge economic and technical wind energy potential, the country is yet to generate sufficient amount of energy using this type of RES. Due to the difference between the tariffs for electricity produced using RES and traditional energy sources in the regions with centralized power supply, as well as technical difficulties caused by the harsh climate of the country the shift towards wind energy generation is still economically non-feasible. There are wind energy projects in line, however, currently, Russia is mostly presented on the RES market by hydro energy.

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Politics, Foreign Affairs and Security

- During his official visit to Astana, the President of Uzbekistan, Shavkat Mirziyoyev, and the President of Kazakhstan, Nursultan Nazarbayev, discussed possibilities to deepen the bilateral economic relations focusing on prospects to boost the Kazakh-Uzbek trade turnover. As a result of the visit, the parties signed a number of cooperation documents and protocols including the Joint Declaration on further enhancement of strategic partnership and strengthening good-neighborliness between Kazakhstan and Uzbekistan, Agreement on interregional cooperation, Strategy of economic cooperation for 2017-2019, Agreement on military cooperation, and Protocol on amendments and additions to the Agreement on international road transport.
- During his official visit to Dushanbe, the Federal Minister for Water and Power of Pakistan, Khawaja Asif, and the President of Tajikistan, Emomali Rahmon, discussed the issues of cooperation in the areas of mutual importance, including security and defense, energy, oil and gas, use of transport and transit opportunities. As a result of the meeting, the parties deemed it reasonable to revitalize the Joint Working Group on Energy and Infrastructure Issues and the effective work of its Joint Subgroup on Oil and Gas Cooperation in implementing CASA-1000 power project.
- The Ministry of Foreign Affairs of Uzbekistan reported that 10-day talks of the working groups of the governmental delegations of the Uzbekistan and Kyrgyzstan on delimitation and demarcation of the Uzbek-Kyrgyz state border concluded with the signing of respective protocol. Within the framework of the negotiations held in Osh, joint field surveys and geodetic measurements were carried out on the most difficult sections of the interstate borderline within the Andijan, Namangan and Ferghana regions of Uzbekistan along the Batken, Jalal-Abad and Osh regions of Kyrgyzstan.
- During the 13th round of the Consultations between Ministries of Foreign Affairs of Uzbekistan and India held in New Delhi, the Uzbek Deputy Minister of Foreign Affairs, Dilyor Khakimov, met the Minister of State for External Affairs of India, Mubashir Javed Akbar and the Indian Secretary of the Foreign Ministry, Preeti Saran. The parties discussed a wide range of issues including high-level political exchanges, defense cooperation, trade and commercial ties between the two countries.
- During the session of the Secretariat of the Collective Security Treaty Organization (CSTO) held in Moscow, the CSTO Analytical Association presented a public report on international terrorism and religious extremism threats to the CSTO member states in Central Asia and Afghanistan. The Acting

Secretary, General Valery Semerikov, highlighted that many provisions of the report were used for developing proposals for the heads of the CSTO member states to enhance the efficiency of the CSTO's fight against terrorism, extremism, illegal drug trade and other threats to security.

- The Ministry of Defense of Turkey reported that one Turkish soldier was killed and four were wounded in an armed attack in the southeastern province of Hakkari organized by the militants of the Kurdistan Workers Party, which targeted security forces since abandoning ceasefire in July 2015.
- On the sidelines of the Russian-Indian military and industrial conference, the President of Russia's United Aircraft-Building Corporation, Yuri Slyusar, and the Chairman of India's Hindustan Aeronautics Limited, Suvarna Raju, signed a deal to provide maintenance services for Russian-made Sukhoi Su-30MKI fighter jets operational in the Indian Air Force. The contract was inked for five years with a prolongation option.

Economy, Finance and Energy

- The Energy Minister of Russia, Alexander Novak, stated that the country reduced oil production by 160,000 barrels per day as of mid-March 2017. It was also noted that by the end of April 2017 Russia plans to cut oil production by 300,000 barrels per day and maintain this level until the end of the first half of the year.
- According to the Committee on Statistics of Kazakhstan, the country's oil production increased by 4.4% in January-February 2017 compared to the same period of 2016. During the reporting period, oil and gas condensate output hit 13.69 million tons (11.47 tons of oil and 2.23 tons of gas condensate). It was also noted that oil and gas condensate production in February 2017 hit 6.57 million tons, which is 7.7% less compared to January 2017. Kazakhstan's oil and condensate output totaled 78.04 million tons in 2016, which is 1.8 percent less compared to 2015.
- According to the state-owned company Passajirskiyi Pervzoki of Kazakhstan, a high-speed train "Tulpar-Talgo" on the route Almaty-Tashkent was launched in March 2017. It was noted that the journey would take about 16 hours and 30 minutes.
- According to the state-owned food company of Uzbekistan Uzbekoziqovqatholding, the country announced its plans to increase export of fruits and vegetables from 482,600 tons worth \$307 million in 2016 to 560,000 tons worth \$410 million in 2017. It was reported that in January-February 2017, the volume of shipped fresh and processed fruits and vegetables to Kazakhstan reached 22,070 tons for \$15.97 million.
- The Deputy Minister of National Economy of Kazakhstan, Timur Zhaksylykov, reported that within the framework of signed agreement the

country would allocate financial assistance to Kyrgyzstan in the amount of \$41 million in order to adapt sectors of the Kyrgyz economy to the standards of the Eurasian Economic Union in terms of sanitary, phytosanitary and veterinary control. It was also noted that the technical assistance would be provided to purchase equipment for establishment of a laboratory and certification base.

- The Ministry of Economy of Uzbekistan reported about the country's plans to decrease imports amounting to \$1.1 billion due to localization of production in 2017. It was stated that within the framework of the localization program for 2017-2019 adopted in December 2016 over 1,146 projects with total volume of production for \$3.4 billion of competitive import-replacing goods would be launched.
- The Finance Minister of Russia, Anton Siluanov, reported that the Ministry upgraded the country's GDP growth outlook for 2017 from 0.6% to 1.5-2%.
- The International Organization of Motor Vehicle Manufacturers (OICA) reported that Uzbekistan decreased production of automobiles by 52.5% year-on-year in 2016. According to the report, the production of automobiles in Uzbekistan fell from 185,400 cars in 2015 to 88,152 automobiles in 2016. It was also reported that Uzbekistan took the second place on the volume of car production among the CIS states after Russia (1.304 million cars in 2016).
- The Government of Turkmenistan announced that the country is developing a concept of creating free economic zones for the period until 2023. It was noted that the document is intended to promote the integrated and rational use of mineral resources, to increase of the export potential and to attract the foreign investments.

Society and Culture

- The Heads of Kazakhstan, Tajikistan, Turkey, Russia and other Eurasian states offered their condolences to the Prime Minister of the United Kingdom, Theresa May, in connection with the terrorist attack in London. As a result of the attack in front of the British Parliament, at least 5 people died and about 40 injured.
- The Defense Minister of Ukraine, Stepan Poltorak, reported that over 20,000 people are being evacuated after a series of explosions at a massive arms depot in Balakliya, near Kharkiv, in eastern Ukraine, which is used to store ammunition including missiles and artillery weapons. It was also noted that airspace was closed within a 50-km radius of Balakliya.
- According to the U.S. Embassy in Bishkek, the country is investing over \$12 million over five years in the healthcare system of Kyrgyzstan through the USAID Defeat Tuberculosis project. It was noted that since 2014, this project has trained nearly 3,200 doctors, nurses, and lab workers and supported more than 1,000 patients.