Energy storage for grid stability ukraine

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The optimal installed capacity of energy storage system of 240 MW will provide the amount of reserves (200 MW) needed to balance the growing share of renewable energy sources (RES) for the integrated power system (IPS) of Ukraine. It will also contribute to the successful operation of the IPS of Ukraine in an isolated mode, which is a key test for our power system before synchronization with the ENTSO-E Continental Europe power grid. This amount of energy storage will meet European requirements for the frequency containment reserve (FCR). This conclusion is the result of the study conducted by RTE international, which is a subsidiary of the French transmission system operator RTE.

The results of the study were presented today, December 17, during the stakeholder meeting chaired by Deputy Prime Minister for European and Euro-Atlantic Integration Olha Stefanyshyna and with the participation of representatives of the Ministry of Energy, Ministry of Finance, Ministry of Foreign Affairs, Ministry of Interior Affairs, Regional Head of ENTSO-E Continental Europe Laurent Rosseel, Chairman of the Management Board of NPC Ukrenergo Volodymyr Kudrytskyi, Executive Director of RTE international Nicolas Breham, representatives of international financial organizations, MPs, USAID, and experts.

Deputy Prime Minister Olha Stefanyshyna stressed that the synchronization of the IPS of Ukraine with the ENTSO-E power grid, scheduled for 2023, is an integral part of Ukraine"s European integration course and one of the Government"s important strategic objectives. "Integration into ENTSO-E will open the electricity market for European investors. This is a necessary step for the development of the national energy sector, which will ensure greater stability of power capacity in Ukraine", said Olha Stefanyshyna.

In the context of Ukraine"s involvement in the implementation of the European Green Course, Olha Stefanyshyna drew attention to the importance of developing technologies for electricity storage. "Ukraine must use all the opportunities offered by the industrial alliances launched by the European Commission to unite the efforts of state institutions, business and experts. We are already in dialogue with the European Commission on a partnership in the development of battery storage technologies, which are crucial for both energy storage and decarbonisation of the electricity market in general", said the Deputy Prime Minister.

"I am very grateful to Ukrenergo and its team for many years of fruitful work towards the future synchronization of the IPS of Ukraine with ENTSO-E. Since 2017, we have come a long way together with many challenges, but we still have several important tasks ahead of us. However, I am confident that we are moving in the right direction", said Laurent Rosseel, Coordinator of the ENTSO-E Continental Europe Regional Group".

The First Deputy Minister of Energy Olha Buslavets stressed that the construction of energy storage is critical

for the development of the Ukrainian power system, which is currently experiencing a shortage of highly maneuverable capacity with the growth of share of "green" generation. "The feasibility study prepared by RTE international demonstrates the possibilities of using this additional capacity in the Ukrainian power system. The conclusions presented today by our French partners are useful for the entire energy industry. After all, they provide an understanding of how to integrate energy storage system into the power system and how it will improve the flexibility and stability of Ukraine"s power system", said Olha Buslavets.

"Ukraine has several reasons to build energy storage, which will provide own reserves for the power system. They will be needed during the isolated operation of the power system, which shall be accomplished for integration into ENTSO-E. And also, which is very important, for the integration of RES into the power system, the role of which in Ukraine is now growing rapidly, which is very good," said Nicolas Breham, Chief Executive Officer at RTE international.

The RTE international study was funded with a grant from the French Ministry of Economy and was performed in two phases. The first phase encompassed the determination of capacity required to ensure a sufficient level of reserves to increase the flexibility of the IPS of Ukraine, and included the feasibility study for construction of energy storages in Ukraine. During the second phase recommendations were developed for preparation of technical specifications and conduct of the tender to build the energy storage.

The study evaluated two scenarios for providing a frequency containment reserve. The first one considered the construction of thermal power plants, which would cost 1.4 billion euros and increase CO2 emissions by 50% above the existing level. The second phase reviewed the construction of the energy storage costing 146 million euros, which will not have such environmental footprint.

The implementation of the energy storage project is planned for 2021-2022. For the first phase of the project, the French government is willing to provide a concessional loan for about 20 million euros.

National Power Company Ukrenergo is a private joint stock company with 100% state-owned shares, which is managed by the Ministry of Finance of Ukraine. Ukrenergo is the transmission system operator of Ukraine with the functions of operational and technological control of the Integrated Power System of Ukraine (IPS), transmission of electricity via trunk power grids from generation to distribution networks, as well as commercial metering administrator and settlement administrator of the electricity market of Ukraine.