Romania energy storage for grid stability

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The price of electricity on the balancing market in Romania spiked at RON 16,000 (EUR 3200) per MWh in the morning of July 2, as the production of intermittent generators (wind farms most likely) exceeded initial estimates. Meanwhile, the share of thermal (coal and natural gas-fired) electricity exceeded more than one-third of total production amid subdued output of solar parks and hydropower plants.

The higher reliance on wind and solar energy is putting the stability of Romania"s power grid as well as the end-user prices at risk unless more power storage capacities are installed.

Around noon, 15% of the energy production was generated in the coal-fired plants that Romania seeks to close by 2032 at the latest, according to Ziarul Financiar. At the same time, Hidroelectrica"s hydropower plants accounted for only 21% of the total (compared to an average of one-third) amid low levels of water in the dams. Transelectrica data show that at the end of June, the filling level of the dams was 83%, lower than 93% at the end of June 2023.

The minister of energy summoned for talks representatives of the market operator (OPCOM) and those of the National Energy Dispatch (DEN) - both departments under the supervision of power grid operator Transelectrica - which recently warned that more power storage capacities are needed as the solar parks and wind farms are increasing their (intermittent) contribution to the power generation mix, Economica reported.

The balancing price is paid by producers who generate either more or less than initially estimated and is charged by suppliers of balancing services - typically gas-fired power plants or hydropower plants, which can adjust upwards or downwards their production on short notice, such as to keep the system under control.

The Monsson Group has recently inaugurated, in Constanta County, the largest electricity storage unit installed and produced in Romania, the battery system being made by Prime Batteries Technology. Storage capacity will help reduce the volatility of renewable energy production and thus contribute to the stability of the energy system. This is part of the first hybrid photovoltaic-wind-battery project, within the Mireasa Wind Park, with a capacity of 50 MW.

The storage unit has an installed power of 24 MWh – (6MWx4h), is built by Monsson, through a unique project, patent pending, and uses batteries of local production, produced by the Romanian company Prime Batteries Technology.

The storage unit will be charged with energy produced by the existing operational 50 MW Mireasa Wind Farm, with photovoltaic energy produced by the 35MW Galbiori 2 photovoltaic park under construction and to connected to the grid in 2024, as well as from the national grid when there is no wind or sun.

Control of the hybrid project is fully automated remotely, without local operational staff, and will operate in an integrated system through proprietary software developed by Monsson.

The Romanian company Prime is one of the leading producers of energy storage solutions in the European Union. The company was founded in 2016 and is based in Bucharest. With over 37 years of cumulative experience in the Li-ion battery business, the company is focused on adding value in the energy storage solutions industry.