Moldova utility-scale energy storage

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The US will provide US$85 million in foreign aid to the Republic of Moldova for battery energy storage system (BESS) projects, as well as high voltage transmission line upgrades, secretary of state Anthony Blinken said last week (29 May).

The result of the projects would be a strengthening of the country’s energy resilience and a stronger grid, Blinken said in a press event from the capital Chisinau.

The announcement press conference did not reveal the size of the BESS project, but Blinken’s statement indicated the BESS should be a substantial, if not majority portion of the funding. Blinken said the funding would “enhance things like battery storage, as well as the high voltage transmission lines that we"ve already dedicated some funds to.”

The US$85 million is part of a larger US$300 million package from the US to Moldova, which borders Ukraine. Russia’s invasion of Ukraine in February 2022 sparked a gas market crisis, which was particularly pronounced in Europe, leading to the continent to up its renewable energy deployment goals.

“We"re partnering closely to support economic and energy security. The Russian attacks on the Ukrainian energy grid have exacerbated Moldova"s own energy challenges - raising electricity prices, hurting business and harming consumers,” Blinken said.

“The partnership that we have to reduce Moldova"s dependence on Russian energy, to enhance connectivity with Europe, to increase the use of renewables - all of that, is moving forward. And we"ve seen you [Moldova] take remarkable steps in a short period of time to move away from this dependence.”

Energy-Storage.news" publisher Solar Media will host the 2nd Energy Storage Summit Central Eastern Europe on 24-25 September this year in Warsaw, Poland. This event will bring together the region"s leading investors, policymakers, developers, utilities, energy buyers and service providers all in one place, as the region readies itself for storage to take off. Visit the official site for more info.

The transition of the Moldovan power system from one that depends on imports and fossil fuels to one that is more self-reliant on domestic, renewable resources requires actions in two main areas. Firstly, an environment must be created that removes barriers for entry, encourages investment and mobilises finances for the deployment of renewable technologies. Secondly, Moldova needs to transition its power system to one that is flexible so that it can integrate the developing shares of variable renewables.

Power system flexibility is defined as "the ability of a power system to reliably and cost-effectively manage the variability and uncertainty of demand and supply across all relevant timescales, from ensuring

instantaneous stability of the power system to supporting long-term security of supply" (IEA, 2019a).

Flexibility is already an important characteristic of all power systems, as they have been required to be able to respond to changes in electricity demand or sudden generation or transmission equipment failure. However, with the increasing prominence of VRE in global power systems, there has been a growing need to actively evaluate their inherent flexibility while planning and transforming systems to become more flexible.

There are four main flexibility resources: power plants (both conventional and VRE), electricity networks, storage and distributed energy resources. Appropriate policy, market and regulatory instruments are required to harness their full potential for flexibility. These options can be grouped into several categories of actions at various levels of decision making, as depicted below.

In order to capture the evolving impacts of VRE on power systems, and the resulting system integration issues, the IEA has developed a phase categorisation for systems under transition. The integration of VRE can be categorised into six different phases, with each phase having its unique set of challenges and potential solutions. This framework can be used to prioritise different measures to support system flexibility, identify relevant challenges and implement appropriate measures to support the system integration of VRE.