

Energy storage economics germany

Published on 19 December 2023 by the German Federal Ministry for Economic Affairs and Climate Action (BMWK), the strategy (PDF, in German) is aimed at supporting the ramp up of electricity storage and achieving "optimal integration" of storage into the electricity system.

BMWK said higher shares of electricity storage will be needed to integrate the German renewable energy targets comprising 215GW of solar PV and 145GW of combined offshore and onshore wind by 2030. The ministry identified 18 separate areas it considered appropriate to take measures in to promote storage deployment.

Those include electricity storage's role in the context of the national Renewable Energy Sources Act (EEG), acceleration of network connections, promoting the production of battery cells and system components, identifying obstacles to the development of pumped hydro energy storage (PHES) and network charging schemes.

While the strategy doesn't yet spell out specific actions, its release puts electricity storage on the German political agenda for the first time, with the support of the government, said Lars Stephan, senior manager of policy and market development for Fluence on business networking site LinkedIn.

Fluence and four other energy storage-related companies active in the German market recently commissioned a report analysing the projected need for energy storage on the country's grid. Authored by consultancy Frontier Economics, it found that with a supportive policy framework in place, Germany's capacity of deployed storage will rise to 15GW/57GWh by 2030 and to 60GW/271GW by 2050.

Frontier Economics also found that those levels of storage deployment could provide around EUR12 billion (US\$13.04 billion) in economic benefit by the mid-Century, and lowering wholesale electricity prices by, on average, EUR1/MWh between 2030 and 2050.

"Without the flexibility provided by storage, the country will face higher economic costs caused by increasing gas imports and expensive curtailment of renewable generation" Frontier Economics director Dr Christopher Gatzen said.

Frontier Economics and the companies which funded the study (Fluence, developers Baywa r.e., Kyon Energy, ECO STOR and optimiser/trader enspired, recommended that two main actions to be taken include setting a national deployment target for storage and setting aside "corridors" for energy storage facilities.

Recent analysis from the Fraunhofer Institute for Solar Energy (Fraunhofer ISE) installed base of battery

storage close to doubled last year, going from 4.4GW/6.5GWh of cumulative installs by the end of 2022 to 7.6GW/11.2GWh by the end of 2023. Pumped hydro connected to the grid, totalling 6GW, remained unchanged.

Last year also marked the first time ever that renewables covered the majority of energy consumption in Germany, Fraunhofer ISE said, with 260TWh of wind and solar PV meeting 57.1% of electrical load in 2023, versus 242TWh and 50.2% in the previous year.

Frontier Economics said it expects the growth of energy storage in Germany to mirror the success of solar, and it and BMWK both pointed out that unlike the early days of the solar boom, storage systems are being deployed on an unsubsidised basis.

A Q3 2022 article for our quarterly journal, PV Tech Power (Vol.32) looked at how the growth of renewables and need for energy independence from Russia were among macro drivers for the resurgence of Germany's utility-scale front-of-the-meter (FTM) storage market.

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