European Association for Storage of Energy

The Electricity Market Design Revision

Enabling energy storage for a carbon-neutral future

In the past year, Europe has witnessed climate change-related crises, security of supply issues, and unexpected price spikes. A principal reduction of fossil fuel consumption is essential to solve these challenges: new electricity market design enabling energy storage is critical to achieving this. How do we make sure energy storage can support achieving carbon-neutral security of supply? Can we reach the renewable targets without deploying enough flexibility and energy shifting technologies? What kind of revenue streams are needed to provide solid investment signals? What changes in system planning are needed to ensure a fast-paced transition that looks at the future?

Decarbonise capacity remuneration mechanisms:
Rethinking security of supply is essential to phase out fossil fuels and encourage home-produced renewable electricity, where energy storage provides the capacity needed to "keep the lights on". To do so, the CM carbon cap needs to be lowered to 250g of CO2 per kWh, and carbon-neutral technologies should be awarded longer contracts with higher remuneration.

Unlock storage with low-carbon system products:
Energy storage is able to provide a range of services such as black start, voltage control, reactive power, and congestion management. The new market design must ensure that these services to support the grid are procured from low-carbon sources.

Reduce curtailment and replace gas peaking plants:
In 2020, Germany curtailed 6,146 GWh of renewable electricity, enough to cover the entire electricity needs of Liechtenstein, and instead frequently relied on natural-gas turbines. Europe needs to harness energy storage to prevent thrown-away energy and strengthen its cap on renewable curtailment.

Untap long-term investment and revenue streams:
Energy storage lacks access to long-term contracts such as PPAs or (as support schemes) contracts for difference. Encouraging the use of these long-term mechanisms would enable private investments and provide guarantees for project developers, effectively giving a jump-start to the large-scale deployment of energy storage across Europe.

Forward-looking system planning:
System operators should have a transparent, long-term vision for flexibility needs in Europe. Storage-only auctions to support increased flexibility should be considered to ensure future renewables can be rapidly deployed.

Establish energy storage as a new pillar of the energy system:
By defining flexibility and energy shifting abilities, energy storage can be classified as an asset category of its own: this would end discriminatory treatment such as double taxation, discriminatory grid fees, and permitting barriers.

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