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An EU Perspective on Decarbonisation: The Need for Energy Storage Targets

Patrick Clerens*

The European Association for Storage of Energy (EASE), Brussels, Belgium

Abstract The EU is shifting from an energy system dominated by fossil fuels that can be dispatched to match energy consumption at all times, to a system with more and more renewable energy sources, which are intermittent. While Europe faces an unprecedented energy crisis, the European Commission provides vital leadership with the Fit for 55 and REPowerEU packages: the first has set a 55% GHG reduction target by 2030, and the latter has recently raised the renewable energy sources (RES) target from 40 to 45% by 2030. However, Europe today is not ready to integrate the increasingly high shares of renewables and make them available when needed. On low wind or cloudy days, dispatchable backup supply typically from fossil fuel gas generators is used to cover the energy shortfalls. Furthermore, when there is overproduction of wind and solar exceeding demand, the excess energy is curtailed and essentially wasted. Energy storage already represents a solution deployed across the world, thanks to its ability to provide system flexibility and energy shifting. Currently, in the EU there are approximately 60 GW of installed electricity storage (batteries and pumped hydro), with market projections to reach 110 GW by 2030. Nevertheless, the European Association for Storage of Energy (EASE) estimates an energy storage requirement of approximately 200 GW by 2030 and 600 GW by 2050. Formalising energy storage targets will provide the necessary long-term vision to market players, utilities, investors, and policymakers to make strategic decisions with confidence, in a context of global uncertainty about market growth, technologies, and cost.

Keyword(s)

Decarbonization, Energy storage, European association, Battery, Pumped hydro, Energy shifting

*Corresponding Author's E-mail: p.clerens@ease-storage.eu