

Kongres Container

The role of European solar power generation and energy storage systems



Overview

Are solar and storage delivering European energy security and competitiveness?

The new reports underline the potential of solar and storage delivering European energy security and competitiveness. 'Embracing the benefits of Hybrid PV systems' - which includes solar hybrid projects with storage, wind, or both - estimates that hybrid projects have a 10% lower Levelised Cost of Electricity compared to standalone projects.

How does energy storage work in the EU?

The main energy storage method in the EU is by far 'pumped storage hydropower', which works by pumping water into reservoirs when there is an electricity surplus in the grid - for example on a sunny or windy day - and releasing it when more energy is needed.

Who is Solarpower Europe?

Walburga Hemetsberger, CEO of SolarPower Europe (she/her) said: "SolarPower Europe has represented the full European solar value chain for 40 years. From 50 MW of solar globally in 1985, to 350 GW alone in the EU last year, we are so proud to be powering the equivalent of 75 million EU households today.

What are Europe's 'flexible buildings & resilient grids' & 'mission Solar'?

Complementing SolarPower Europe's flagship flexibility reports, like the annual 'EU Battery Energy Storage Systems Outlook', or Mission Solar 2040, the Association has published two further reports. 'Flexible Buildings, Resilient Grids' and 'Embracing the benefits of Hybrid PV systems' focus on distributed and utility flexibility respectively.

What is the European energy storage inventory?

The Commission's European Energy Storage Inventory can help address this

gap within Europe. Launched in March 2025, it is the first European-level tool of its kind, providing a real-time dashboard of energy storage levels in Europe, offering energy storage data across a full range of technologies.

What is the role of ESS in power electronic converters?

Moreover, ESS may facilitate the implementation of grid forming functionalities in power electronic converters by providing the energy needed for supporting the grid when necessary. Thus, this section provides also a brief introduction to grid forming features especially highlighting the role of ESSs.

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