

Cost-effective energy storage





Overview

Why do we need energy storage solutions?

As the global energy transition accelerates, the need for reliable, scalable and cost-effective energy storage solutions has never been greater.

How does energy storage affect energy prices?

As energy storage is added to the grid, the high July and December prices are reduced but prices in neighbouring months increase. In the 20 TWh scenario, average marginal prices for July, August, November, December and January range from 52 to 100 \$/MWh while other months average 35 \$/MWh or less.

How does energy storage affect marginal prices?

This large variability in marginal price decreases as energy storage is added to the grid since energy storage shifts the costs of generation during periods of peak demand to periods of low demand. For example, with 20 TWh of storage, 99% of marginal prices drop below 130 \$/MWh and only 32% of marginal prices are still at 0 \$/MWh.

Do energy storage mandates reduce variability in electricity prices?

We find that energy storage mandates largely reduce the variability in electricity prices, especially for the first 20 TWh of mandates (Fig. 6a). In the 1.94 TWh baseline, 82% of the marginal prices are at 0 \$/MWh since for large portions of the year the WECC generates more renewable energy than it needs.



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