

Should investors invest in energy storage technology?

For those who decide to invest, limited and declining revenue prospects could lead to competing strategies of energy storage investment and operation, where investors opt for technologies with specific technical attributes in the competitive market.

Can energy storage be a strategic investment under competition?

These market dynamics serve as a motivation for this study to understand strategic investments in energy storage under competition, taking into account storage impact on the market price. Our work uses energy arbitrage as a test case with the intent to explore additional services in the future.

Are investors allowed to deploy different energy storage technologies?

Investors are allowed to deploy different energy storage technologies. Analytically, we show that an increasing number of investors will increase the market competition thereby reducing profits while increasing the total capacity of storage deployed.

Is energy storage a price-maker?

When it comes to accounting for energy storage as a price-maker, some studies (e.g., , , ,) only consider the operation of the energy storage asset without accounting for the decision and cost of the storage energy- and power-capacity investment itself.

Can multiple energy storage investors invest in heterogeneous storage technologies?

Our work studies the strategic investment behavior among multiple energy storage investors in CAISO. These investors can choose to invest in heterogeneous storage technologies. At the beginning of an investment horizon, each investor decides the invested energy and power capacities.

What is the value of energy storage?

1. Introduction The value of energy storage has been well catalogued for the power sector, where storage can provide a range of services (e.g., load shifting, frequency regulation, generation backup, transmission support) to the power grid and generate revenues for investors .

Abstract In the face of escalating extreme weather events and potential grid failures, ensuring the resilience of the power grid has become increasingly challenging. Energy ...

The energy storage market in Germany is undergoing a rapid transformation, which is being fuelled by a growing demand for flexible grid solutions, policy support, and advancements in ...

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