

Energy storage power station profit model processing





Overview

Methods: The model integrates the marginal degradation cost (MDC), energy arbitrage, ancillary services, and annual operation and maintenance (O&M) costs to calculate the net profits of the EES power station. How do business models of energy storage work?

Building upon both strands of work, we propose to characterize business models of energy storage as the combination of an application of storage with the revenue stream earned from the operation and the market role of the investor.

Is energy storage a profitable business model?

Although academic analysis finds that business models for energy storage are largely unprofitable, annual deployment of storage capacity is globally on the rise (IEA, 2020). One reason may be generous subsidy support and non-financial drivers like a first-mover advantage (Wood Mackenzie, 2019).

Should pumped storage power stations use a three-stage model?

The calculation example analysis shows that compared with the traditional model, the “three-stage” model can bring better benefits to the pumped storage power station, and when the actual value of demand fluctuates within –8%, the pumped storage power station has the ability to resist risks higher than the market average.

How is the equivalent profit of energy storage calculated?

In this model, the equivalent profit of energy storage in the configuration stage is calculated based on the expected profit in the operation stage. Meanwhile, the expected profit in the operation stage also depends on the optimization of energy storage capacity configuration in the configuration stage.



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