

Profit model of user-side energy storage power station





Overview

The profit model of energy storage power stations operates primarily through: 1) frequency regulation, 2) capacity arbitrage, 3) ancillary market services, and 4) participation in energy trading markets. 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).

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 user-side energy storage a waste of resources?

However, the disorderly management mode of user-side energy storage not only causes a waste of resources, but also brings hidden dangers to the safe operation of the power grid, such as stability, scheduling and operation, power quality and other problems.

How do energy storage operators make a profit?

Energy storage operators develop their own cloud dispatching platform, whose main profit F_1 comes from the peak-valley spread revenue obtained from energy storage dispatching minus the daily operating expenses of the platform, the specific cost-benefit function is shown in Eq. (1).

Do users participate in Energy Storage pricing?

Thirdly, research on the user-side is mainly limited to residential area users, while there is limited research on users who can configure energy storage



devices themselves, such as industrial users, without considering the initiative of such users to participate in energy storage pricing.

What is user-side shared energy storage?

User-side shared energy storage is composed of interconnection and mutual benefit of adjacent energy storage devices in the same area, so the power loss in the power interaction process can be ignored 17.



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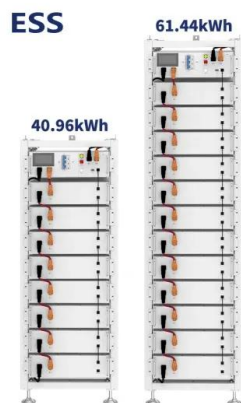
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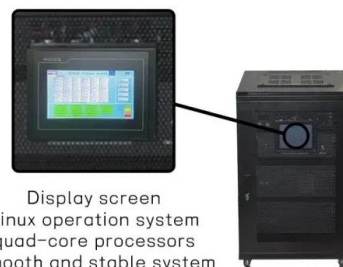
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2 PKU-Changsha Institute for Computing and Digital Economy, Changsha, China Introduction: This paper constructs a revenue model for an ...

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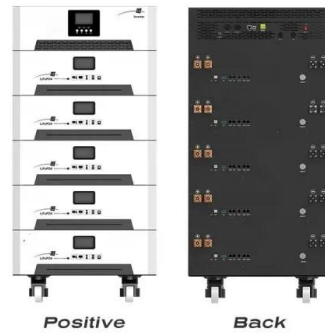
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Finally, a simulation analysis is carried out, and the results show that compared with the independent operation mode of each virtual power plant, the model proposed in this ...

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