

# The price of electricity sent back to the grid by energy storage





## Overview

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Can energy storage provide a positive net value to the electricity system?

Energy storage can offer various electricity services, and while the best deployment location is unknown, behind-the-meter storage models can already provide a positive net value to the electricity system.

How have energy storage costs changed over the past decade?

Trends in energy storage costs have evolved significantly over the past decade. These changes are influenced by advancements in battery technology and shifts within the energy market driven by changing energy priorities.

How does energy storage work?

A grid-scale energy storage firm participates in the wholesale electricity market by buying and selling electricity. Energy storage creates private (profit) and social (consumer surplus, total welfare, carbon emissions) returns. Storage generates revenue by arbitraging inter-temporal electricity price differences.

How do grid-scale batteries affect private returns to storage?

This research's focus is also motivated by the rapidly decreasing cost of grid-scale batteries; the last decade saw a 70% reduction in lithium-ion battery packs' price. In my model, private returns to storage are maximized by trading on intra-day price fluctuations in the wholesale electricity market.



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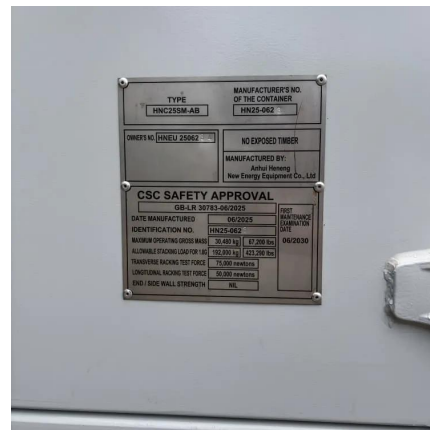


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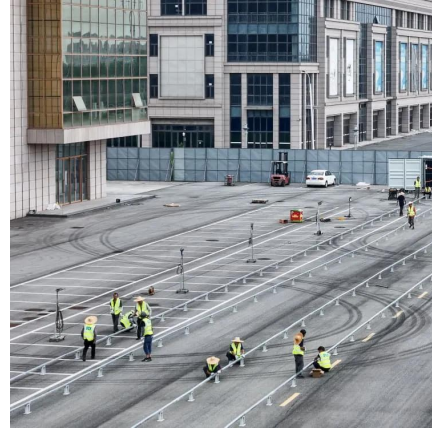
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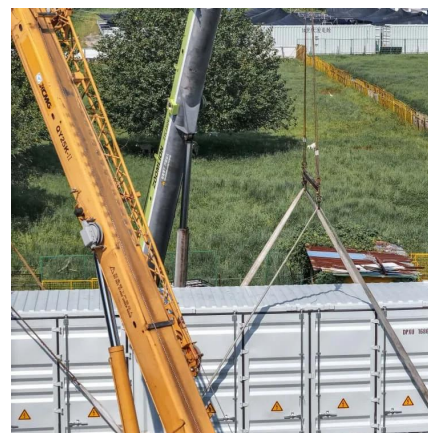


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