

SolarMax Energy Systems

PV Energy Storage Return



Overview

Spoiler: The ROI is real, but only if you play your cards right. Calculating photovoltaic energy storage return isn't rocket science, but it's not exactly tic-tac-toe either. Let's break it down: Step 1: Add up installation costs (pro tip: subtract tax credits!) Step 3: Divide costs by annual savings. Do investors underestimate the value of energy storage?

While energy storage is already being deployed to support grids across major power markets, new McKinsey analysis suggests investors often underestimate the value of energy storage in their business cases.

Is energy storage a viable option for utility-scale solar energy systems?

Energy storage has become an increasingly common component of utility-scale solar energy systems in the United States. Much of NREL's analysis for this market segment focuses on the grid impacts of solar-plus-storage systems, though costs and benefits are also frequently considered.

What is storage NPV in terms of kWh?

The storage NPV in terms of kWh has to factor in degradation, round-trip efficiency, lifetime, and all the non-ideal factors of the battery. The combination of these factors is simply the storage discount rate. The financial NPV in financial terms has to include the storage NPV, inflation, rising energy prices, and cost of debt.

How do I evaluate potential revenue streams from energy storage assets?

Evaluating potential revenue streams from flexible assets, such as energy storage systems, is not simple. Investors need to consider the various value pools available to a storage asset, including wholesale, grid services, and capacity markets, as well as the inherent volatility of the prices of each (see sidebar, "Glossary").

Is energy storage a good investment?

The return of investment is an important metric about how attractive an investment may be. However this is an important note that energy storage usually does not generate electricity savings directly, but allows the transport or trading of electricity. This usually results in storage not having a high ROI like solar investments, for example.

Should energy storage be undervalued?

The revenue potential of energy storage is often undervalued. Investors could adjust their evaluation approach to get a true estimate—improving profitability and supporting sustainability goals.

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Maximizing Your Photovoltaic Energy Storage Return: A Smart ...

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Solar-Plus-Storage Analysis , Solar Market Research & Analysis , NREL

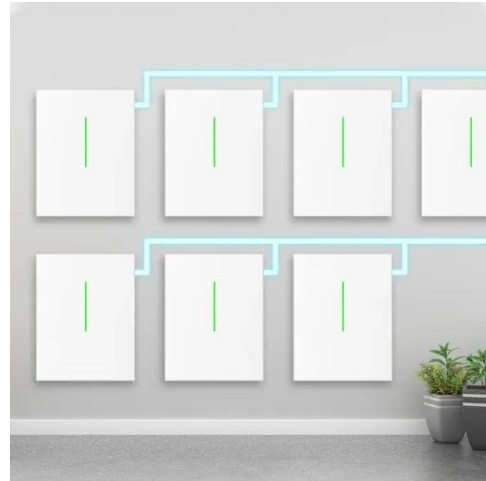
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