

Economic Benefits Comparison of 20-foot Smart Photovoltaic Energy Storage Containers for Community Use





Overview

What is a photovoltaic (PV) system?

When combined with Battery Energy Storage Systems (BESS) and grid loads, photovoltaic (PV) systems offer an efficient way of optimizing energy use, lowering electricity expenses, and improving grid resilience.

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 are the benefits of solar-plus-storage?

Among other benefits, it can help maintain the stability of the electric grid, shift energy from times of peak production to peak consumption, and limit spikes in energy demand. Solar-plus-storage shifts some of the solar system's output to evening and night hours and provides other grid benefits.

Does storage increase PV self-consumption?

In our analysis, storage is operated to maximize PV self-consumption, however, there are many other applications for storage to create value. These include provision of ancillary services and participation in energy markets with fluctuating prices, although a minimum size threshold is required for the latter.



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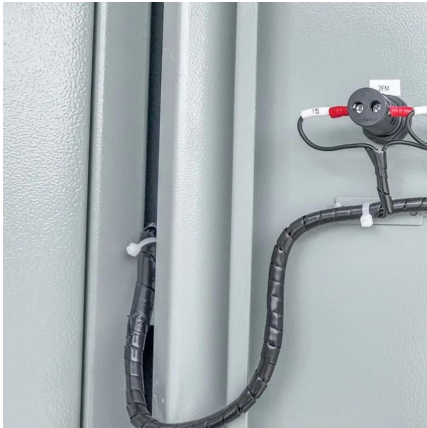
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