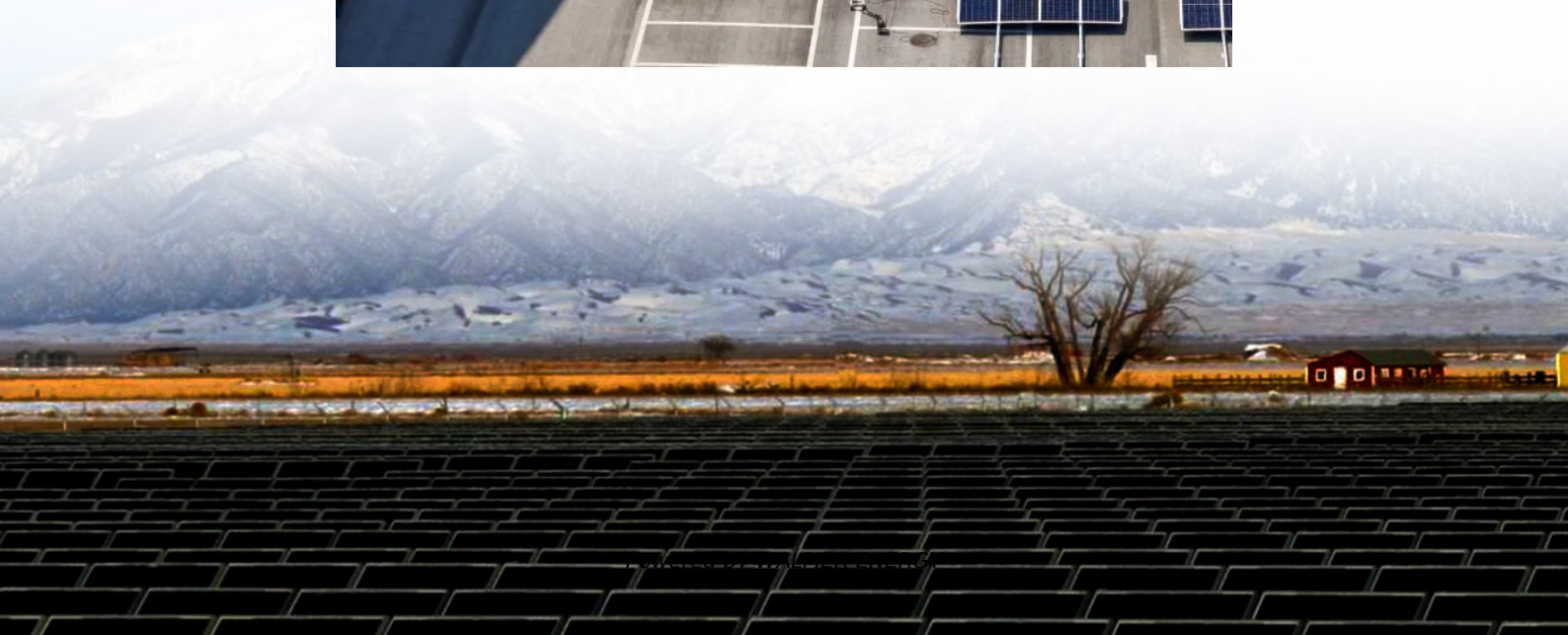


BESS house rooftop solar panels





Overview

This study evaluates the optimal sizing and economic analysis of the rooftop solar photovoltaic (PV) and lithium-ion battery energy storage system (BESS) for grid-connected households. Two types of househ.

What is rooftop solar with Bess?

Rooftop solar with BESS is a practical, scalable solution to modern energy challenges. It empowers commercial and industrial users with control, flexibility, and cost savings, while supporting a cleaner, more resilient grid. As energy systems evolve, solar + storage is poised to be a cornerstone of the distributed, decarbonized future.

How much would a rooftop solar system cost without Bess?

Without BESS, the same household could install 10 kW of rooftop solar, which would cost \$28,700 and save \$1,567 per year. PGE and the state of Oregon both offer incentives for rooftop solar and battery energy storage. With the utility, state, and federal incentives, the combined solar and BESS system could be paid back within 11 years.

Are rooftop solar panels or battery energy storage systems worth the cost?

Pacific Northwest National Laboratory (PNNL) researchers are here to help. Homeowners must navigate a quagmire of complicated policies to determine whether the energy savings from rooftop solar panels or battery energy storage systems (BESS) are worth the high upfront cost.

What is a solar energy Bess system?

A Solar Energy BESS system combines solar panels, batteries, and other components to generate, store, and manage electricity. In simple terms, it captures solar energy when it is abundant, stores it in batteries, and provides a steady power supply whenever needed.



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