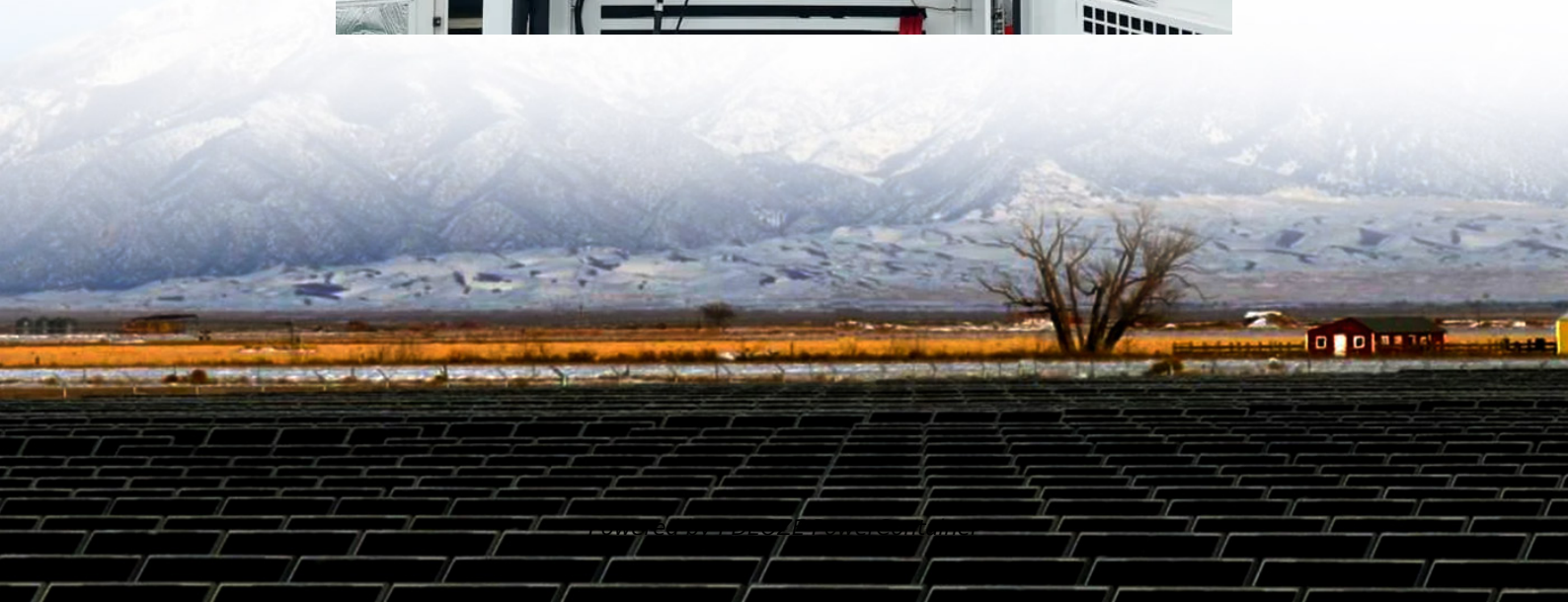


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Is solar energy storage cost-effective for home use



Overview

Solar energy storage significantly reduces homeowners' electricity costs by allowing them to store excess energy generated during the day for use at night or during peak demand times. What are the benefits of rooftop solar and battery storage?

Rooftop solar and battery storage can reduce energy costs and provide affordable back-up power for over 60% of US households, but benefits often bypass the high outage risk and disadvantaged communities most in need.

Do solar-battery systems reduce energy costs?

On average, households achieve a 14.7% reduction in electricity costs or cover approximately 50.5% of their essential energy needs during outages, underscoring the substantial potential of solar-battery systems to enhance energy affordability and resilience for households.

Can a household save money on electricity costs?

We find that 60% of households could reduce electricity costs with average savings of 15%, whereas 63% of households could achieve affordable back-up power during power outages covering an average of 51% of their essential energy needs.

What is the economic viability of solar-battery systems?

The economic viability of solar-battery systems is characterized by whether, and to what extent, a household can reduce its overall electricity costs through the installation of solar PV, battery storage or both technologies in combination.

Does a solar-battery backup increase electricity costs?

To ensure affordability, we impose a constraint that the expected household electricity costs under the back-up plan do not exceed those of a scenario with no solar or battery. This ensures that installing solar-battery systems for

backup does not increase a household's overall electricity expenses relative to having no installations.

Do US households benefit from solar PV & battery storage under NBT?

Our findings show that a majority of US households stand to benefit from solar PV and battery storage under NBT, with 60.3% potentially reducing their electricity costs and 62.7% achieving affordable back-up power.

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