

SolarTech Power Solutions

Solar system prices in the United States



Overview

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Each year, the U.S. Department of Energy (DOE) Solar Energy Technologies Office (SETO) and its national laboratory partners analyze cost data for U.S. solar photovoltaic (PV) systems to develop cost benchmarks. These benchmarks help measure progress toward goals for reducing solar electricity costs.

As electricity prices continue to rise and electricity demand continues to grow, states and utilities have turned to solar as the lowest cost option for meeting incremental demand quickly and affordably. Solar’s growth has been enabled by the technology’s rapid cost declines since the early 2010s.

NREL analyzes the total costs associated with installing photovoltaic (PV) systems for residential rooftop, commercial rooftop, and utility-scale ground-mount systems. This work has grown to include cost models for solar-plus-storage systems. NREL's PV cost benchmarking work uses a bottom-up.

Residential system sizes have risen steadily over the past two decades, reaching a median of 7.4 kW in 2023. System sizes have grown nearly in lock-step with PV module efficiencies, as shown in the left-hand panel of Figure 1. Higher module efficiencies allow for more PV capacity, as residential.

This report covers solar PV system costs and prices in the United States across all market segments. It includes detailed breakdowns for national average system costs with various module, inverter and racking technologies across residential, commercial and utility-scale projects. The report.

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