

# Solar photovoltaic power generation area and capacity



## Overview

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In 2024, global PV power capacity grew by 597 GW to reach 2. Top installers were China (328 GW), the U. 21 Although pollutants and toxic substances are emitted during PV manufacturing, life cycle emissions are low. Abstract—The rapid deployment of large numbers of utility-scale photovoltaic (PV) plants in the United States, combined with heightened expectations of future deployment, has raised concerns about land requirements and associated land-use impacts. Yet our understanding of the land requirements of. Cumulative installed solar capacity, measured in gigawatts (GW). Data source: IRENA (2025) - Learn more about this data processed This is the citation of the original data obtained from the source, prior to any processing or adaptation by Our World in Data. To cite data downloaded from this page. Solar energy can be harnessed two primary ways: photovoltaics (PVs) are semiconductors that generate electricity directly from sunlight, while solar thermal technologies use sunlight to heat water for domestic uses, to warm buildings, or heat fluids to drive electricity-generating turbines. Solar accounted for 66% of all new electricity-generating capacity added to the US grid in 2024, as the.

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### Solar, battery storage to lead new U.S. generating capacity additions

In 2024, generators added a record 30 GW of utility-scale solar to the U.S. grid, accounting for 61% of capacity additions last year. We expect this trend will continue in 2025, with 32.5 GW of new utility ...

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### Global Solar Atlas

The Global Solar Atlas provides a summary of solar power potential and solar resources globally.

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### Solar energy

Solar PV is highly modular and ranges in size from small solar home kits and rooftop installations of 3-20 kW capacity, right up to systems with capacity in the hundreds of megawatts. It has democratized ...

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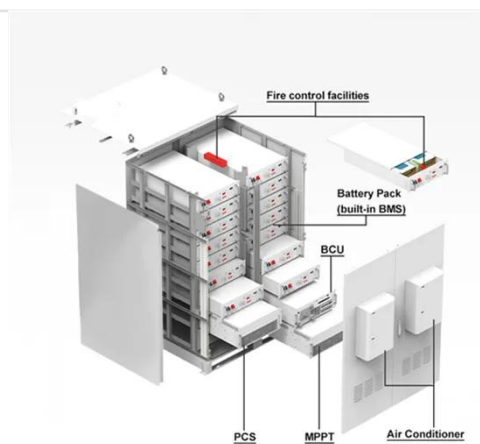
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### Installed solar energy capacity



Depending on the data, this can include standardizing country names and world region definitions, converting units, calculating derived indicators such as per capita measures, as well as ...

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## Solar PV Energy Factsheet

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## Solar Capacity by State 2026

In 2023, the United States generated approximately 4.18 trillion kilowatt-hours of total electricity at utility-scale power generation facilities, with renewable energy sources contributing

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## Land Requirements for Utility-Scale PV: An Empirical Update on ...

UTILITY-SCALE photovoltaic (PV) plants--defined here to include any ground-mounted plant larger than 5 MWAC of capacity--have quickly become

the backbone of the solar industry in the United ...

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## Solar Market Insight Report 2024 Year in Review - SEIA

1. Key figures In 2024, the US solar industry installed nearly 50 gigawatts direct current (GWdc) of capacity, a 21% increase from 2023. This was the second consecutive year of record ...

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## Global Solar Power Tracker

The Global Solar Power Tracker is composed of worldwide facility-level data on utility-scale (1 MW+) solar photovoltaic (PV) and solar thermal facilities, as well as country-aggregated distributed (<1 ...

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