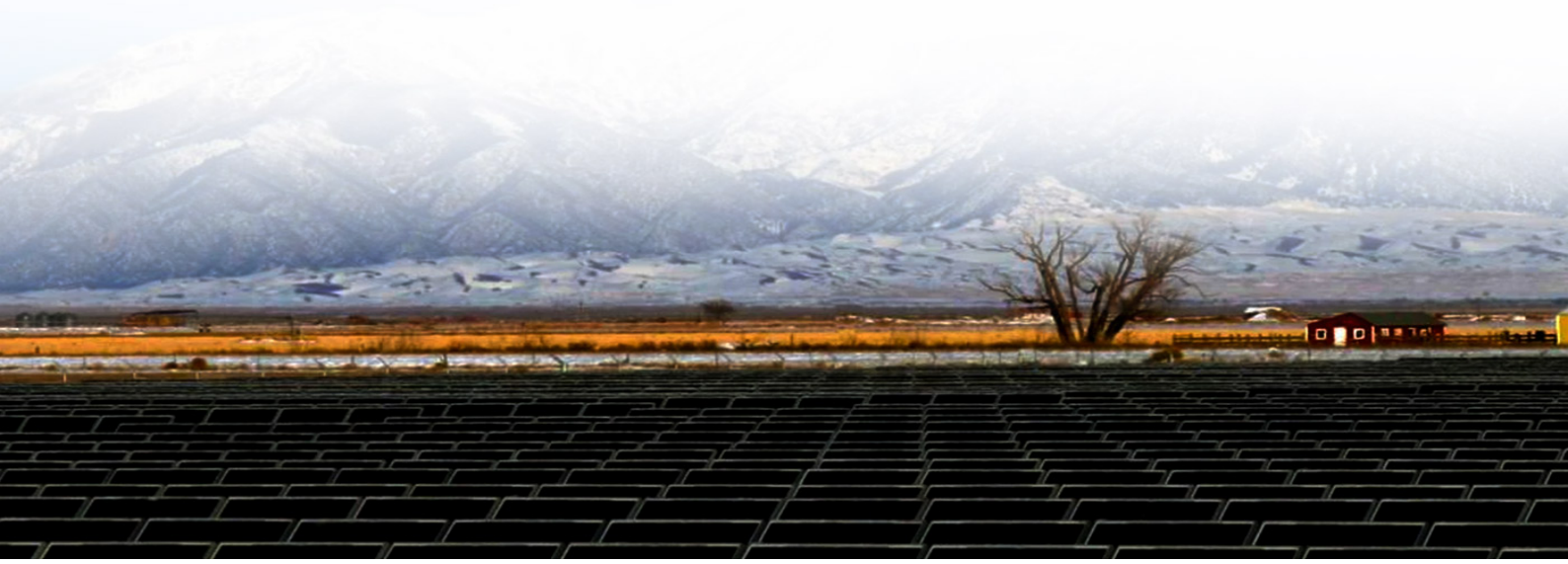
# Is large-scale solar power generation expensive



## Overview

Renewable Energy Has Achieved Cost Parity: Utility-scale solar ($28-117/MWh) and onshore wind ($23-139/MWh) now consistently outcompete fossil fuels, with coal costing $68-166/MWh and natural gas $77-130/MWh, making renewables the most economical choice for new electricity. Renewable Energy Has Achieved Cost Parity: Utility-scale solar ($28-117/MWh) and onshore wind ($23-139/MWh) now consistently outcompete fossil fuels, with coal costing $68-166/MWh and natural gas $77-130/MWh, making renewables the most economical choice for new electricity. Each year, the U. Department of Energy (DOE) Solar Energy Technologies Office (SETO) and its national laboratory partners analyze cost data for U. solar photovoltaic (PV) systems to develop cost benchmarks. These benchmarks help measure progress toward goals for reducing solar electricity costs. The latest cost analysis from IRENA shows that renewables continued to represent the most cost-competitive source of new electricity generation in 2024. The average cost per unit of energy generated across the lifetime of a new power plant. This data is expressed in US dollars per kilowatt-hour. It is adjusted for inflation but does not account for differences in living costs between countries. Data source: IRENA (2025); IRENA (2024) – Learn more. The total cost of a solar project depends on a variety of factors including, the size of the system, the types of solar panels being used, the complexity of the engineering design, and finally, the cost of land needed to construct a large-scale project.

# Is large-scale solar power generation expensive

[Solar Farms Guide: Large-Scale Solar Power & Economics 2026]

These massive installations represent the industrial side of solar energy - where efficiency meets scale to create some of the most cost-effective renewable power on Earth.

[Clean technology cost projections: investment and levelized costs of ]

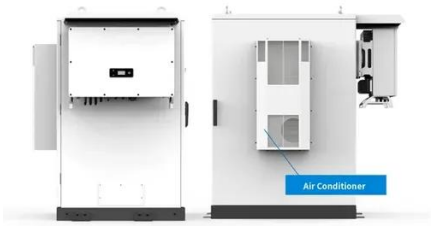
Utility-scale solar and wind power are now the lowest-cost sources of additional clean generation in many regions, with cost projections driving investment decisions and policy planning.

[Cost Of Renewable Energy 2025: Complete Guide To Solar, Wind]

The cost of renewable energy has reached a historic tipping point in 2025, with solar and wind power now representing the cheapest sources of electricity generation in most regions worldwide.

**Renewable Power Generation Costs in 2024**

Renewables continue to prove themselves as the most cost-competitive source of new electricity generation. On an LCOE basis, 91% of newly commissioned utility-scale renewable capacity ...




[Levelized cost of energy for renewables, World]

Solar (photovoltaic) panels cumulative capacity Solar and wind power generation Solar energy generation by region Solar energy generation vs. capacity Solar photovoltaic module prices vs. ...

[Solar Installed System Cost Analysis , Solar Market Research]

NLR analyzes the total costs associated with installing photovoltaic (PV) systems for residential rooftop, commercial rooftop, and utility-scale ground-mount systems.


[Solar Photovoltaic System Cost Benchmarks]

The industry survey seeks to understand the cost structure for each stakeholder, including how their costs are affected by scale, overhead, and market distortions.

[Solar and Wind's Hidden Price Tag: Why Cost Isn't the Whole Story]

Solar and wind power have become increasingly cost-competitive over the past decade, prompting claims that they are now the cheapest sources of new electricity. Federal and state ...

[The Costs of Solar: Factors & Considerations , Genie Solar]

The total cost of a solar project depends on a variety of factors including, the size of the system, the types of solar panels being used, the complexity of the engineering design, and finally, the cost of ...

**Can We Afford Large-scale Solar PV?**

Reaching 90 or 95% is indeed costly, but 70-80% appears to be well within the realm of possibility. One common objection to the large-scale use of solar PV is that, even with batteries, it ...

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