

U.S. Renewable Energy Growth in 2025

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1. Introduction

I was curious about the title subject, so I started by a query of Microsoft Bing Copilot with the phrase “Renewable Energy Growth in the U.S. in 2025.” The Response is directly below with related subjects in the following sections.

In 2025, renewable energy in the U.S. surpassed coal in annual electricity generation, with wind and solar accounting for 17–19% of total electricity, driven by strong solar growth and policy incentives.¹

1.1. Key Trends in 2025

Electricity Generation: *In 2025, U.S. electricity generation totaled approximately 4,260 billion kilowatt-hours, with wind and solar contributing 760,000 GWh combined, representing 17% of total generation. When including small-scale solar, the share rises to 19% of net generation, marking a significant increase from previous years: U.S. Energy Information Administration (EIA).*

Wind *generated 464,000 GWh, a 3% increase from 2024, while utility-scale solar reached 296,000 GWh, up 34% from the prior year (EIA).*

Capacity Additions: *Utility-scale solar was the fastest-growing source, with nearly 70 GW of new solar projects scheduled to come online in 2026–2027, representing a 49% increase in U.S. solar operating capacity compared with the end of 2025 (EIA).*

Texas led in solar capacity additions, supported by expanding battery storage to manage intermittency, with ERCOT battery capacity expected to grow from 15 GW in 2025 to 37 GW by 2027 (EIA).

Wind capacity growth slowed in traditional regions like the Midwest, with MISO wind generation remaining relatively flat through 2027 (EIA).

Policy and Market Drivers: *Strong customer demand, corporate procurement, and government incentives continued to drive renewable expansion. However, policy changes, including the phase-out of federal tax credits, import restrictions, and limitations on federal land projects, led to a downward revision of U.S. renewable growth forecasts by nearly 50% for 2025–2030 (IEA).*

Despite these challenges, conventional energy companies and nontraditional players increasingly invested in renewable energy projects, supporting mergers, acquisitions, and innovative energy credit transactions (KPMG)².

¹ Query of Microsoft Bing Copilot with the phrase “Renewable Energy Growth in the U.S. in 2025.”

² KPMG is a British multinational professional services network headquartered in London, England. It is one of the Big Four accounting firms, alongside Deloitte, EY and PwC. As of December 2024, KPMG is operated as a network of 46 firms across 145 countries, employing 275,288 people.

Sectoral Outlook: *The growth of renewables is supported by rising electricity demand from data centers, AI, cloud computing, and broad electrification across sectors, potentially increasing total energy demand by 15–20% over the next decade (KPMG)*

Solar PV dominates the expansion, while wind, hydropower, bioenergy, and geothermal contribute smaller but steady increases (IEA)

Summary:

In 2025, the U.S. renewable energy sector achieved a historic milestone by surpassing coal in annual electricity generation. Solar power led the growth, supported by utility-scale projects and battery storage, while wind maintained steady contributions. Policy incentives, corporate demand, and technological adoption continue to shape the trajectory, although regulatory changes and permitting challenges have moderated long-term growth expectations. Overall, the U.S. renewable energy landscape in 2025 reflects both rapid expansion and evolving market dynamics.

1.1.1. Utility-scale Photovoltaic (PV)

Utility-scale PV continued to lead solar deployment in 2024 (80% of new solar and 54% of all new capacity). Texas added most new capacity in 2024 and now leads the nation with the greatest cumulative solar capacity as well. 99% of new projects feature single-axis tracking.³

The capacity-weighted installed cost of solar projects that came online in 2024 increased slightly to \$1.61/WAC (\$1.22/WDC), up 1% from 2023 but down 73% from 2010. Strong economies of scale explain a quintupling of the average project size over the past eight years.

Average capacity factors range from 17% in the least-sunny regions to 31% in the sunniest. Single-axis tracking adds more than five percentage points to capacity factors in the regions with the strongest solar resource.

The generation-weighted Levelized Cost of Energy (LCOE) from utility-scale PV has increased by 25% since 2022 to \$60/MWh (without tax credits) or \$41/MWh (with tax credits) in 2024. Levelized power purchase agreement (PPA) prices have also trended upward the last few years. Since 2021 prices have typically landed between \$20–\$30/MWh in CAISO and the non-ISO West, and between \$40–\$80/MWh elsewhere, with the highest prices in the Northeast.

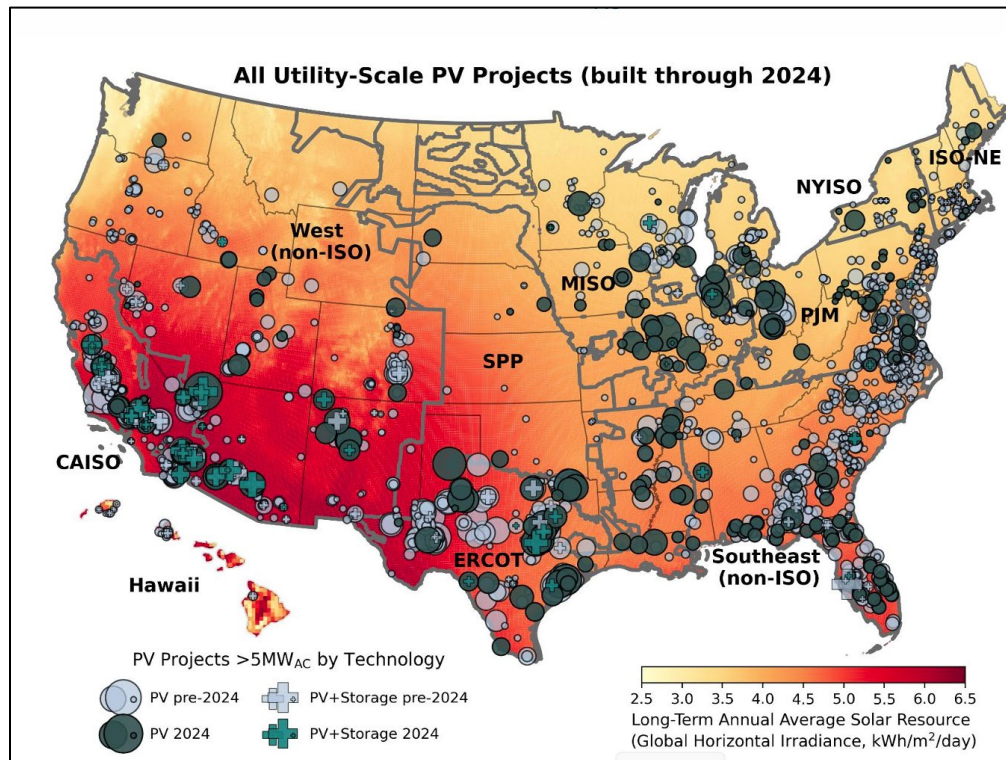
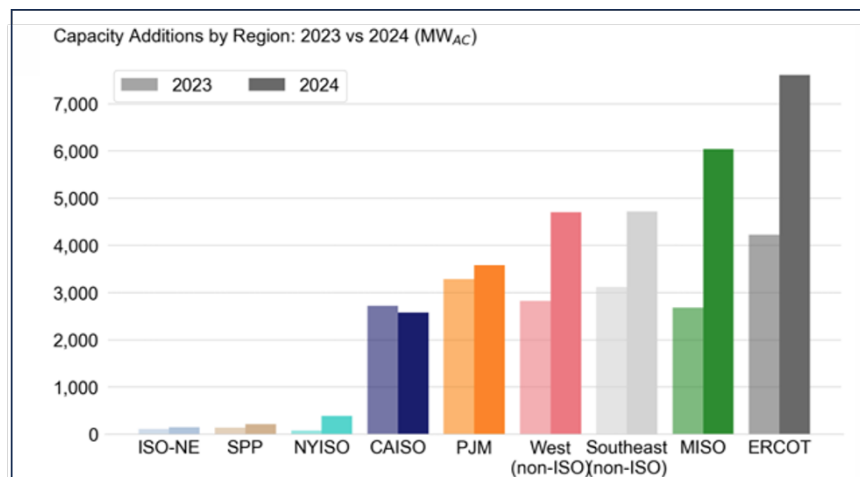
The market value of solar fell in 2024 to \$32/MWh on a national-average basis, as energy prices fell. Rising PPA prices and generation costs are now higher in some regions than solar's energy and capacity market value for the newest solar projects.

Interest in hybridization (pairing PV with batteries) continued to grow in 2024 (33 new projects). All-in battery CapEx increased to \$458/kWh in 2024.

Added costs for a PV system grow with greater storage capacity ratio (0.57) and duration (3.3h) and were \$1/WAC-PV in 2024 – equivalent to an LCOE adder of \$25/MWh (after tax credits).

³ Joachim Seel, Julie Mulvaney Kemp, Anna Cheyette, Will Gorman, Naim Darghouth, Dana Robson, Joe Rand, and Seongeun Jeong, "U.S. Utility-Scale Solar 2025 Data Update," Lawrence Berkeley National Laboratory. <https://emp.lbl.gov/publications/us-utility-scale-solar-2025-data>

Across all 7 ISOs and 49 additional utilities, there were 956GW of solar in interconnection queues at the end of 2024 (-12% vs. 2023). 47% of this proposed solar capacity is paired with battery storage, with the highest concentration of these PV+battery hybrid plants in CAISO (93%) and the non-ISO West (83%).



We define utility-scale solar as ground-mounted projects with a nameplate capacity >5 GWac (or 35 GWdc) and accounted for 54% Of all new grid-connected capacity.

The new capacity is not uniformly spread across the U.S. – growth is concentrated in ERCOT (7.6 GWac) MISO (6 GWac) and the non-ISO West and Southeast (both 4.7 GWac)

1.2. Utility-Scale Wind Energy Projects

In 2025, U.S. utility-scale wind power generated 464 TWh of electricity — 3% more than in 2024 — and was part of a record 50.3 GW of new clean power capacity added nationwide.

1.2.1. Generation and Market Share

According to the U.S. Energy Information Administration (EIA), wind power produced 464,000 GWh in 2025, up 3% from 2024.⁴

This was the second-largest annual wind generation in U.S. history, following 2024's record,⁵

Climate Central noted that wind and solar together delivered 853,210 GWh in 2025 — more than triple the 2016 total — and enough to power over 79 million average U.S. homes.

1.2.2. Key Facts

Together, solar and wind accounted for a record 19% of total U.S. electricity generation in 2025. The costs of electricity from solar and wind have decreased rapidly since 2010, and solar continues to be the fastest-growing source of electricity in the U.S.

The U.S. clean energy transition faces new headwinds. But expanding clean, affordable electricity from solar and wind will be key to meeting rising energy demands while reducing heat-trapping pollution.

This Climate Matters analysis is based on open-access data from the U.S. Energy Information Administration (EIA).

1.2.3. Current Electric Generation Status Quo

The electric power sector — which generates and distributes electricity to homes, businesses, factories, electric vehicles, and farming operations — produces 25% of all heat-trapping pollution in the U.S.

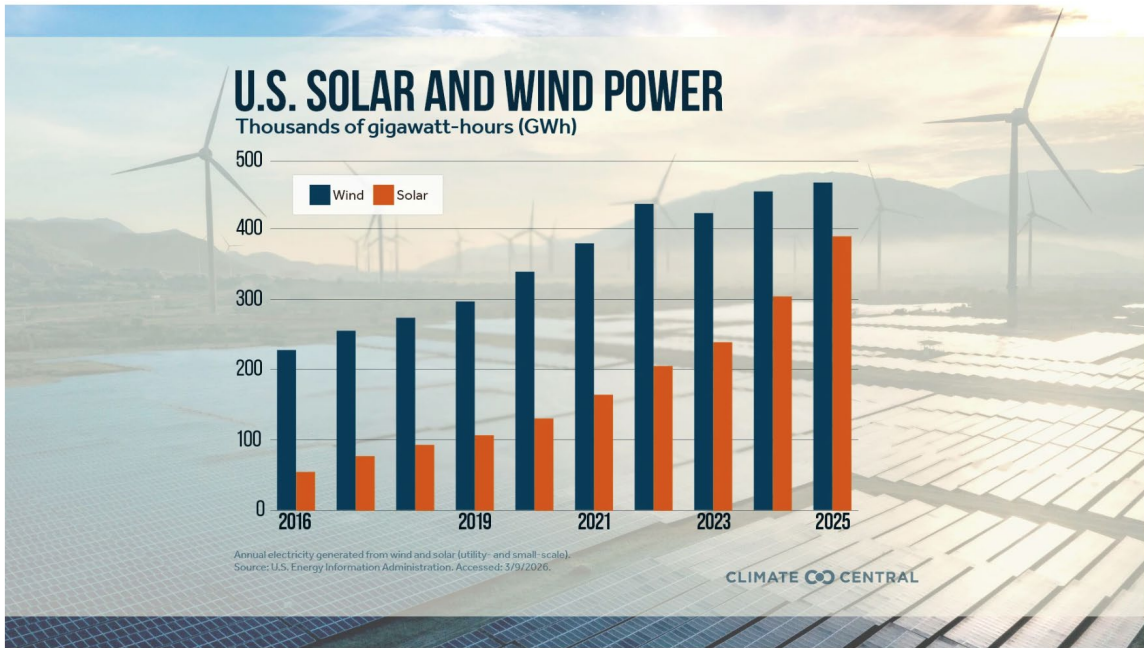
Most of this pollution comes from burning fossil fuels to produce electricity. Fossil fuels include coal, oil, and methane gas.

The U.S. is in the midst of the largest surge in U.S. electricity demand since 2000, driven by data centers. Producing more clean and affordable electricity from solar and wind will be key to meeting rising demand while reducing harmful heat-trapping pollution.

A rapid transition away from fossil fuels and toward clean, affordable energy sources like solar and wind is essential to limit dangerous warming and ensure a safer future for younger generations.

⁴ U.S. Energy Information Administration (EIA).

⁵ U.S. Solar and Wind Growth in 2025, Climate Central, <https://www.climatecentral.org/climate-matters/solar-and-wind-2026>



1.2.4. Record levels of electricity from solar and wind in 2025

In 2025, the U.S. generated a record 853,210 gigawatt-hours (GWh) of electricity from solar (46%) and wind (54%).

That's more than triple the amount generated a decade ago, in 2016 — and enough to power the equivalent of more than 79 million average homes in the U.S.

Nationally, solar power grew 28% and wind power grew 3% in 2025 compared to 2024 levels.

1.2.5. Components of Growth

California and Texas led in solar power. Together, these two states generated 40% of all U.S. solar power in 2025 (see Table 1 on the next page).

Small-scale solar plays a big role. About 24% of all U.S. solar power generated in 2025 came from small-scale solar installations, such as residential rooftop or community solar systems, which have less than 1 megawatt of capacity.

The middle of the country is a wind powerhouse. Texas alone generated 28% of all U.S. wind power in 2025 — almost three times more than the second-ranked state for wind (Iowa). Wind accounted for 58% of all electricity generated in Iowa last year — a larger share of total in-state electricity generation than any other state.

State	Solar generation in 2025 (GWh)	State	Wind generation in 2025 (GWh)
1. California	90,103	Texas	129,458
2. Texas	64,073	Iowa	43,738
3. Florida	30,131	Oklahoma	38,031
4. Arizona	21,399	Kansas	29,634
5. Nevada	15,912	Illinois	25,011
6. North Carolina	13,761	Colorado	17,118
7. Georgia	11,880	California	16,257
8. New York	10,359	Minnesota	15,399
9. Virginia	10,153	North Dakota	15,378
10. Illinois	8,750	New Mexico	14,215
U.S. Total	388,819	U.S. Total	464,391