US Renewable Energy: 2025 Q4

Utility-scale demand remains strong as rooftop market braces for further weakness.

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Executive Summary

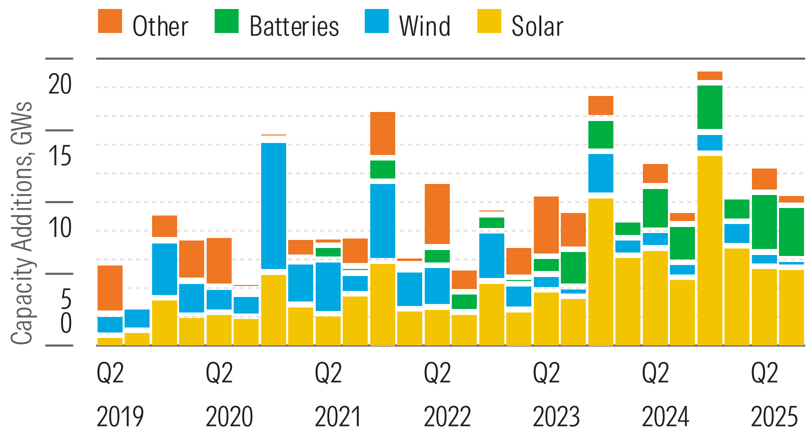
Utility-scale solar, batteries, and natural gas see strong demand environment.

AI Drives Robust Utility-Scale Demand, While Rooftop Market Braces for Further Declines in 2026

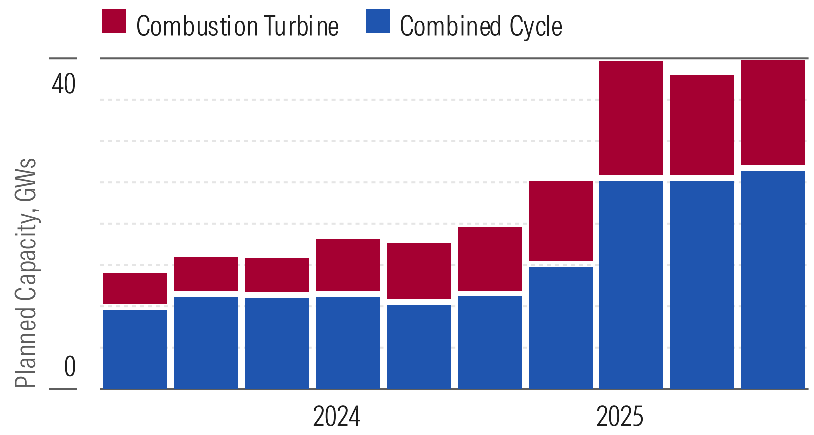
Renewables continue to dominate new capacity additions, accounting for 80%-90% in recent quarters. However, the surge in power demand from artificial intelligence data centers is driving a resurgence of legacy technologies, namely natural gas, with planning-stage projects increasing markedly in recent quarters. We think an all-of-the-above approach will be necessary to meet rising power demand.

Rooftop solar demand has remained weak as high interest rates weigh on economics. We expect the market to contract further in 2026 as the loss of the tax credit for homeowner-owned systems weighs on demand. On a positive note, 2026 should represent a bottom in demand, and we see potential green shoots in the longer term from rising utility rates.

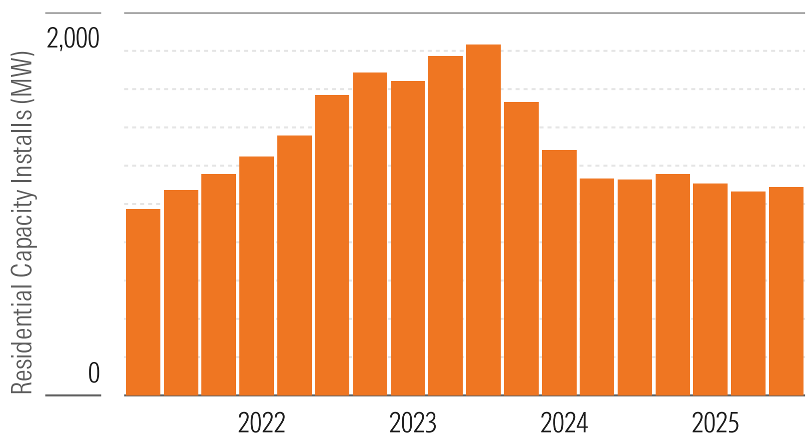
Renewables Dominate New Capacity Additions...



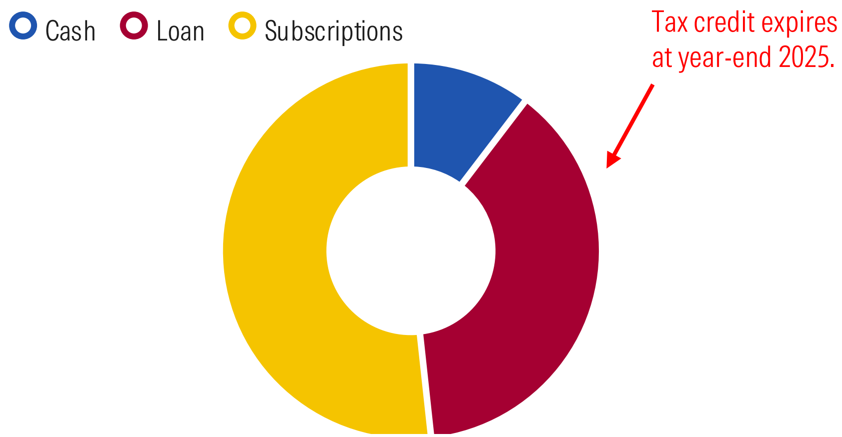
...But Pipeline of Natural Gas Plants Is Growing



Rooftop Solar Expected to See Further Declines in 2026...



...As Loss of Tax Credit Weighs on Market Demand

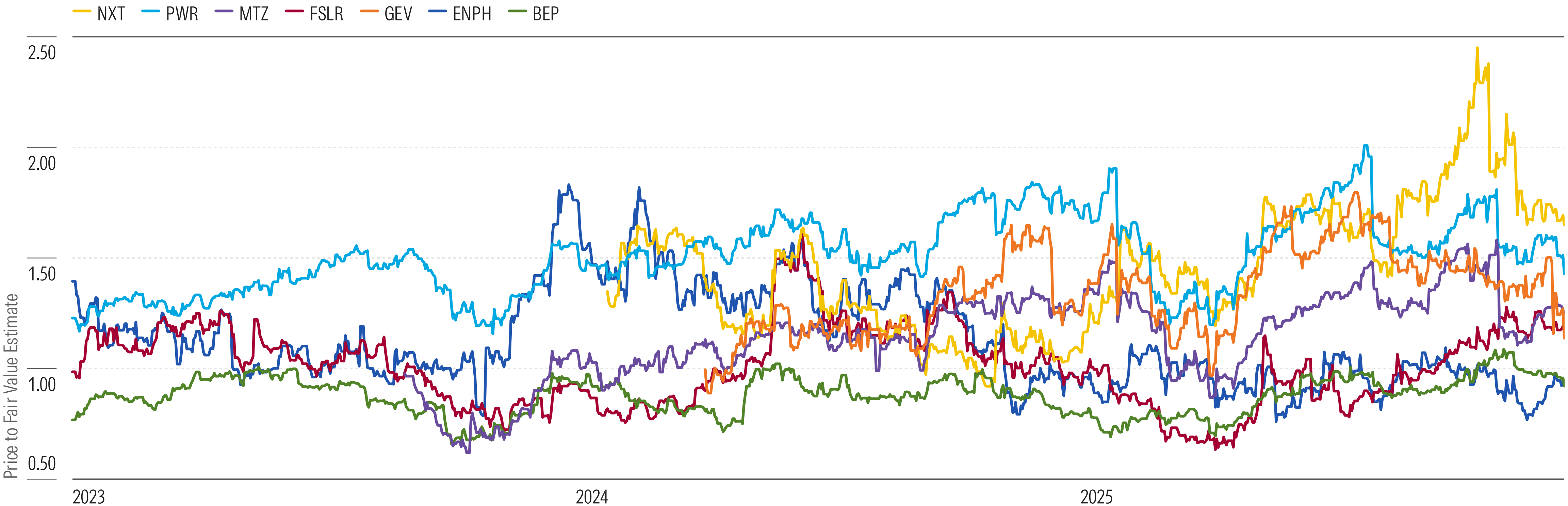


Source: US Energy Information Administration (EIA), Solar Energy Industries Association, Sunrun. Bottom right chart is based on Q1 2025 data. Data as of Dec. 18, 2025.

Valuations Vary Across Our Renewable Energy Coverage

Renewable energy equities have broadly rallied in the second half of 2025 following US policy clarity that was not as bad as feared. Valuations remain bifurcated across our coverage list. We still see the most elevated valuations in equities tied to the AI data center theme, including GE Vernova and Quanta Services. In contrast, more reasonable expectations are priced into the likes of Brookfield Renewable and Enphase Energy.

Valuations Have Bounced in Recent Months as Tariff and Renewable Energy Policy Uncertainty Begins to Clear



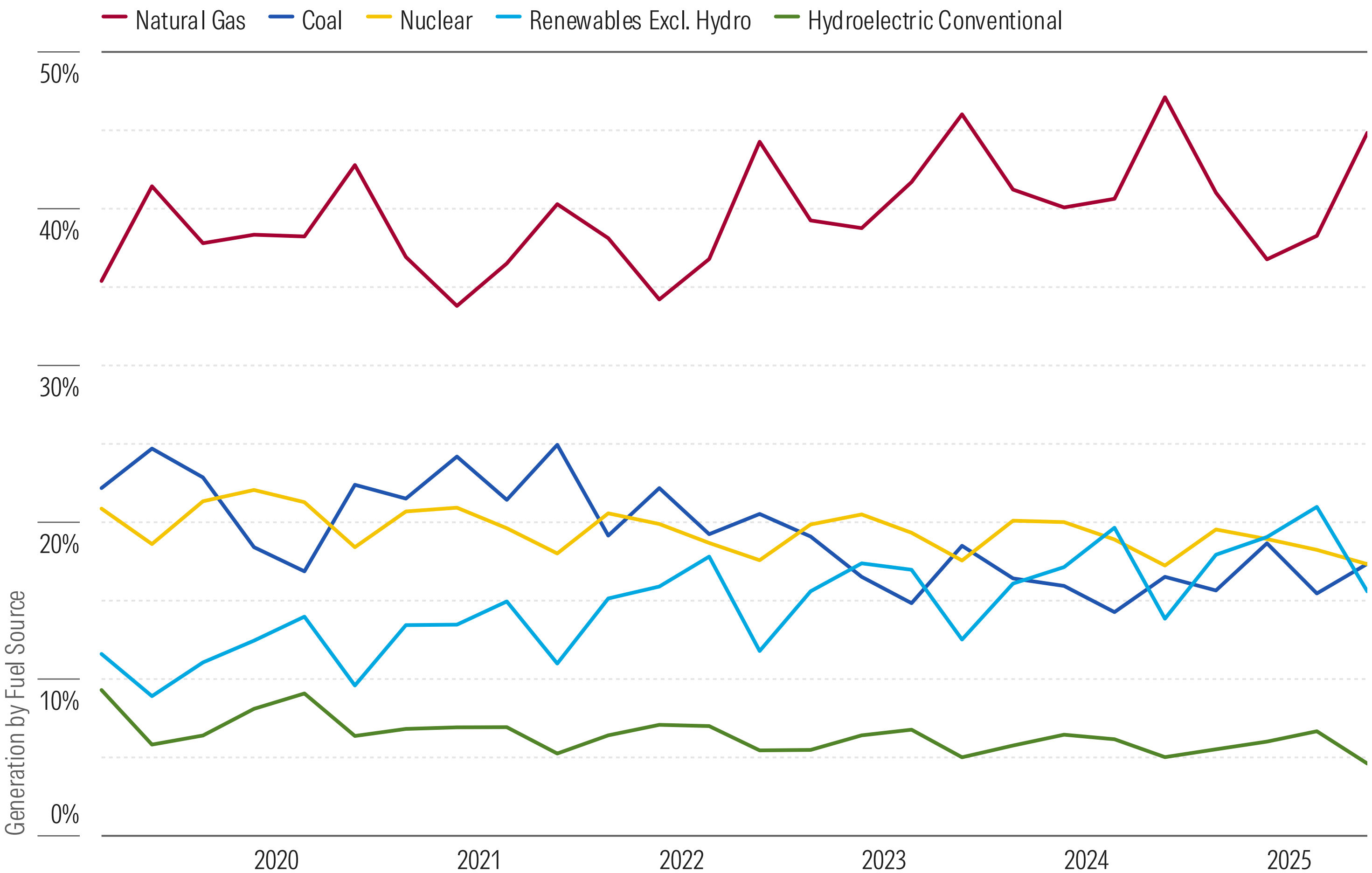
Source: PitchBook. Only includes companies with market capitalization above $4 billion. Data as of Dec. 18, 2025.

Utility Scale: Generation and Capacity

Renewables dominate new capacity additions.

Natural Gas Generation Jumps as Renewables See Seasonal Decline

Natural Gas and Nuclear Poised to Remain Integral in the Long Term as Renewable Penetration Steadies



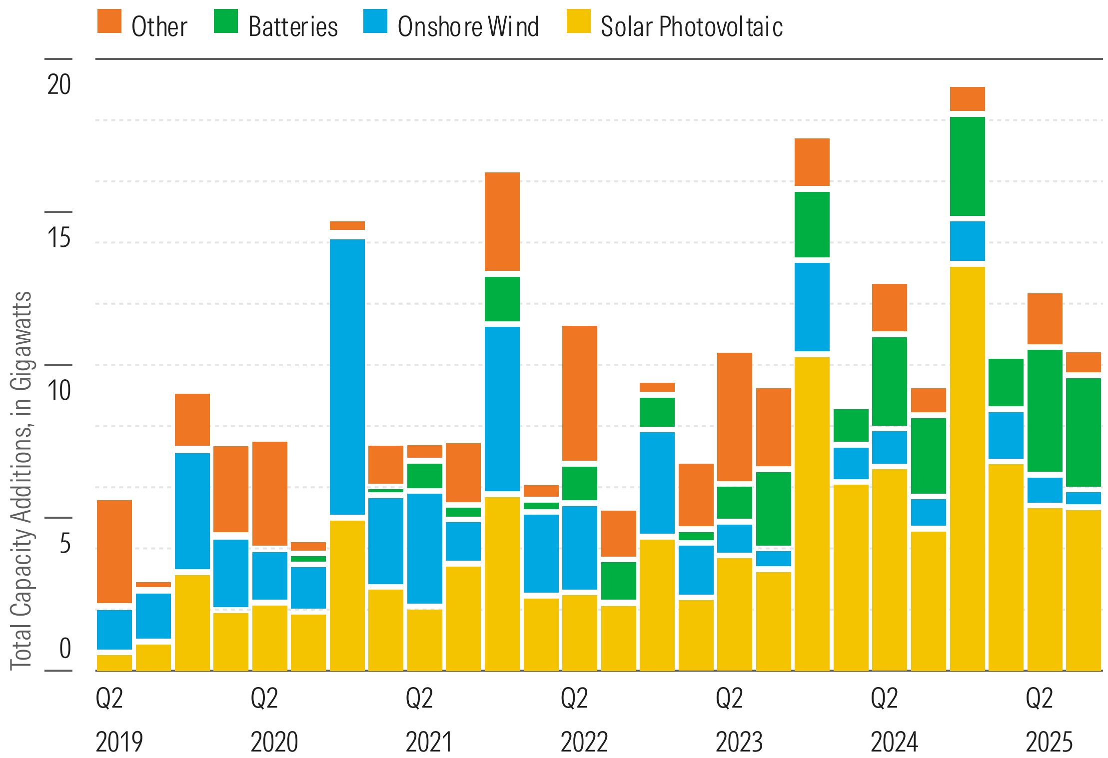
- Renewables, primarily wind and solar, constituted 16% of generation in the third quarter of 2025, up from 14% in the year-ago period.
- We believe both wind and solar market share will steadily rise over the next decade, driven by growth in solar deployments.
- While renewables will account for a rising percentage of generation, we still see meaningful roles for legacy fuels—such as natural gas and nuclear—to help meet rising electricity demand.
- Power-hungry data centers have revived interest in natural gas and nuclear capacity additions due to high power density. This has resulted in elevated market interest for exposed stocks.
- We believe the resurgence in natural gas and nuclear construction is real, but we see few opportunities in exposed stocks (GE Vernova, for example) given elevated valuations.

Source: EIA. Data as of Dec. 18, 2025.

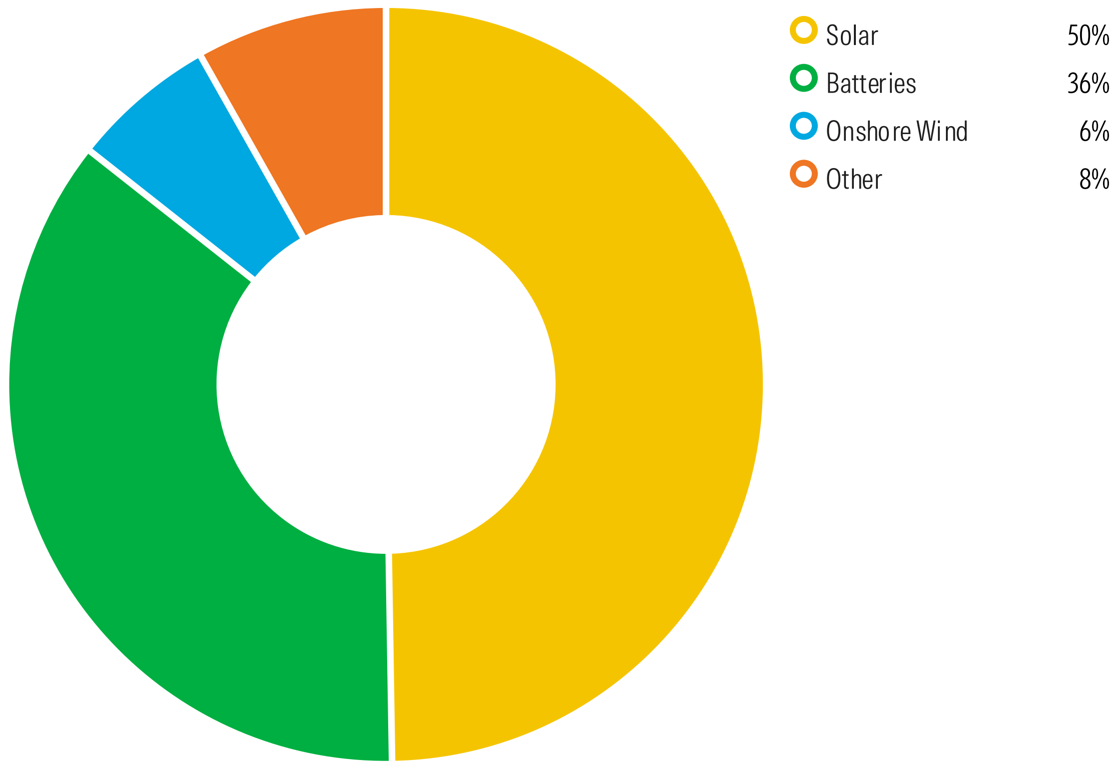
Solar and Batteries Continue to Dominate New Capacity Additions

In the third quarter of 2025, renewable sources of energy (solar, wind, and battery storage) accounted for over 90% of new generation capacity, continuing their dominance of new power sourcing. Renewables benefit from a zero-emission profile, cost-competitiveness, and current tax incentives. We expect renewables will still account for most near-term capacity additions, along with natural gas additions and select nuclear restarts to help meet rising electricity demand.

Solar Is the Largest Portion of New Capacity, Batteries Growing Quickly



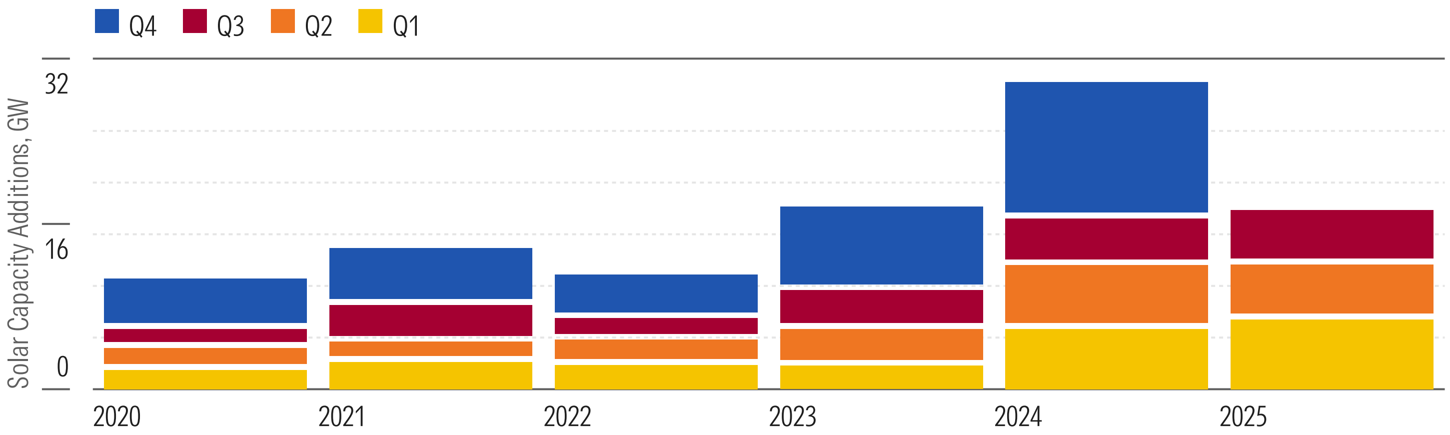
Solar and Batteries Represent the Vast Majority of New Capacity Additions



Source: EIA. Right chart is based on trailing 12-month data ending June 2025. Data as of Dec. 18, 2025.

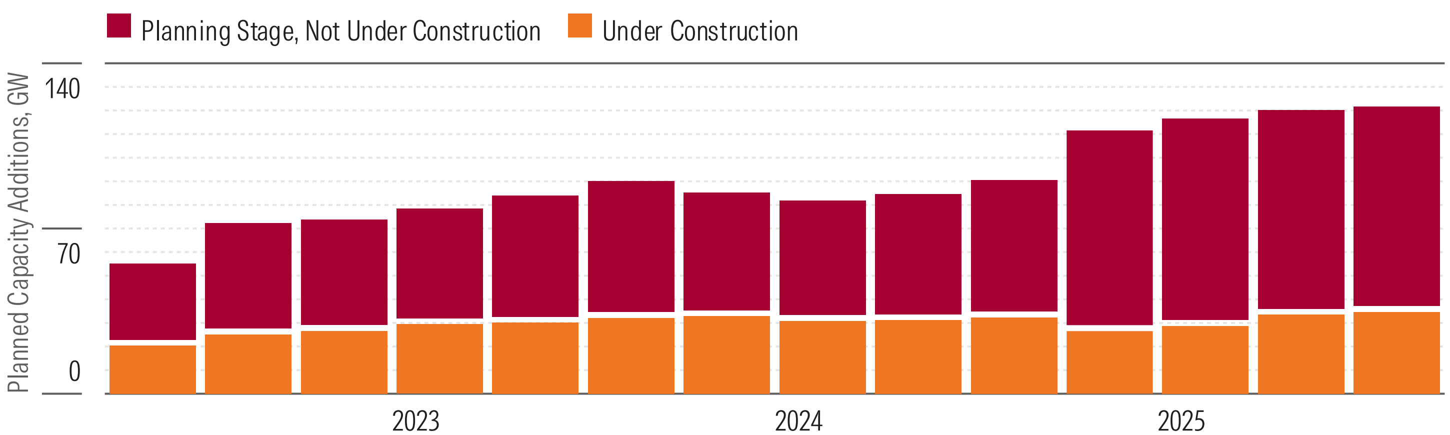
2025 Is Set to Be Another Record Year for Solar Capacity Installations

Solar Capacity Additions Continue to Rise in Line With Our Expectations



- The 5 gigawatts of solar capacity additions in the third quarter of 2025 represented an 11% increase compared with the same quarter last year.
- We expect the pace of growth to slow in the coming years as bottlenecks associated with permitting and interconnection constrain installations over the medium term.

Solar Projects Under Construction Plateau, While Planning-Stage Pipeline Remains Robust

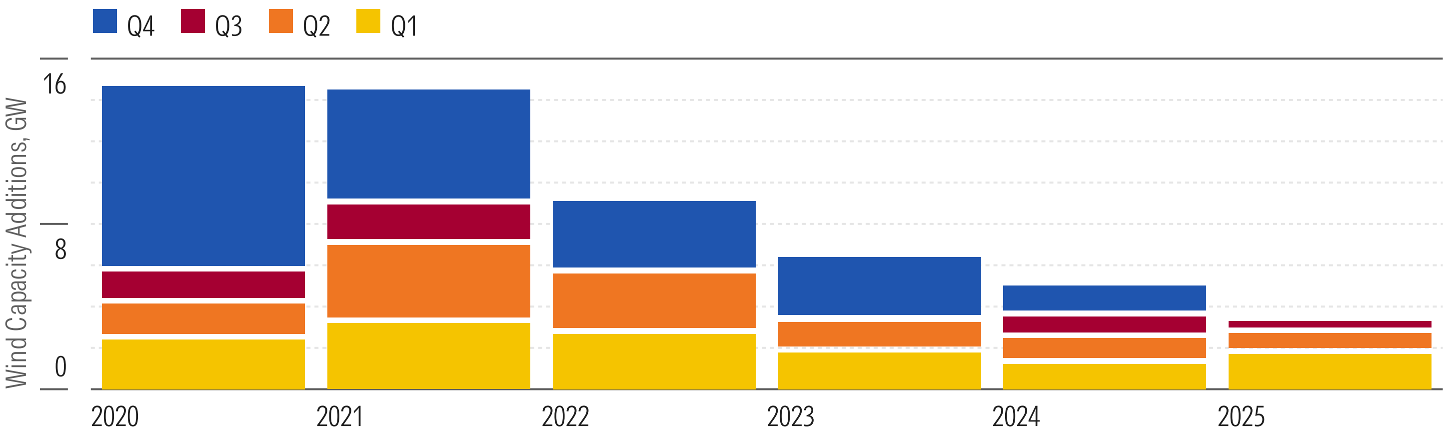


- Projects under construction increased 7% in the third quarter of 2025 from the same quarter last year. Early-stage projects in the planning stage increased by 50% as developers seek to qualify for federal tax credits.
- We are bullish on solar long-term as a technology, given continued technology advancements enabling cost declines, but this is balanced by a lack of moats in the intensely competitive industry. We have no-moat ratings across our solar coverage.

Source: EIA. Data as of Dec. 18, 2025.

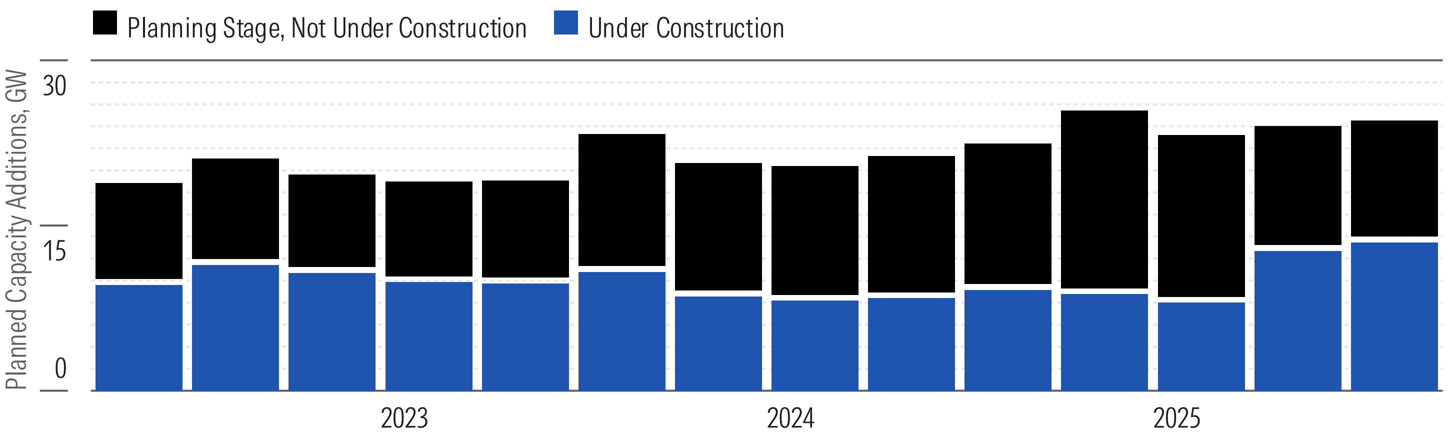
Onshore Wind Capacity Additions Remain Near Trough Levels

2025 Installations Expected to Remain on Par With 2024



- Third-quarter 2025 wind capacity additions of 0.6 GW were a 50% decrease from the third quarter of 2024. Based on current pipeline data, we expect full-year 2025 installations to broadly mirror 2024.
- As with solar, bottlenecks associated with permitting and interconnection partially constrain the pace of onshore wind capacity additions.

Wind Project Pipeline Points to Modest Uptick Over Medium Term

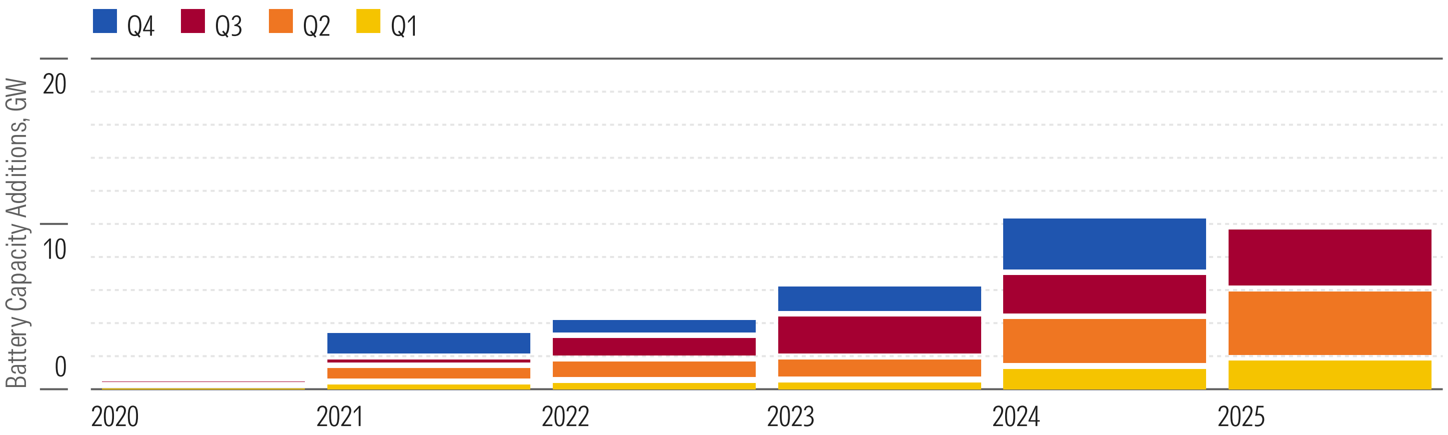


- Projects under construction increased 47% year on year in the third quarter of 2025, headlined by the massive 3.7 gigawatt Sunzia project; Quanta Services is serving as contractor there.
- Projects in the planning stage, however, decreased 17% from the previous year.

Source: EIA. Data as of Dec. 18, 2025.

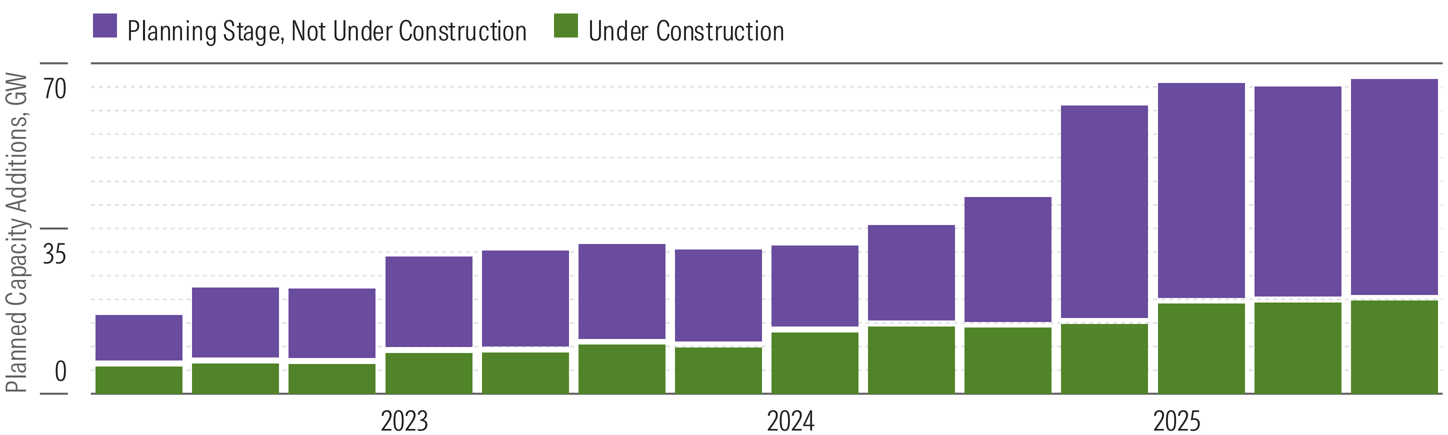
Battery Storage Remains Fastest-Growing Renewable Technology

2025 Installations Expected to Be Another Year of Strong Growth



- Third-quarter 2025 storage capacity additions of 4 GW were a 30% increase over the second quarter of 2025. Robust growth is expected to continue for 2025, with over 70% growth for the full year.
- Batteries serve as a natural complement to volatile renewable energy generation and have benefited from declining costs in recent periods.

Planned Battery Projects More Than Double Year on Year



- Projects under construction increased 41% compared with the third quarter of 2024. Projects in the planning stage rose by 70% year on year. California and Texas, states with high levels of renewable penetration, account for the largest areas of project activity.
- Investing directly in battery storage growth is difficult, given the few pure-play stocks. However, we see rising battery adoption as enabling higher renewable penetration in the long term, as batteries augment the generation profile to better match demand.

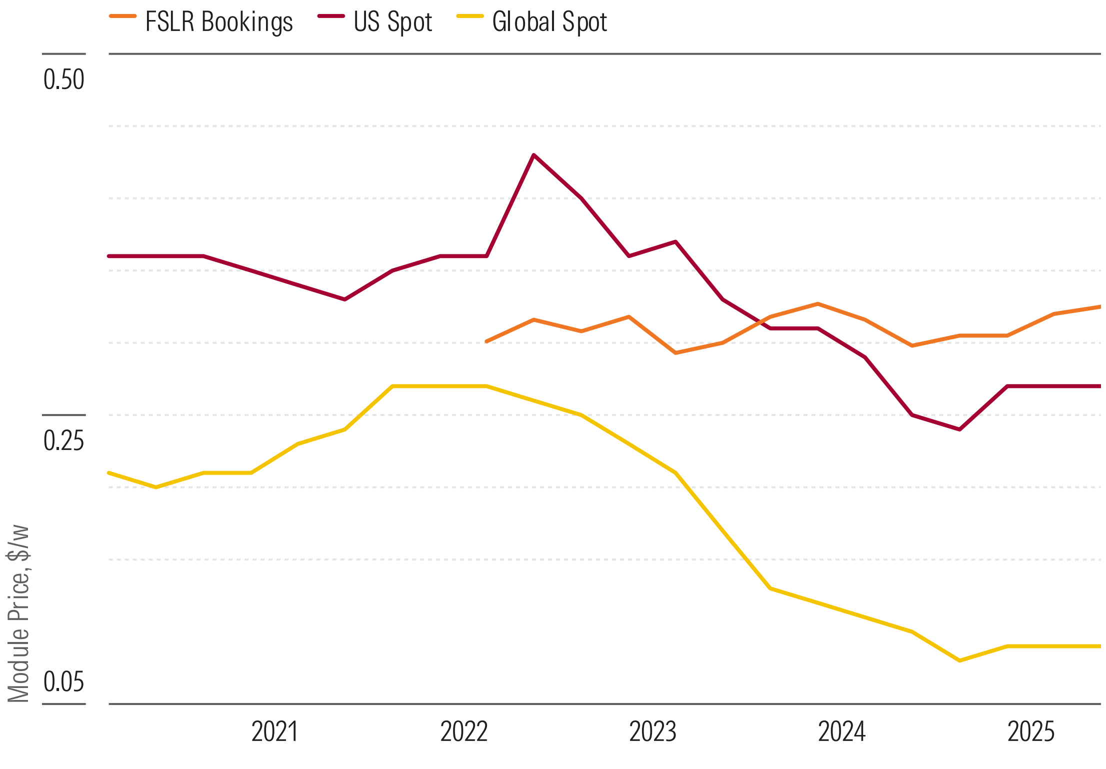
Source: EIA. Data as of Dec. 18, 2025.

Utility Scale: Pricing and Bookings

Inflationary pricing trends continue.

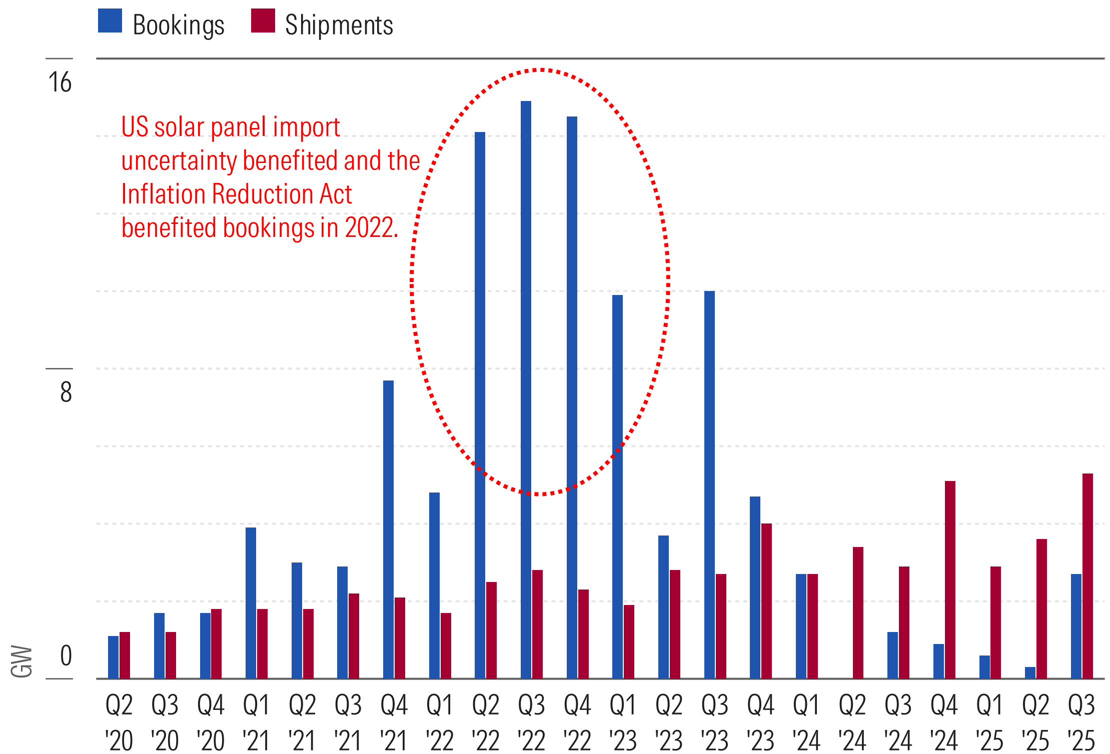
US Solar Module Prices Should Remain Elevated Following Recent Policy Clarity

US Module Prices Hold Steady Above the Rest of the World's Pricing



- US solar module pricing is decoupled from elsewhere because of trade policies.
- US "foreign entity of concern (FEOC)" restrictions are expected to reduce available US module supply, supporting constructive pricing for First Solar bookings.

We Expect First Solar's Bookings to Rebound in Quarters Ahead



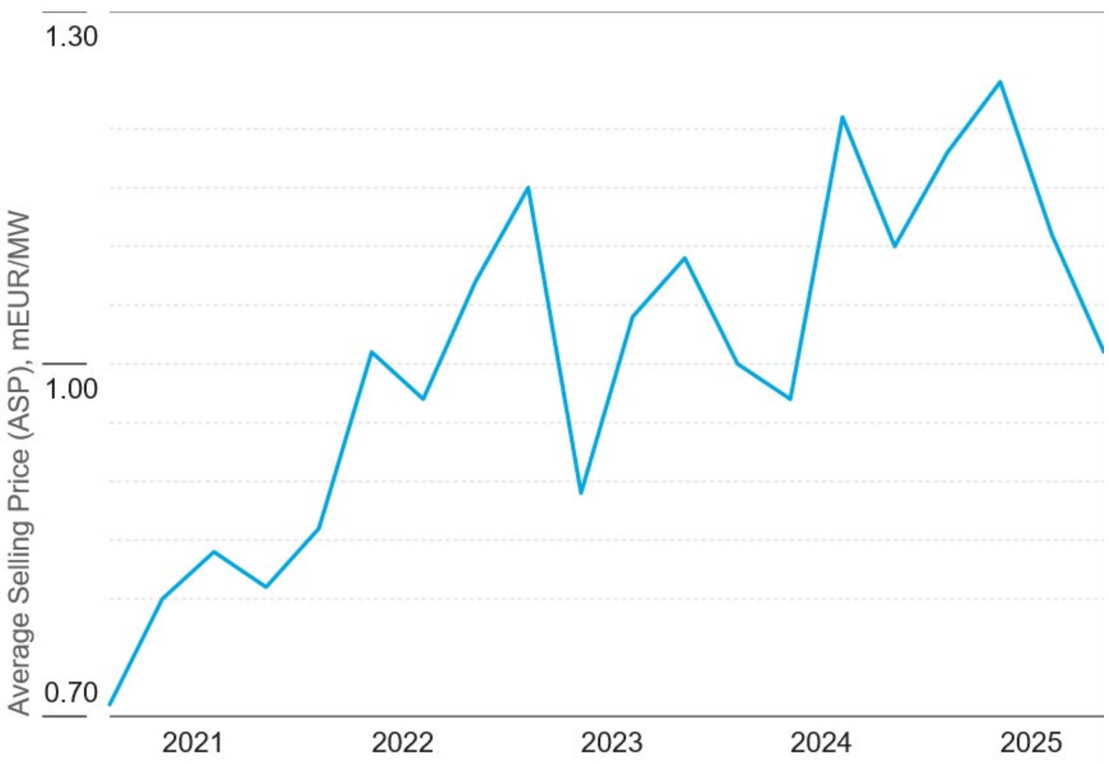
- First Solar saw a gross bookings rise in the third quarter as recent policy clarity, along with restrictions on module supply (FEOC), drove increased customer interest.

Wind Turbine Pricing Remains Healthy Despite Tepid US Demand

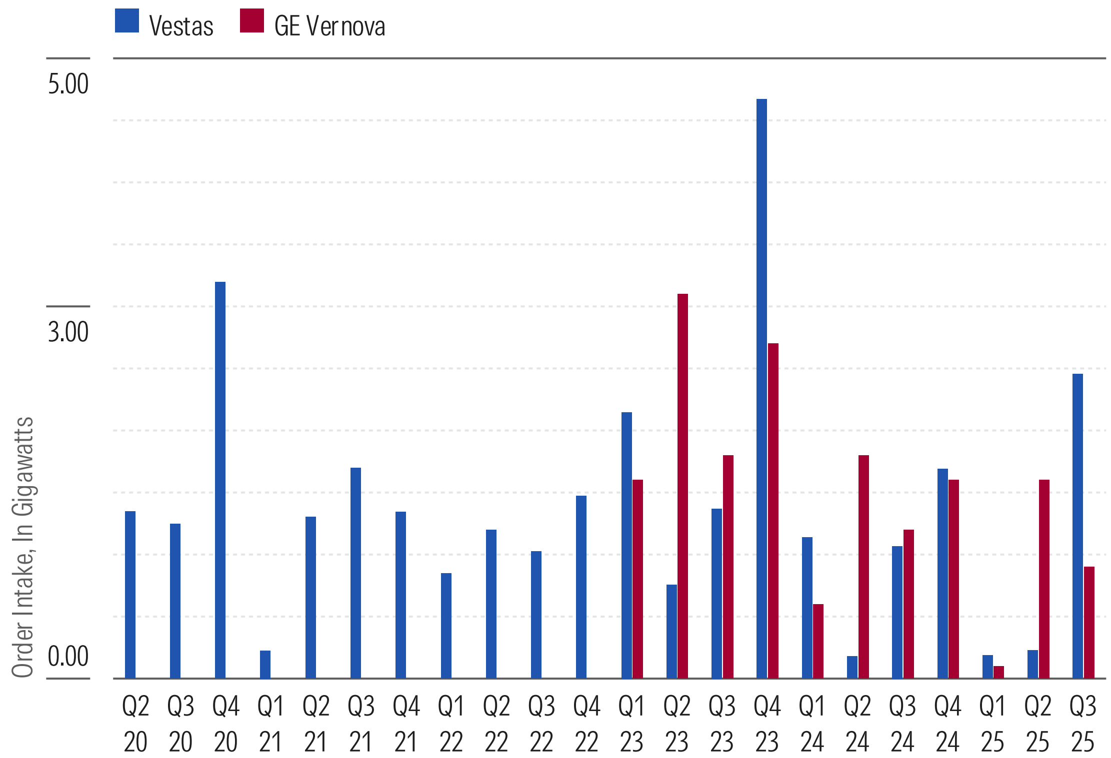
Wind turbine prices dipped in the third quarter, driven by a higher share of supply-only orders rather than increased price competition. We expect the trend of higher prices since covid to stick, barring raw material price deflation.

GE Vernova and Vestas, the two largest players in US onshore wind, have generally seen weak orders year to date. GE Vernova expects onshore wind revenue to decline 10%-15% in 2026 as the US demand environment remains relatively weak.

Wind Turbine Prices See a Distinct Upward Trend Since Covid

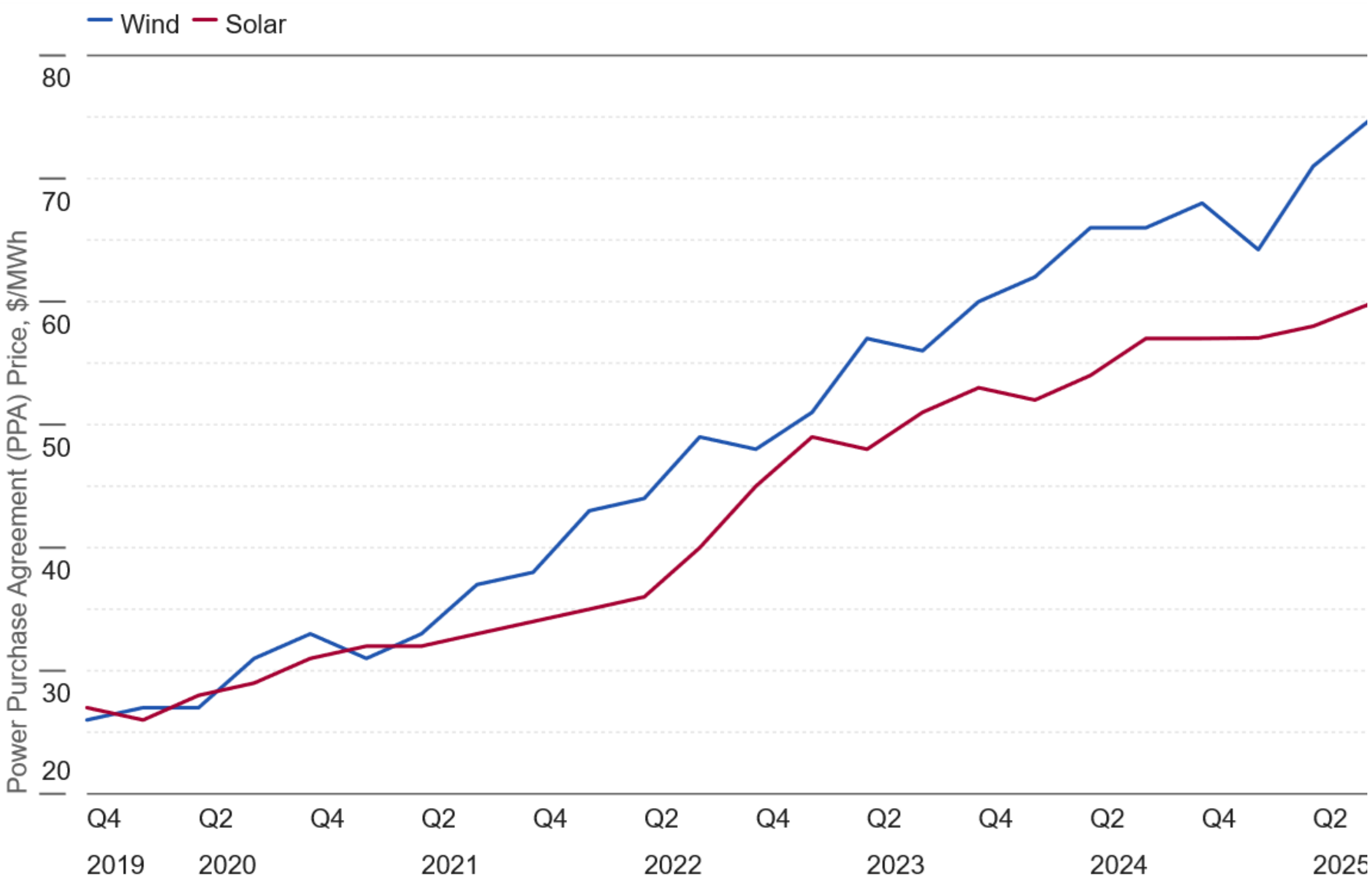


Order Rebound for GE Vernova Remains Elusive



Offtake Pricing Remains Elevated as Developers Pass Through Inflation

Wind and Solar Offtake Pricing Has Risen Since Covid Because of Higher Equipment Costs and Interest Rates



- Wind and solar projects are typically built with power purchase agreements—long-term contracts to sell anticipated power production.
- PPA prices continue to rise through 2025 as developers seek to pass through elevated equipment costs and stubbornly high interest rates.
- Higher offtake prices compensate for higher input costs. This spread helps ensure that a developer's returns on new projects remain intact. We maintain a positive outlook on the renewable developer portion of the value chain, given more attractive relative valuations, including for Brookfield Renewable.
- We expect offtake pricing to ease as equipment costs resume their long-term deflationary trend, particularly for solar. The prospect of lower interest rates could serve as an additional tailwind for offtake pricing.

Source: LevelTen. Data as of Dec. 18, 2025.

Distributed Generation: Installations

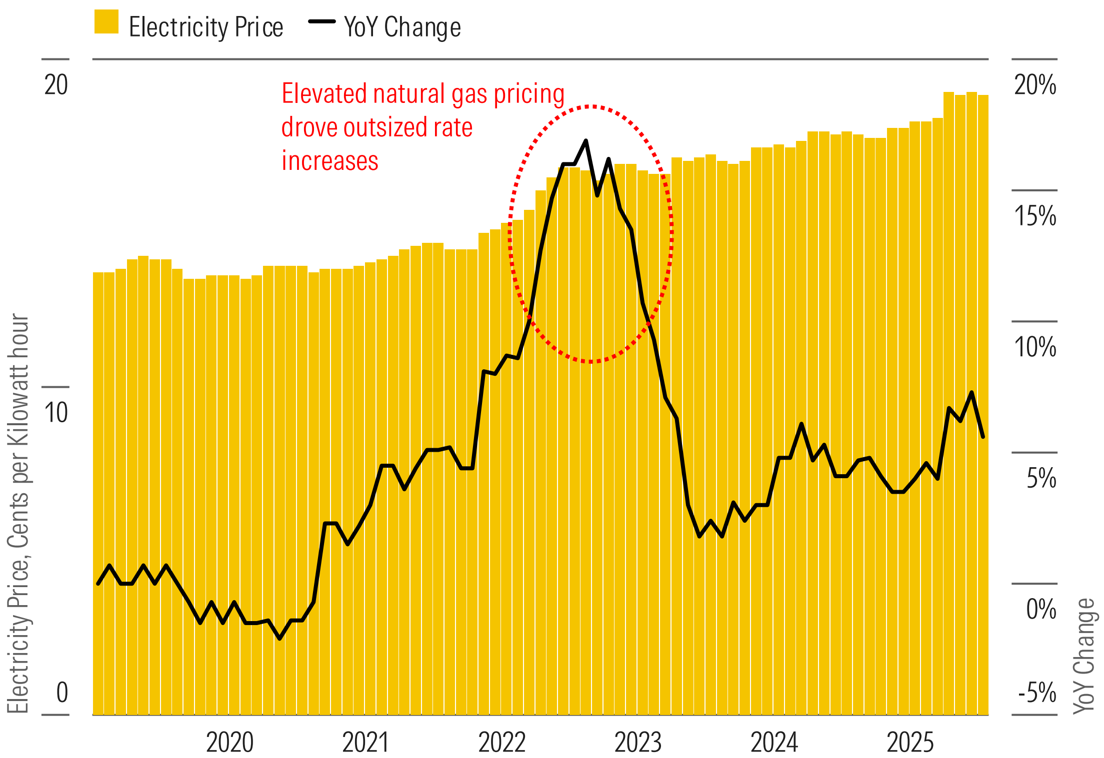
US policy changes to weigh on demand in 2026.

Rooftop Solar Economics: Utility Rate Inflation Represents a Long-Term Tailwind

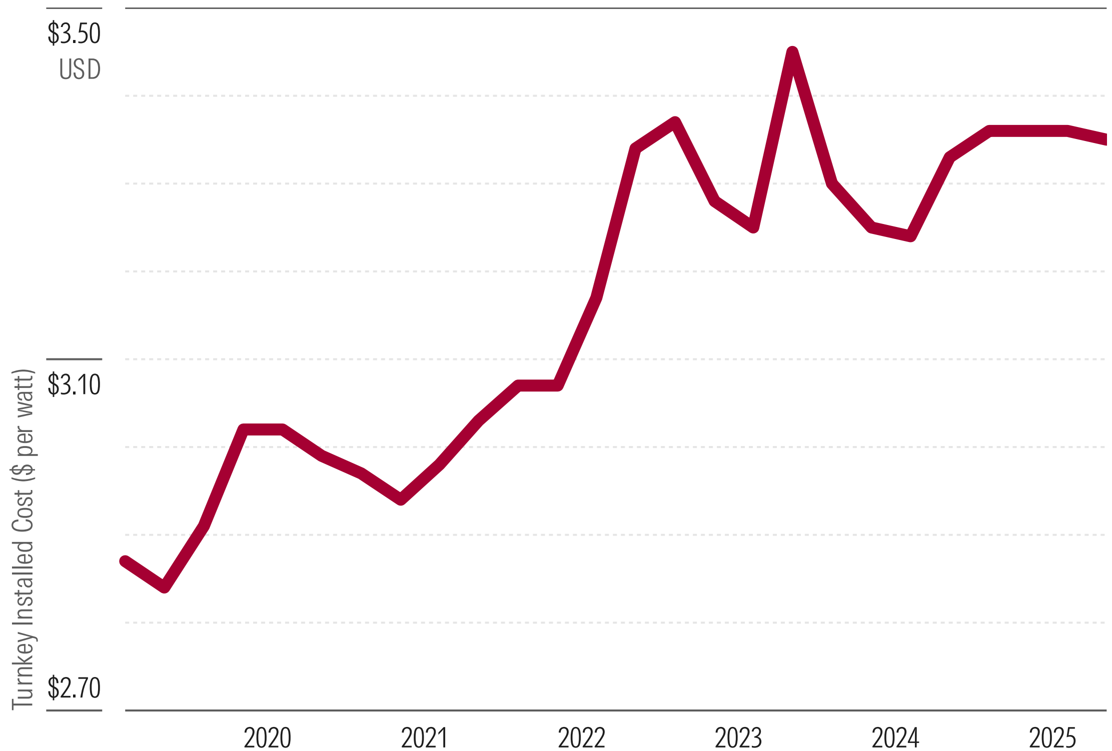
Utility rates rose 6% year on year in the third quarter of 2025. We expect rising utility capital expenditures to drive continued long-term inflation in electricity rates. Increasing utility rates serve as a tailwind for US rooftop solar economics.

Installed costs for rooftop solar fell 3% year-on-year due to declining hardware costs. Longer term, we expect modest deflation in costs due to falling hardware costs along with lower customer acquisition costs.

Electric Utility Rates Continue to March Higher



Rooftop Solar Costs Remain Elevated Despite Tepid Market Demand

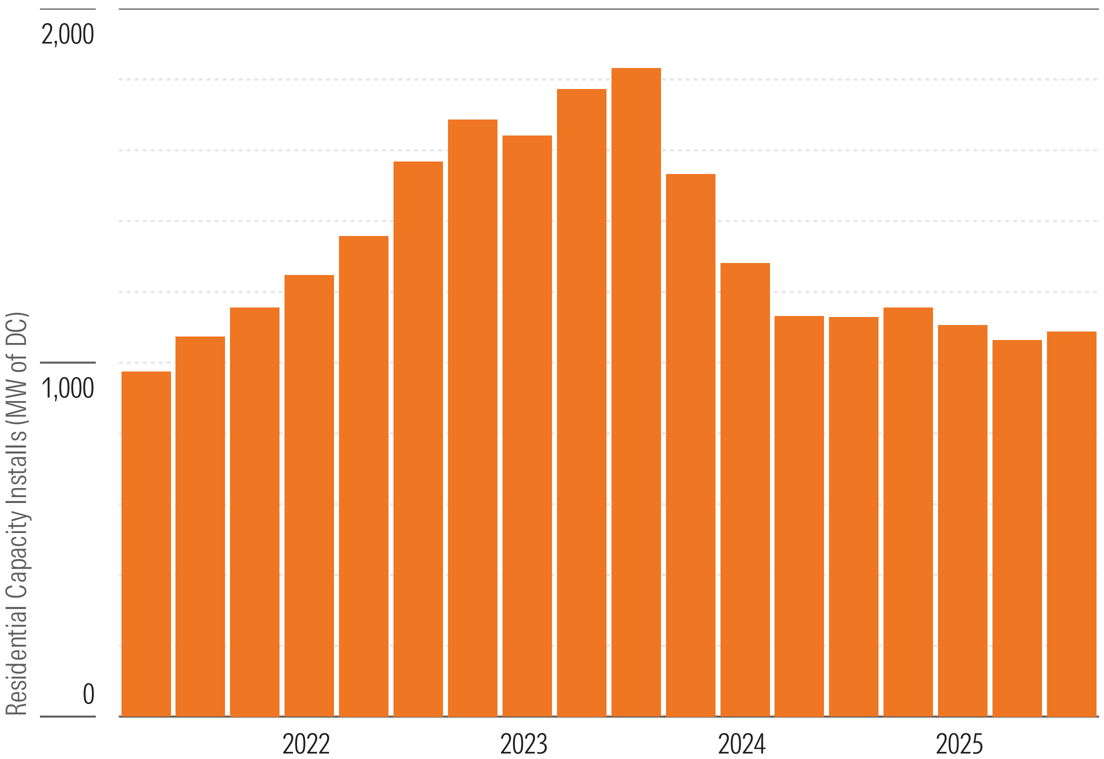


Rooftop Solar Installations: Demand Likely to Remain Weak in 2026 Given Loss of Loan Tax Credit

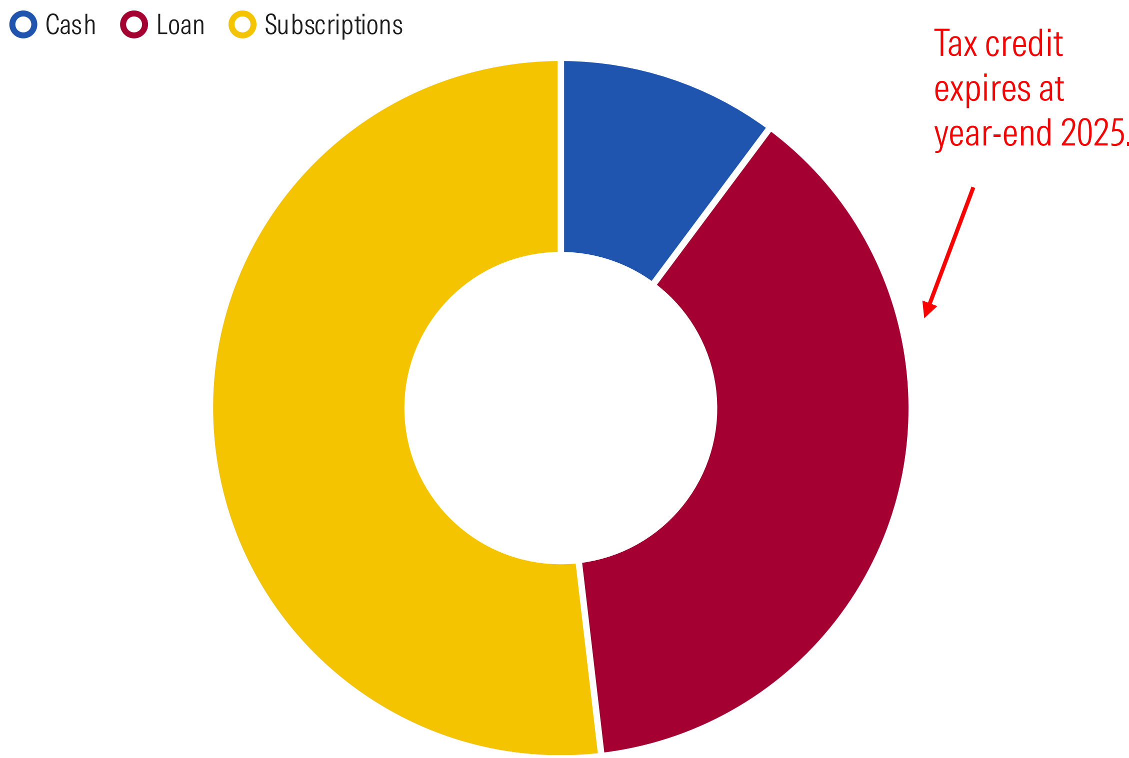
Rooftop solar demand has remained stable in recent quarters as the market adjusted to higher interest rates. We expect further downside to installs in 2026, likely in the range of 20% to 30%, as the market adjusts to the loss of the homeowner tax credit.

We expect a shift in system financing toward subscriptions in 2026, as the homeowner (loan) tax credit expires at year-end 2025 (the subscription credit remains). This should benefit subscription-oriented firms, including Sunrun and SolarEdge.

Rooftop Solar Installations Stabilize, but Further Declines Expected in 2026



Solar Loans Make Up About 40% of Rooftop Solar Installations



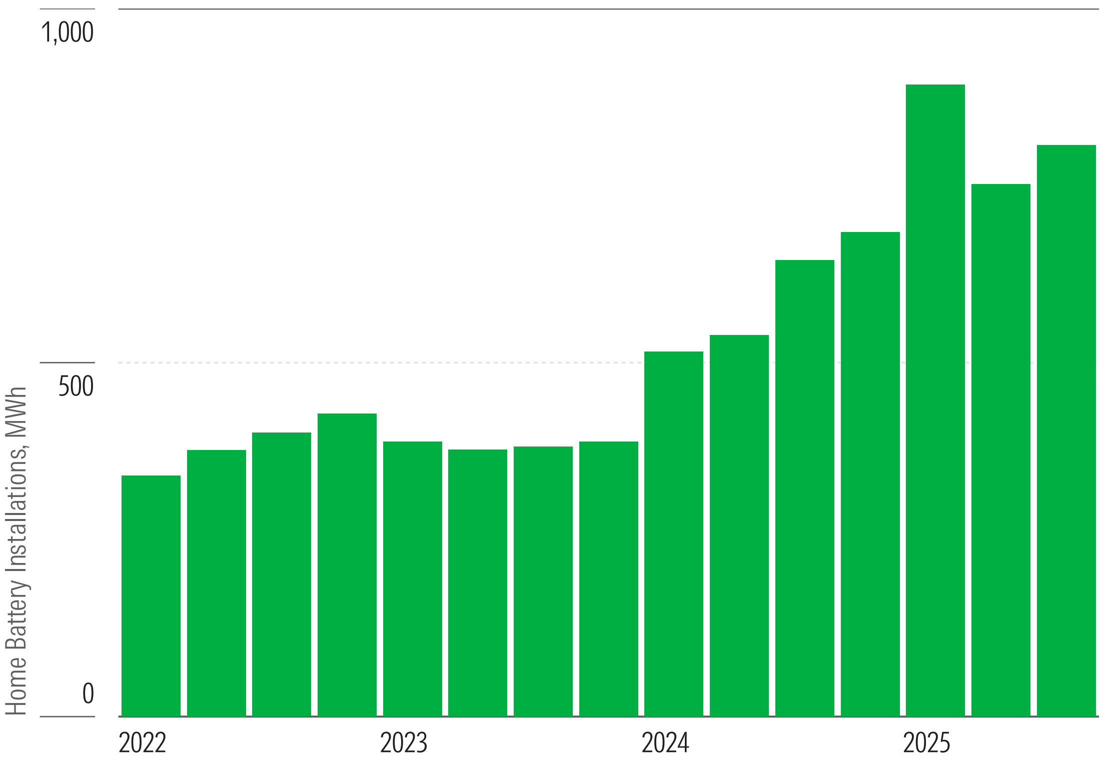
Source: Solar Energy Industries Association, Sunrun. Right chart is based on Q1 2025 data. Data as of Dec. 18, 2025.

California Continues to Drive US Residential Battery Installations Higher

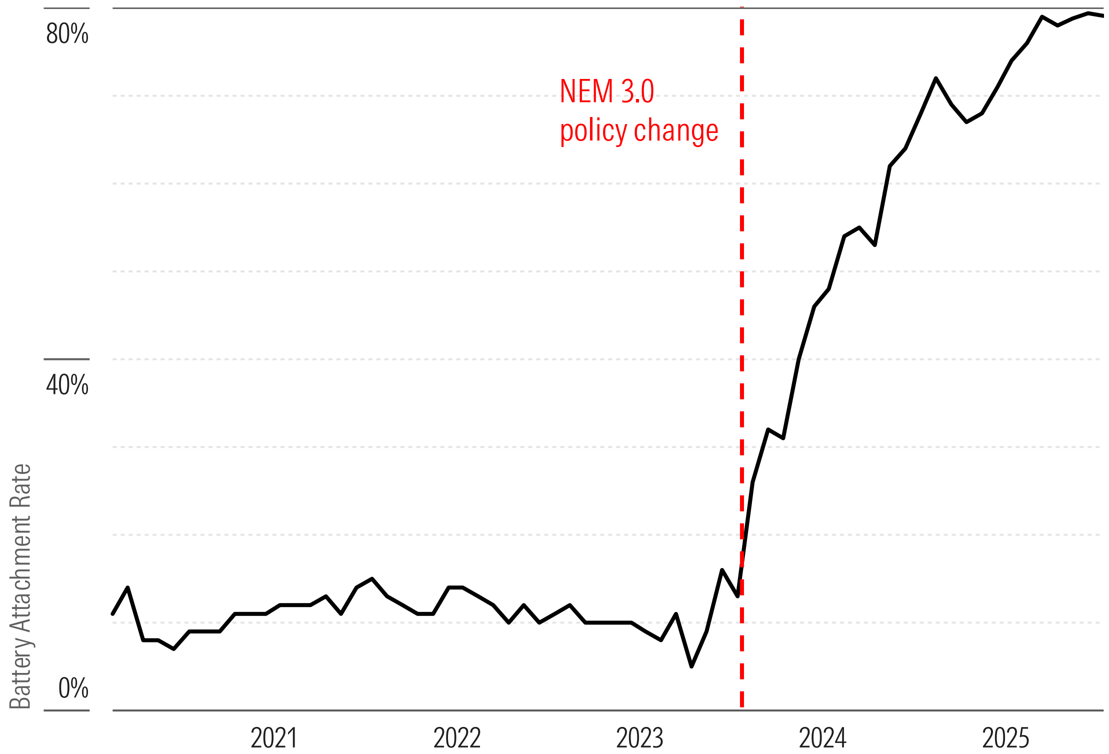
Home battery installations rose 27% year on year in the third quarter of 2025 as California and Puerto Rico continue to drive adoption. We see customers primarily adopting home batteries for economic and resiliency (backup power) reasons.

California battery attachment rates reached 78% in June 2025, up from single-digit rates two years ago, due to net metering (NEM 3.0) policy changes. We expect attachment rates in other states to rise as net metering policies are also revised.

US Home Battery Installations Are on Pace to Set a Record in 2025



California Battery Attachment Rates Have Risen Sharply Following NEM 3.0



Source: Wood Mackenzie, California Distributed Generation Statistics, Morningstar. Based on SCE service territory. Data as of Dec. 18, 2025.

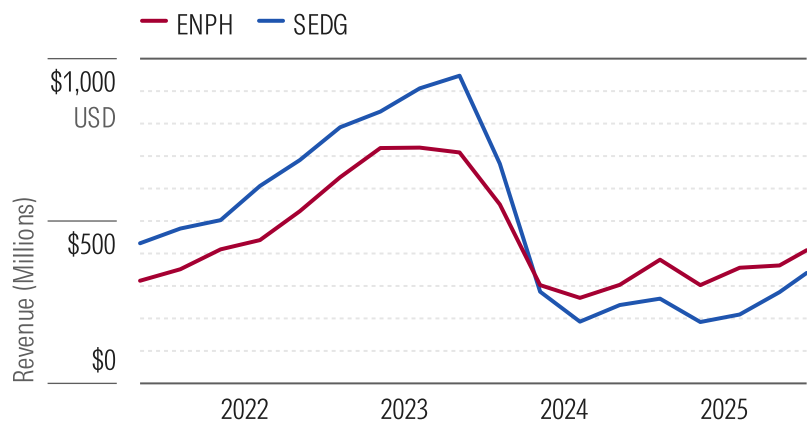
Distributed Generation: Competition

SolarEdge results begin to rebound.

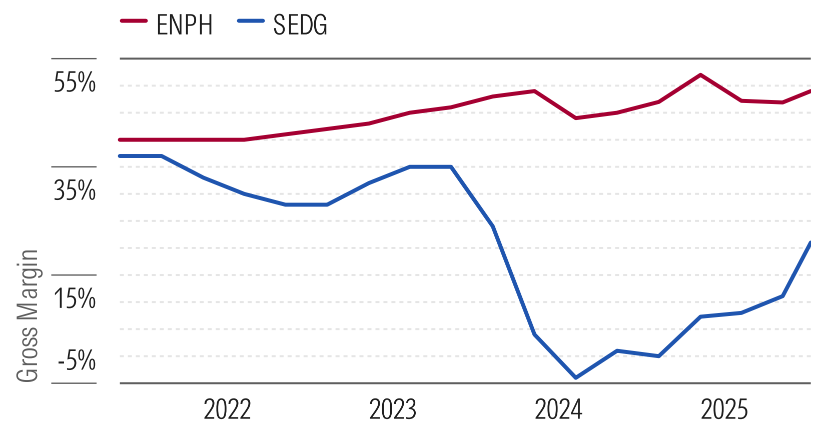
SolarEdge Results Have Begun to Rebound as Channel Destocking Concludes

- Enphase and SolarEdge reported steep revenue declines as they sought to correct excess channel inventories following a slowdown in rooftop solar demand.
- Enphase's margins outperformed SolarEdge's during the downturn, due to its higher US mix and lower operating leverage. However, SolarEdge has recently shown improved performance as revenue rebounded.
- We maintain our no-moat ratings for SolarEdge and Enphase. The downturn has largely justified our thinking, particularly in the competitive European market. While we view the US market as relatively more moaty given the absence of low-cost Chinese firms, the increased presence of Tesla has altered the prior SolarEdge-Enphase duopoly.

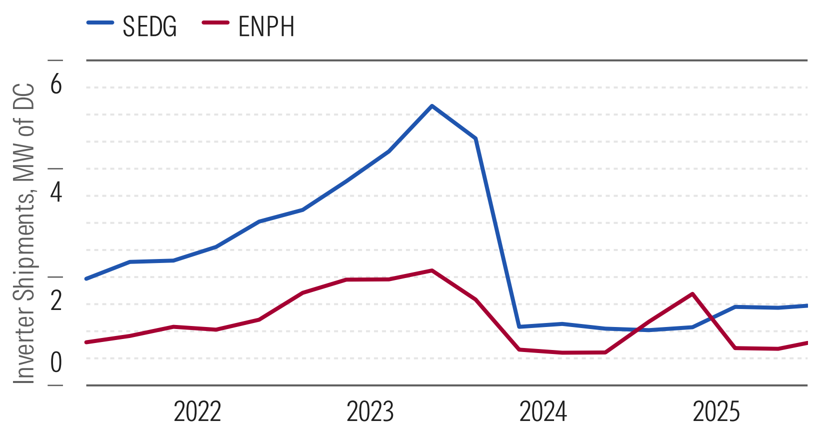
Channel Inventory Destocking Has Largely Concluded



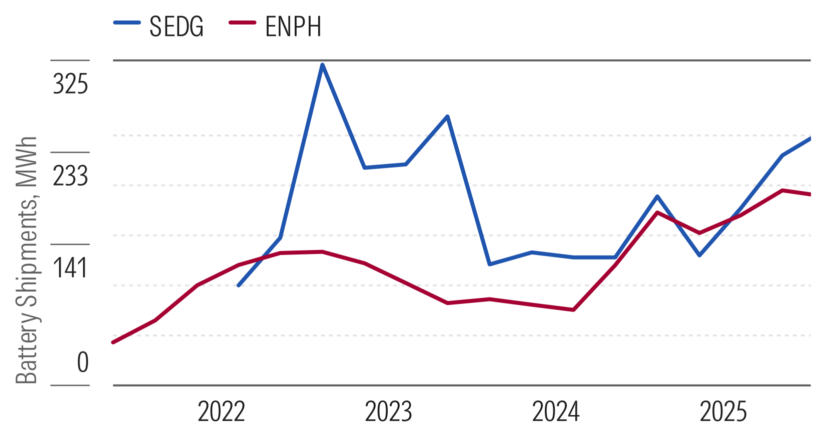
Enphase Margins Have Materially Outperformed SolarEdge



Channel Inventory Destocking Drives Shipment Declines



Battery Shipments Continue to Rise

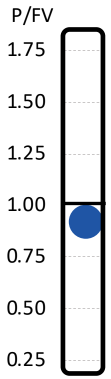


Sources: Company filings. Data as of Dec. 18, 2025.

Top Picks and Coverage

Brookfield Renewable Has the Most Attractive Valuation in Our Clean Energy Coverage

Brookfield Renewable Partners (NYS:BEP)



Market Cap	Moat Rating	Last Close	Fair Value Est.	Rating
8B USD	None	26.67	29.00	★★★

Brookfield Renewable holds a well-diversified global portfolio of clean energy technologies assets. The company targets 12%-15% returns (best-in-class) via a combination of organic growth and mergers and acquisitions. Acquisitions are central to Brookfield's strategy in which it invests alongside Brookfield Asset Management's private equity funds. We think the current market volatility provides opportunities for Brookfield to find attractive deals, as evidenced by its history (Exemplary Capital Allocation Rating).

Source: PitchBook. Data as of Dec. 18, 2025.

Valuations Vary Across Our Coverage List

Company Name	Ticker	Market Cap ($ Millions)	Moat Rating	Capital Allocation	Last Price	Fair Value Estimate	Price to Fair Value	Star Rating
Solar:								
First Solar	FSLR	27,259	None	Standard	$ 261.79	$ 217.00	1.21	★★★
Enphase Energy	ENPH	4,136	None	Standard	32.96	34.00	0.97	★★★
Nextpower.	NXT	13,064	None	Standard	87.39	52.00	1.68	★★
Sunrun	RUN	3,963	None	Standard	18.14	14.00	1.30	★★
SolarEdge Technologies	SEDG	1,729	None	Poor	28.46	36.00	0.79	★★★
Shoals Technologies Group	SHLS	1,409	None	Standard	8.64	6.50	1.33	★★
Power Generation:								
GE Vernova	GEV	166,642	Narrow	Standard	$ 639.43	$ 540.00	1.18	★★
Renewable Developers:								
Brookfield Renewable Partners	BEP	17,261	None	Exemplary	$ 26.67	$ 29.00	0.92	★★★
Brookfield Renewable Corp	BEPC	6,695	None	Exemplary	37.62	33.00	1.14	★★
Engineering & Construction:								
Quanta Services	PWR	61,771	None	Exemplary	$ 421.31	$ 290.00	1.45	★★
MasTec	MTZ	16,512	None	Standard	213.96	172.00	1.24	★★

Source: PitchBook. Data as of Dec. 18, 2025.

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