Sustainable Energy in America 2026 Factbook

Tracking Market & Policy Trends

BloombergNEF

The Business Council for Sustainable Energy®

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About the Factbook, and updates to this edition

What is it?

- This Factbook **aims to augment existing public sources** of information on US energy.
- In most cases, it **employs BloombergNEF data**. Additional data from the US Energy Information Administration (EIA), the Environmental Protection Agency (EPA), the Federal Energy Regulatory Commission (FERC), the American Council for an Energy-Efficient Economy (ACEEE), Lawrence Berkeley National Laboratory and other sources are also utilized where necessary.
- This report **focuses on renewables, efficiency, natural gas, distributed power and storage, and sustainable transportation**. It also **fills important data gaps** in certain areas, such as clean energy investment flows and distributed energy.
- Updated yearly, the Factbook **draws on the latest information on new energy technology costs**. Wherever possible, it **contains data through the end of 2025**.
- This is the 14th edition of the Factbook, which was first published in January 2013. It **has been graciously underwritten by the Business Council for Sustainable Energy** with the help of supporting sponsors.

What's new?

- This year's report contains new data on data center-driven load growth, carbon removal demand, electric vehicle charging and grid-enhancing technologies.

About the Factbook: Sponsorship

The Business Council for Sustainable Energy (BCSE) is a coalition of companies and trade associations that deploy a broad portfolio of energy and decarbonization solutions, with a sector focus on energy efficiency, natural gas, renewable energy, and more. The coalition aims to build a competitive and thriving U.S. economy, powered by clean and efficient energy resources. Established in 1992, BCSE members include investor-owned utilities, public power, independent power producers, project developers, technology providers, equipment manufacturers, environmental and energy market service companies, and more.

The *Sustainable Energy in America Factbook* is commissioned by BCSE and supported by the generous contributions of the following sponsors: Amazon, American Clean Power Association, American Gas Association, Clean Energy Buyers Association, Copper Development Association, CRES Forum, Gevo, Johnson Controls, JPMorgan Chase & Co., National Grid, National Hydropower Association, Net Power, Polyisocyanurate Insulation Manufacturers Association, Reworld, Sacramento Municipal Utility District, Schneider Electric, Sempra, Solar Energy Industries Association, Trane Technologies, and Washington Gas.

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Executive summary (1 of 6)

Bolstered by rising demand, buffeted by policy changes, sustainable energy held its ground in 2025

It was a momentous 2025 for US sustainable energy as electricity demand began to surge, power prices rose, affordability concerns grew and the policy environment deteriorated for many technologies. On the one hand, an unprecedented data center buildout expanded opportunities for virtually all power technologies. On the other, moves by the administration and Congress to pause or eliminate key federal supports for a number of technologies were highly disruptive. In the end, despite these challenges, sustainable energy technologies not only held their ground in 2025 but notched key, new achievements.

As load growth materialized, system challenges emerged

Electricity demand rises

Retail demand for electricity climbed 2% year-on-year in 2025 and is up 8% over the past decade. Recent growth follows more than a decade of near-flat electricity demand in the 2010s. The change has created urgency for action by policymakers and has prompted many new policy announcements.

Energy productivity increases

While total primary energy consumption ticked up 1.2% in 2025, GDP growth outpaced it at 2%, implying an increase in overall energy productivity. This supports the view that economic growth is no longer tightly coupled with energy use. Over the past decade, the US economy has expanded by 27%, while energy consumption rose by just 1.8%.

Data centers for AI become central to power planning

Power demand from data centers grew 18% year-on-year and has risen more than 150% in the past five years. As demand for AI services surges, data centers are poised to be the dominant force behind rising power demand. Unsurprisingly, they came under greater scrutiny in 2025 for their possible associated impacts on grid reliability and electricity costs. While 23GW of IT capacity, or computing load, is now online in the US, an additional 48GW is under construction or committed with land, power and permits confirmed. This new load is expected primarily in PJM, Texas and the Southeast.

Regional grid operators, states and the federal government are grappling with the strains on the system, placing more emphasis on allocating costs and removing barriers to fast-track new sources of power generation to accommodate these power-hungry assets.

Executive summary (2 of 6)

Electricity prices see renewed political focus

Amid data center load growth and a broader political focus on affordability, electricity costs are increasingly top of mind for policymakers.

Wholesale power prices increased sharply in the Northeast and Mid-Atlantic, reflecting higher gas prices, pressure on capacity markets and grid constraints. Prices rose 62% in New York State, 60% in New England, and 45% in PJM, the power market stretching from the Midwest through the Mid-Atlantic and encompassing 13 states and the District of Columbia. High levels of solar and storage penetration smoothed peak-period prices in California, where wholesale prices declined 5%.

Despite growing attention, retail price increases were more gradual on average at 2.3% year-on-year. In PJM, prices rose 6%, but some states within that market saw larger swings. In New Jersey, for instance, prices rose 12%, reflecting local congestion and high exposure to regional natural gas prices, driven in part by a lack of gas infrastructure..

Ratepayers are increasingly feeling the pinch. Over the past decade, US residential electricity prices rose 32%. Compared to other markets, only Japan and Germany report higher power costs for household use. In 2025 gubernatorial elections in Virginia and New Jersey, candidates placed spiking energy costs at the top of their agendas, proposing plans to make data centers pay for new generation and grid upgrades. As a share of personal consumption, however, electricity remained below 1.5% of consumer spend.

Demand, higher costs drove higher grid investment

With the push to add new generation came greater focus on the US power grid and higher investment. Specifically, capital deployed to support expansion and reinforcement of the grid rose to a record $115 billion in 2025, up from $105 billion the year prior. This higher investment also reflected higher costs. In particular, shortages of key equipment such as transformers helped inflate the total investment figure.

Faster deployment timelines are critical to meeting rising demand while limiting ratepayer costs

Speed to bring new generating capacity online is paramount as many regional grids lack abundant spare capacity. Distributed solar, storage and on-site natural gas generation have typically been among the fastest to deploy. Since 2018, solar has consistently posted some of the shortest lead times for utility-scale projects, averaging 14–24 months across most US regions.

Companies, investors and consumers invested more in sustainable energy sectors

Investment in sustainable energy sectors rose in 2025. Energy transition investment as defined by BloombergNEF, which includes electrified transport, de-carbonization of industrial processes, and grids, grew 3.5% year-on-year to a record $378 billion. Growth was driven by grids investment, which rose 10%, largely due to rising electricity demand and integration of higher renewables. More funds flowed to EVs and EV charging year-on-year. Investment into clean energy (inclusive of renewables and batteries) remained flat as companies and investors spent the first half of the year awaiting clarity on tax incentives and tariffs. Investment surged in the second half as consumers and businesses rushed to take advantage of federal tax credits before they expired.

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In a busy year for build, solar and storage dominated new utility-scale electricity capacity additions

The US saw the highest annual capacity additions in more than two decades, with 54 gigawatts (GW) of new utility-scale generation and storage capacity commissioned in 2025. As in recent years, clean technologies made up the bulk of new capacity.

Renewables accounted for 61% of new capacity at 33GW. Utility-scale solar specifically led with 27GW of alternating current capacity commissioned, while wind held steady at about 6GW. Including battery storage, zero-emission sources reached a new peak of 48GW, or 90% of total additions. Utility-scale storage stood out with a record 15GW added, reflecting declining battery costs and storage's ability to provide greater system flexibility and support higher renewable penetration on the grid.

From a record-low in new builds in 2024 to 5GW in 2025, natural gas capacity additions doubled year-on-year. Demand remains high, but additions were lower than average levels over the past decade due to turbine supply constraints and project economics.

US power generation hit a 20-year high with natural gas and zero-carbon sources accounting for the largest shares of output

Like capacity build, US power generation hit a 20-year high in 2025, growing 3% year-on-year to reach 4,514 terawatt hours (TWh). Natural gas was the largest single contributor at 40% of total generation. Taken together, zero-carbon sources – renewables and nuclear power – provided 43% of generation. Rising top-line electricity demand appeared to bolster all power-generating technologies; coal's share of generation rebounded year-on-year to account for 16% of generation.

Natural gas supply, demand, and exports grow

Natural gas demand grew 5.1% in 2025 to 104.8 Bcf/d, driven by growing residential and commercial building use and exports. Natural gas remains the dominant heat source for most industries in the US due to prolific, low-cost domestic production.

Utility expenditure on natural gas infrastructure was $39.7 billion in 2024, the last year of complete data. This is down significantly from 2023, but was the second highest year of expenditures over the past decade. As energy resilience is an increasing concern, underground storage can meet up to 50% of daily natural gas demand.

A historic high for corporate clean energy procurement

Corporate power purchase agreements for zero-carbon electricity reached 29.5GW in 2025, the highest annual total on record, narrowly surpassing the 29.1GW signed in 2024. Last year was marked by a growing share of nuclear, hydropower, geothermal and carbon capture and storage contracts as tech giants doubled down on clean, baseload power for AI data centers. Among the corporate buyers, Meta led the way, with over 10GW of deals signed, followed by Amazon at 6.8GW.

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Electrified transport had another record year as incentives phased out

EV sales reached a record 1.6 million vehicles in 2025, 3.7% higher than 2024, reflecting consumer uptake ahead of the phaseout of federal tax credits in October. Cars with plugs – both pure EVs and plug-in hybrid electrics (PHEVs) – accounted for about one in 10 total new passenger vehicles sold. The rate of growth, however, has continued to slow. From 2021 to 2022 and 2022 to 2023, year-on-year growth was approximately 50%. The removal of fuel economy constraints and uncertainty around California's waiver, together with the elimination of purchase tax credits, further threaten EV adoption.

Renewable fuels saw progress, especially renewable natural gas and sustainable aviation fuel

Renewable natural gas (RNG) supply reached 225 trillion British thermal units (BTU) in 2025, up 24% from 2024, supported by utilities signing several long-term offtake agreements and a 21% year-on-year increase in demand from natural gas vehicles. Most supply continued to come from landfill gas, followed by agricultural and manure-based sources.

Sustainable aviation fuel (SAF) had its strongest year to date, with capacity more than doubling in 2025. Growth was driven by export opportunities generated by EU and UK SAF mandates, US tax credit extensions for clean fuels and rising domestic demand for jet fuel. By contrast, renewable diesel supply declined for the first time since the market began to emerge in 2020, reflecting squeezed producer margins.

A year of dramatic policy change for the energy sector

Rapid changes in tariff policy challenged investment decisions

The first half of 2025 marked considerable uncertainty for companies and investors with exposure to clean-tech supply chains. A remarkable 47 trade and tariff policies were announced through June. This included 34 higher trade barriers and 13 reductions. The second half of the year was slightly slower with 40 total tariff changes announced.

Among technologies core to the transition, lithium-ion batteries were most exposed to drastic swings in tariffs. Non-EV battery duties rose from just 11% at the start of the year to over 156% in April, before finishing the year back down at 31%. This impacted deployment of Chinese-made batteries in the US. In 2024, China accounted for 69% of battery imports to the US. In 2025, that fell to 40% as companies adapted to the high tariffs.

OBBBA makes significant changes to energy tax policy, phasing out or altering a number of credits

The One Big Beautiful Bill Act (OBBBA), passed in July 2025, accelerated the phaseout of key long-standing tax credits for clean energy and cut federal subsidies for clean-tech manufacturing.

The 48E investment tax credit and 45Y production tax credits, the transformed Production Tax Credit and Investment Tax Credit enacted under the Biden-era Inflation Reduction Act (IRA), are now on rapid phasedown timelines for wind and solar.

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Projects deploying those technologies can claim the credits through 2027 but must meet increasingly stringent Foreign Entity of Concern (FEOC) rules around supply chains. Energy storage retains the tax credit through 2034 but is subject to its own FEOC rules.

Incentives for EVs were eliminated almost immediately. The 30D vehicle purchase credit sunset October 1, and the 30C charging credit will phase out at the end of June 2026. Energy efficiency credits for residential (25C, 45L) and commercial (179D) customers were also eliminated.

Manufacturing subsidies were cut by $32 billion from unspent allocations, and previously obligated federal spending is also at risk of canceled loans and grants. Since the passage of the IRA in 2022, manufacturers had planned to invest over $106 billion in clean-tech supply chains. But new announcements slowed significantly in 2025 and almost 10% of original pledges have now been canceled, per BNEF data.

Offshore wind was dealt severe blows

Offshore wind projects faced particular challenges in 2025. First, the Trump administration sought an indefinite moratorium on any new leasing and permitting of projects. This was reversed by court order in December, but the administration is not required to make progress on permit applications.

The administration also issued stop-work orders throughout the year to five offshore wind projects already under construction along the eastern seaboard. Courts have since granted developers preliminary injunctions, allowing them to continue construction. In the interim between the issuance of the orders and the court injunctions, the industry lost millions per day as construction was paused.

Further permitting setbacks for solar and wind

Under a July Department of the Interior memorandum, renewable projects now face an additional permitting hurdle beyond the environmental reviews that have long delayed construction. Any solar or wind project subject to federal permitting or consultation must now pass through a centralized review process previously handled by regional bureaus, adding another layer of oversight. These changes have fueled calls for permitting reform to provide technology-neutral certainty.

Greater support for critical minerals, nuclear and 24/7/365 capacity

The Trump administration has supported several specific energy sectors – critical minerals mining and processing, nuclear power development, natural gas expansion, grid technologies, hydropower and geothermal energy, among others

The Departments of Energy and Commerce secured equity stakes in critical minerals company Lithium Americas, among others, and nuclear reactor firm Westinghouse. The administration also reached agreements with Japan and South Korea around critical minerals, nuclear, natural gas and shipbuilding. The administration directed federal agencies to accelerate nuclear development, setting a goal to construct 10 new large reactors by 2030 and quadruple capacity by 2050 and provide federal loans to restart the large-scale plant in Pennsylvania formerly known as Three Mile Island.

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In addition, nuclear, as well as other forms of dispatchable zero-emission power like geothermal, hydropower, hydrogen and carbon capture-fitted turbines retain extended tax credit eligibility and less restrictive Foreign Entity of Concern (FEOC) standards than energy storage under the OBBBA. New bonus depreciation tax deductions for manufacturing across sectors will also benefit all energy companies, partly compensating for the loss of manufacturing tax credits.

Renewed backing for fossil fuels

In addition to the policy changes mentioned, the administration has increased support for fossil fuels. Declaring a national energy emergency, President Trump issued executive orders to expedite oil and natural gas permitting. The OBBBA cut costs for fossil-fuel operations on federal lands, restoring noncompetitive leasing and reducing royalties. Driven by the promise to revive coal, the administration mandated the continued operation of at least six uneconomic, retiring coal generators and announced $625 million to recommission coal plants, retrofits, and rural coal energy projects.

US greenhouse gas emissions rise, as physical risks continue to translate to damages

Emissions grew, including from the power sector, as coal generation ticked up

The US withdrew from the Paris Agreement in January 2025. Prior to pulling out, the US targeted cutting emissions by 50-52% from 2005 levels by 2030. As of 2025, the US has cut just 14%. For the US to remain on track for targets that had been in place through 2024, power emissions would need to fall by a hefty 13% per year.

The US emitted an estimated 6.4 billion metric tons of carbon dioxide equivalent ($MtCO_2e$) last year, up 1.7% from 2024. Power-sector-driven greenhouse gas emissions rose 3.6% year-on-year, while emissions in the broader economy also rose by 1.1%. This reverses the trend seen prior to 2024 of a steady decline in power-sector emissions since 2007. Power sector emissions at the end of 2025 were 39% below 2005 levels. Over the last 20 years, shifts in the power generation mix away from coal and toward natural gas and renewables have enabled these power emissions reductions. However, in 2025, coal generation rebounded amid rising electricity demand. Transport remains the highest contributor to US emissions but declined by 0.6% as the sector slowly begins to electrify.

The financial costs of climate change reach $800 billion in 2025

The costs of climate disasters and physical risk are not a distant threat. In 2025, the US saw over $800 billion of climate-related financial impact from power outages, government recovery spending, subsidies for insurance and firefighting. That represents about 2.6% of GDP and an average annual growth in damage costs of 11% since 2015.

Quick facts (1 of 2)

Investment and deployment

- **Overall US energy transition investment moved up 3.5% year-on-year to $378 billion**, as higher funding for grids and electrified transport more than offset a dip in renewables investment. Grids spend grew 10%, largely due to rising electricity demand and the integration of more renewable power on the system.
- **Electric generation capacity additions hit a two-decade high** with 54 gigawatts (GW) of new utility-scale generation and storage capacity commissioned in 2025.
- **Renewables accounted for 61% of all new build at 33GW**. Utility-scale solar led with 27GW (AC) capacity commissioned, while wind held steady at about 6GW. Including battery storage, zero-emission sources reached a new peak of 48GW, or 90% of total 2025 additions as measured in capacity terms.
- **Power generation grew 3% year-on-year to hit a 20-year high of 4,514 terawatt hours (TWh)**. Natural gas was the largest single contributor at 40% of generation. Taken together, zero-carbon sources – renewables and nuclear power – provided 43% of generation.
- **Natural gas demand grew 5.1%** in 2025 to 104.8 Bcf/d, driven by growing residential and commercial building use and exports.
- **EV sales reached a record 1.6 million units, up 3.7% from 2024**, partly reflecting the consumer rush to take advantage of federal tax credits before they phased out in October.
- **Renewable fuels saw progress,** renewable natural gas (RNG) supply reached 225 trillion British thermal units (BTU) in 2025, up 24% from 2024 and sustainable aviation fuel (SAF) had its strongest year to date, with capacity more than doubling in 2025.
- **Corporate clean power purchase agreements reached a new high** of 29.5GW in 2025, the highest annual total on record, narrowly surpassing the 29.1GW signed in 2024. Last year was marked by a growing share of nuclear, hydropower and geothermal contracts.

Load growth and prices

- **National retail electricity demand climbed 2% year-on-year in 2025** and is up 8% over the past decade.
- **Power demand specifically from data centers grew 18% year-on-year** and has risen more than 150% in the past five years.
- **23GW of IT capacity is now online in the US** and an additional 48GW is under construction or committed with land, power and permits confirmed, primarily in PJM, Texas and the Southeast.
- **Retail electricity prices rose an average of 2.3% nationally year-on-year.** In PJM, prices rose 6%, but some states within the 13-state (plus Washington, DC) market saw larger swings. In New Jersey, for instance, prices rose 12% and were a hot-button issue in the fall elections.

Quick facts (2 of 2)

Policy turmoil

- **Signed into law July 4, 2025, the One Big Beautiful Bill Act (OBBBA) cut or significantly altered tax credits that have supported US sustainable energy technologies for decades.** The EV consumer tax credit disappeared in October. Credits supporting energy efficiency improvements were gone by the end of the year. Wind and solar credits will phase out in the next few years. Other technologies' credits sunset on longer timelines.
- **The administration made no less than 87 trade and tariff policy changes on energy transition related goods** in 2025, creating considerable uncertainty for companies and investors.
- **Duties on batteries for use in stationary storage applications** rose from 11% at the start of the year to over 156% in April, before finishing the year back at 31%.
- **The share of battery imports from China fell from 69% in 2024 to 40% in 2025** (in dollar terms) as companies adapted to higher tariffs.
- **All five under-construction offshore wind projects in the Atlantic received stop-work orders from the administration** before courts intervened to restart them. In the interim, developers lost millions and still await final decisions.
- **Almost 10% of the $106 billion announced investment in clean-tech supply chains since the passage of the IRA has been cancelled** following the rollback of incentives under the OBBBA.

Climate Change

- **Greenhouse gas emissions from the power sector rose 3.6% year-on-year as coal generation picked up**. Power emissions would need to fall by a hefty 13% per year for the US to remain on track for the targets set out in the Paris Agreement.
- **The US saw over $800 billion of climate-related financial impact** from power outages, government recovery spending, subsidies for insurance and firefighting. That represents about 2.6% of GDP and an average annual growth in damage costs of 11% since 2015.

These trends are discussed in far greater depth, and with graphic illustrations, in the Factbook itself.

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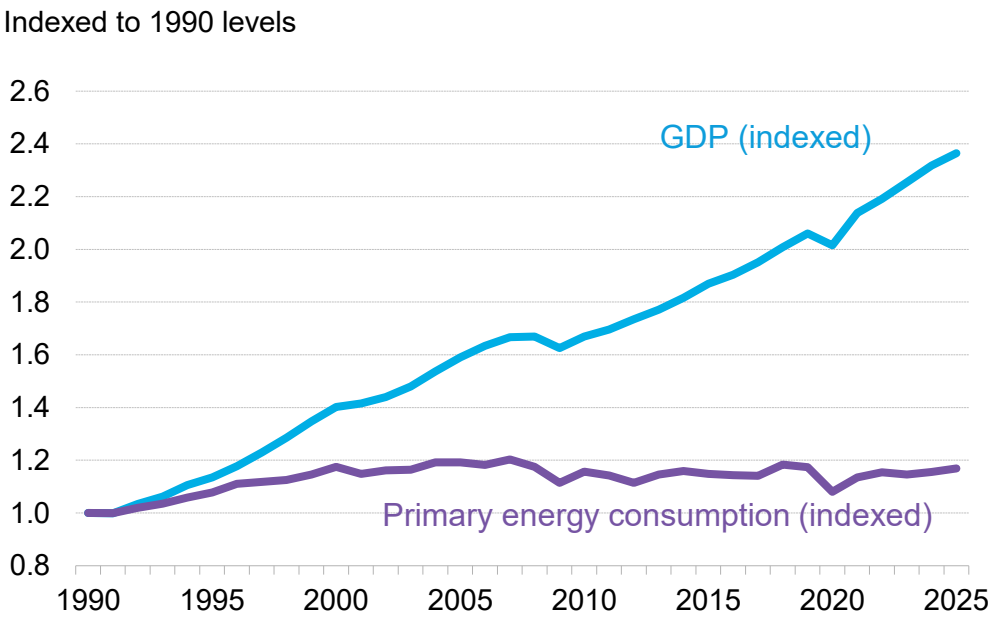
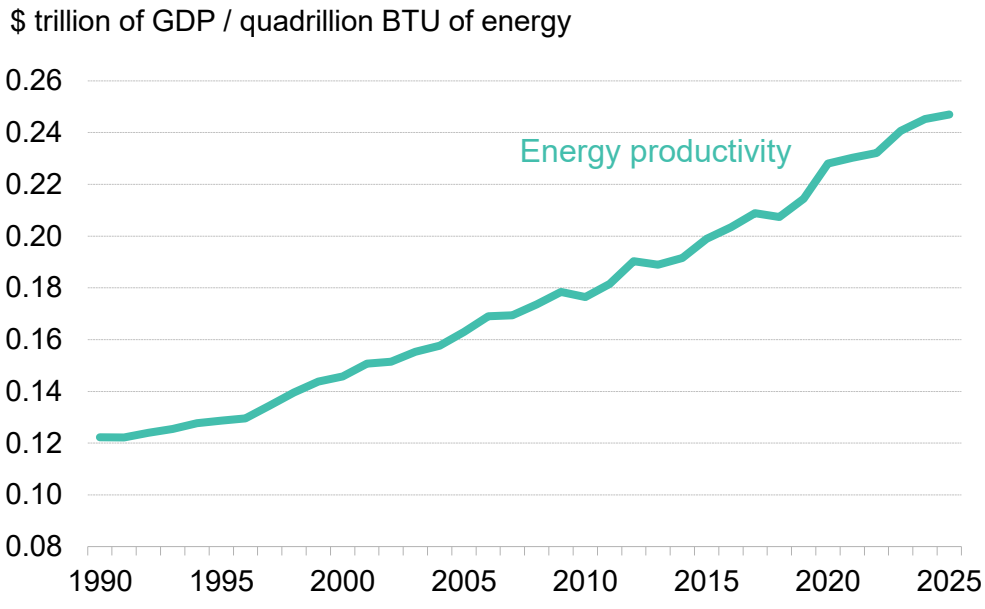
US energy overview: Energy productivity

US GDP (real) and primary energy consumption



US energy productivity

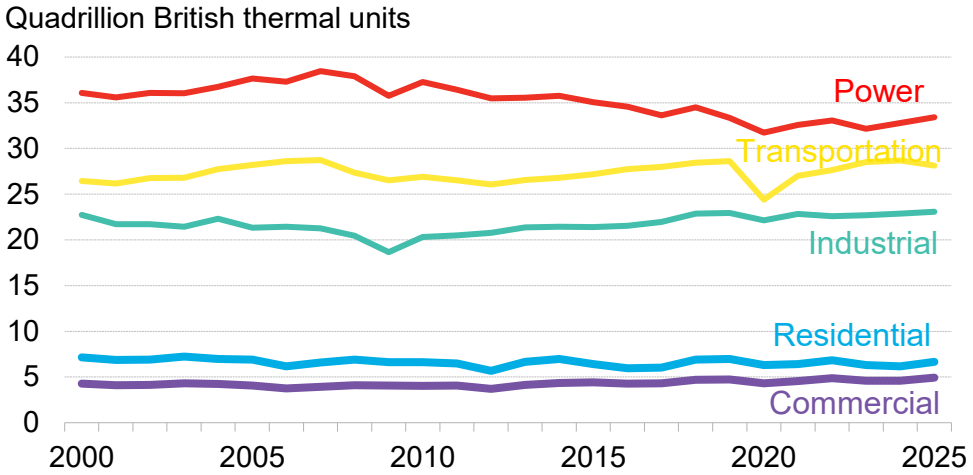


- The US economy expanded by 2.0% in 2025, while primary energy consumption increased just 1.2% year-on-year. This difference in growth rates resulted in an increase in “energy productivity”, defined as the ratio of US gross domestic product (GDP) to total US primary energy consumption, of approximately 0.8% last year. Taking a broader view, the US has grown 26.5% over the past 10 years and primary energy consumption has increased 1.8%, meaning US energy productivity has gone up 24.2% over the decade.
- The relatively small rise in energy consumption last year, compared with much stronger growth, underscores continued improvements in US energy productivity. The US generated 4,514 terawatt-hours of power in 2025, up 121 terawatt-hours from the prior year. Natural gas was the primary source of power; renewable energy was second.

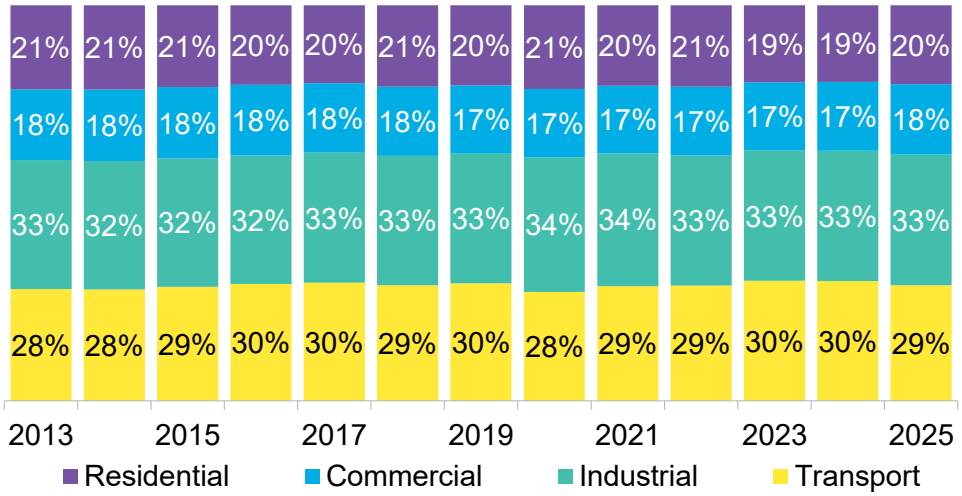
Source: Bureau of Economic Analysis, US Energy Information Administration, BloombergNEF. Note: Values for 2025 are projected, accounting for seasonality, based on latest monthly values from US Energy Information Administration (data available through October 2025). The 2025 gross domestic product (GDP) estimate is a projection from economists compiled at ECFC <GO> on the Bloomberg Terminal. BTU refers to British thermal units.

US energy overview: Primary energy consumption, by sector

US primary energy consumption



US end-use energy consumption

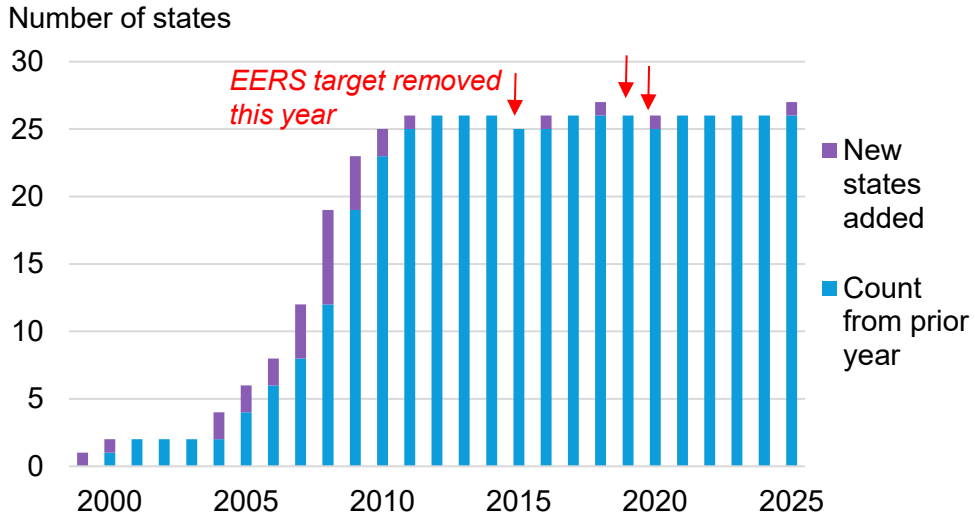


- Energy consumption from residential buildings increased by 8.5% year-over-year and commercial buildings saw a 7.5% increase during the same period. These gains build on a decade-long upward trend, as residential use has growth 3.8% since 2015, while commercial consumption has climbed 12% over the same time frame.
- In 2025, energy consumption in the industrial sector saw an increase of 0.93%, while the transportation sector saw a decrease of 2.2%. Over the past decade, industrial energy consumption has grown by 8.2%. Energy used in transport is up 3.2% over the same time period but remains below the pre-pandemic level in 2019.
- Energy consumed to produce power increased by 2% year-on-year, reaching 33.4 quadrillion British thermal units (BTU). This is a 4.7% decline over the past decade, maintaining the overall decline in power sector energy consumption since its peak at 38.5 BTU in 2007.
- Energy use from corresponding end uses as a proportion of total energy consumption saw slight changes from 2024, with residential and commercial consumption both increasing by 1%, transport consumption decreasing by 1% and industrial consumption remaining the same.

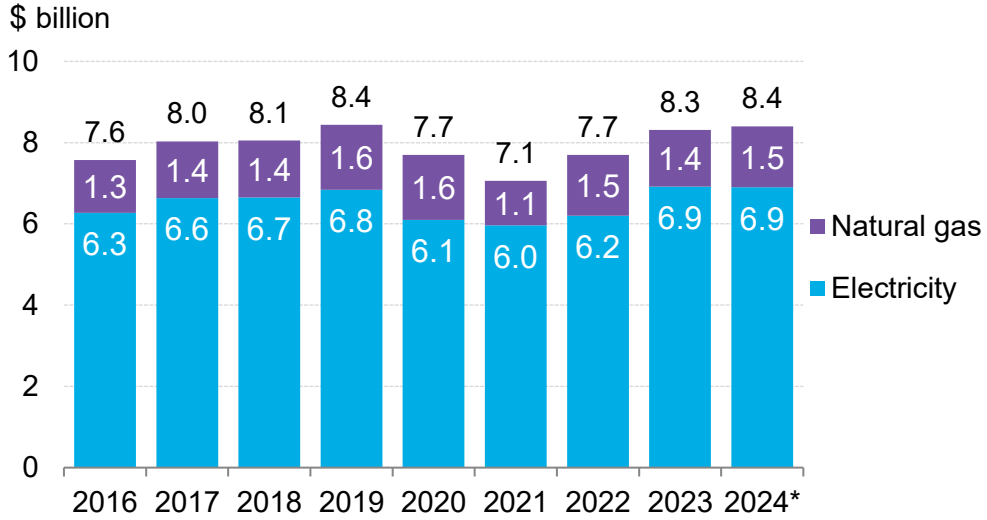
Source: US Energy Information Administration, EPA, BloombergNEF. Note: Values for 2025 are projected, accounting for seasonality, based on latest monthly values from the US Energy Information Administration (data available through October 2025). Electricity is excluded from industrial, residential, commercial and transportation sectors and aggregated in "power" in the left-hand chart. In the right-hand chart, sector end uses include electricity use.

US energy overview: Energy efficiency

US states with Energy Efficiency Resource Standards (EERS)



Utility energy efficiency spending

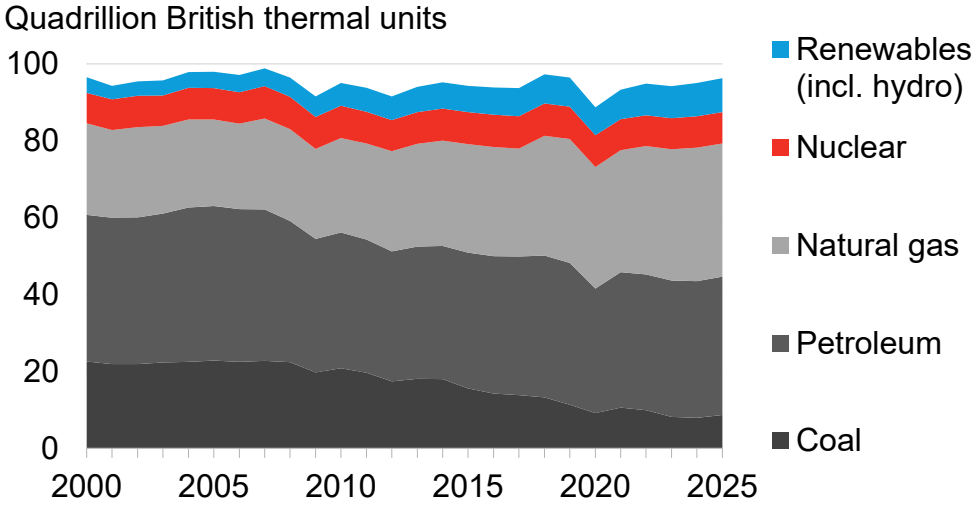


- Energy Efficiency resource standards (EERS) are state-level policies that require utilities to invest in measures to improve end-user efficiency, usually with an eye to meeting energy-savings goals set by the government. Last year, 27 states and the District of Columbia had EERS policies in place.
- In 2024, the last year for which there is complete data, efficiency spending rose slightly to $8.4 billion after returning to pre-pandemic levels the year before, according to data compiled by the American Council for an Energy-Efficient Economy (ACEEE) and the American Gas Association (AGA).
- Spending on efficiency improvements related to electricity remained at $6.9 billion in 2024, while spending on improving the efficiency of natural gas delivery reached $1.5 billion.
- According to ACEEE, states with EERS in place accounted for 62% of overall US electricity sales in 2024. Louisiana adopted new requirements for saving energy in 2025. Arizona is expected to complete a repeal of the state's energy saving requirements in 2026.

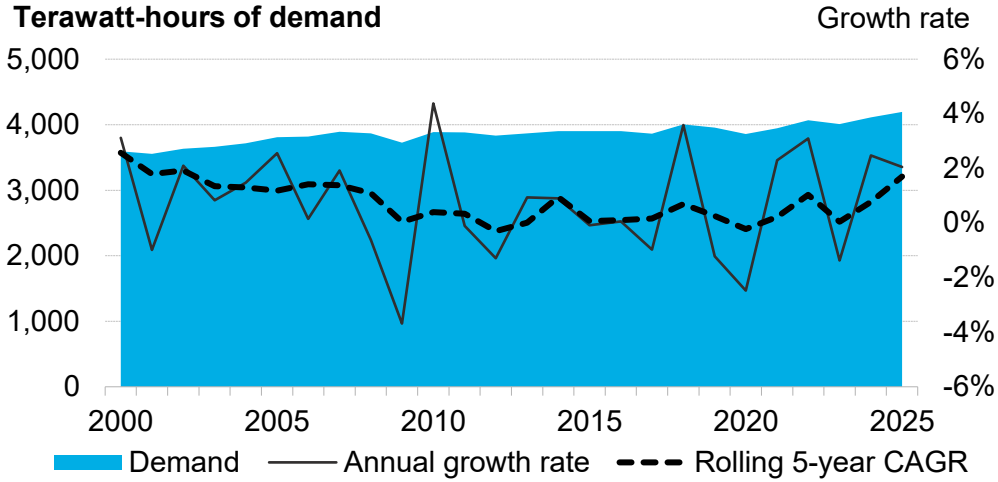
*Source: American Council for an Energy-Efficient Economy (ACEEE), Energy Information Administration, American Gas Association, Energy Efficiency Survey, 2026 American Gas Association. BloombergNEF. Note: Natural gas utility expenditure data originate from AGA's Annual Energy Efficiency Survey. Aggregated values are limited by the survey sample and do not represent total US natural gas utility expenditures on energy efficiency programs. *For 2024, the total reflects budgets reported during the 2023 program year survey and does not reflect finalized expenditures.*

US energy overview: Energy and electricity consumption

US primary energy consumption, by fuel type



US electricity demand

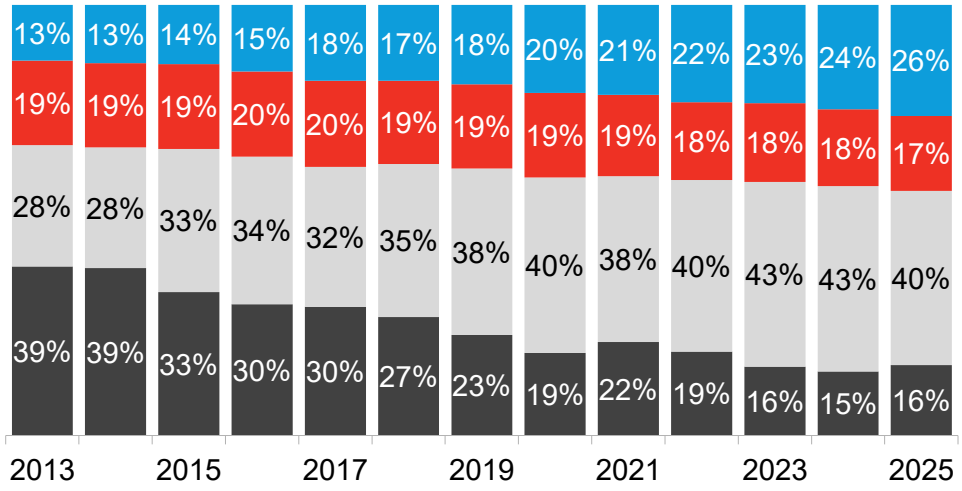


- US primary energy consumption grew 1.2% from 2024 to 2025, to an estimated 96.2 quadrillion BTU. This growth was met by increased reliance on renewables (including hydro), petroleum and coal, which were up 1.2%, 1.2% and 9.4% year-on-year, respectively.
- Coal consumption as a share of the US primary energy mix trended upward for the first time since 2021. Despite this increase, coal accounted for only 9% of the US energy mix in 2025, as opposed to 16.5% a decade ago. The gap was largely filled by natural gas and renewables (including hydro), whose respective share of US consumption was 36% and 9.1% this past year.
- Petroleum is the largest energy source in the US consumption mix, totaling 36 quadrillion BTU in 2025, with natural gas a close second at 34.7 quadrillion BTU. Primarily used for various transport fuels, petroleum represented 37.4% of US primary energy consumption; petroleum use has grown 1.8% over the past decade.
- Total retail demand for electricity climbed 2% year-on-year and is up 7.5% over the past decade. Rising demand for electricity from industrial activity and large loads – data centers, the electrification of oil and gas production, and some reshoring of manufacturing – has been a key driver. When smoothing short-term fluctuations over five-year periods, US electricity demand has grown about 1.7% a year on average over the past five years, the highest sustained growth since 2002.

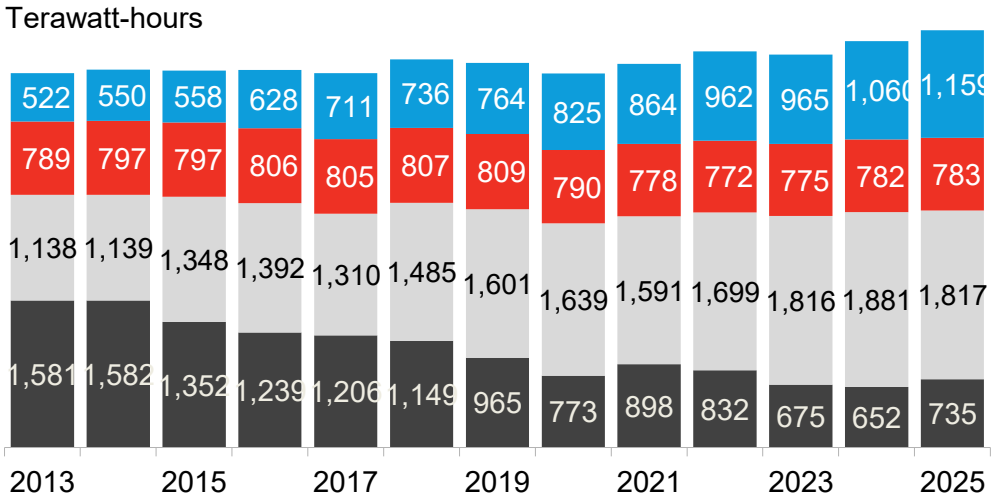
Source: US Energy Information Administration, BloombergNEF. Notes: "CAGR" in the right-hand chart is compound annual growth rate. Values for 2025 are projected, accounting for seasonality, based on the latest monthly values from the US Energy Information Administration (data available through October 2025).

US energy overview: Electricity generation mix

Share of US electricity generation, by fuel type



US electricity generation, by fuel type

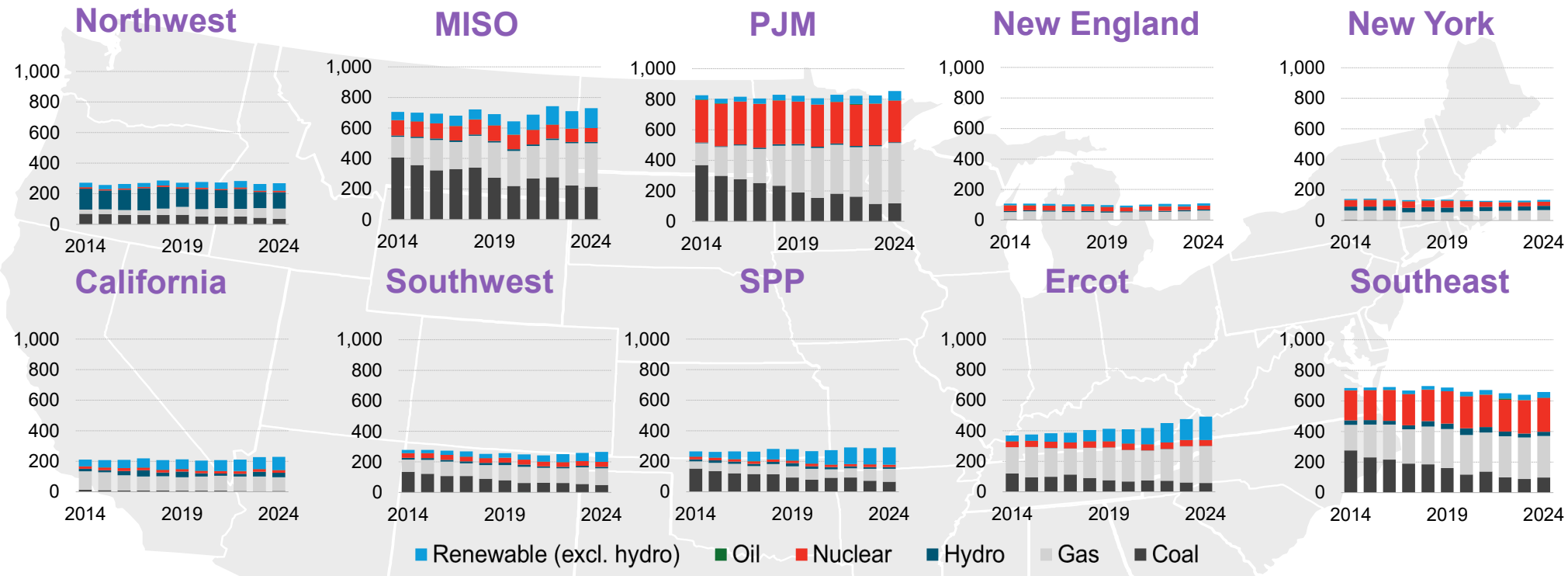


Renewables (incl. hydro) Natural gas Nuclear Coal

- US power generation reached its highest level in two decades in 2025, jumping 2.8% year-on-year to 4,514 terawatt hours (TWh). Natural gas provided 40% of total power generation, renewables 26%, nuclear 17% and coal 16%. The share of electricity generation from zero-carbon sources – renewables and nuclear power combined – grew to 43%.
- Renewables (including hydro) have seen the fastest growth among all power sources, in both percentage and absolute terms. In 2025, a total 1,159TWh of electricity was generated from renewables (including hydro), up 9.3% from the prior year. Nuclear generation grew 0.1% year-on-year to 783TWh.
- Generation from coal grew 12.7% year-on-year to 735TWh. In the past decade, however, coal-fired generation has steadily declined, from 33% of the generation mix to 16.3%. This gap is largely filled by natural gas and renewables, which jointly contributed 65.9% of the generation mix by the end of 2025, compared with 41.1% just a decade ago.

Source: US Energy Information Administration, BloombergNEF. Note: Values for 2025 are projected, accounting for seasonality, based on latest monthly values from US Energy Information Administration (data available through November 2025).

US energy overview: Electricity generation mix by power market (TWh)

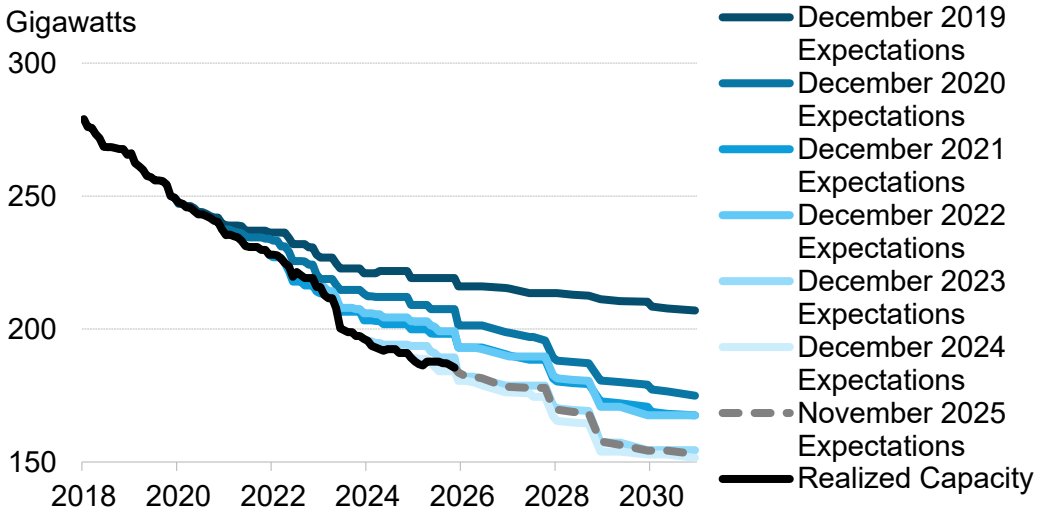


- The power generation mix varies throughout the US. Some power regions are considerably larger than others, in terms of generation. Power can also be sold between regions, but interregional trading is limited by transmission capacity across markets. About two-thirds of US power generation occurs in competitive wholesale markets.
- The major trend over the last decade continues to be the rise of natural-gas-fired generation displacing coal. For 2024, the last year for which there is sufficiently complete regional data, coal generation dropped in most regions, falling 4% year-on-year and 59% over the preceding decade.
- Renewables – primarily wind and solar – continue to grow across markets. In the Midcontinent Independent System Operator (MISO) for example, renewable generation increased 14% year-over-year in 2024, driven primarily by wind.

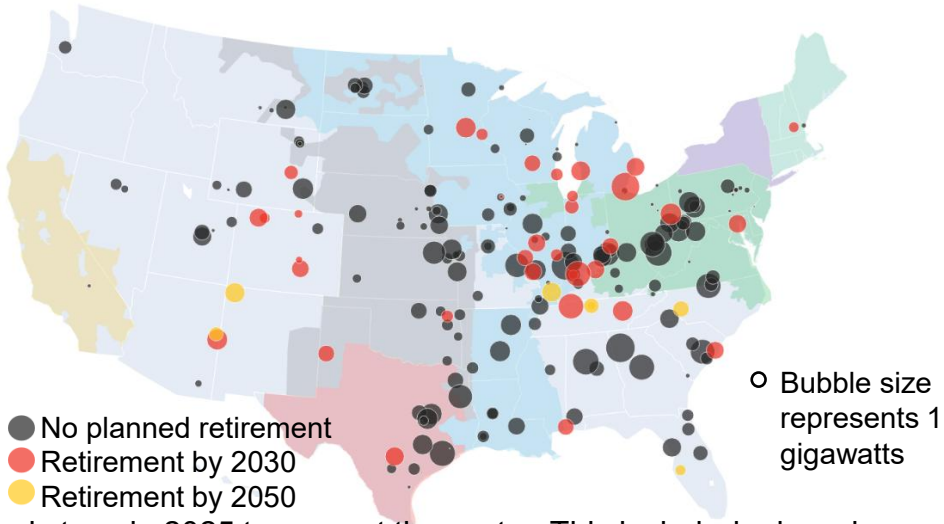
Source: US Energy Information Administration, BloombergNEF. Note: MISO (Midcontinent Independent System Operator) is the Midwest region; PJM (PJM Interconnection) is the Mid-Atlantic region; SPP (Southwest Power Pool) covers the central southern US; Ercot (Electric Reliability Council of Texas) covers most of Texas.

US energy overview: Coal retirements and renewed policy focus

Realized and planned coal capacity expectations



Operating and planned coal retirements

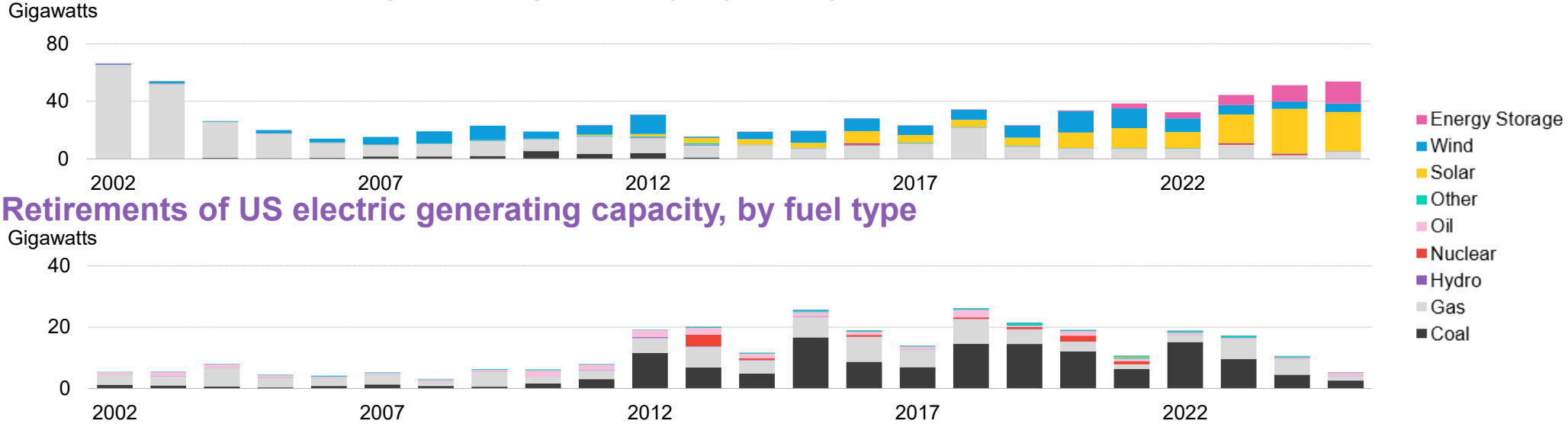


- Driven by the promise to revive coal, the Trump Administration took several steps in 2025 to support the sector. This included advancing coal mining land leases to boost production, mandating at least six uneconomic, retiring coal generators to keep operating under Department of Energy 202(c) emergency orders, and announcing plans to make up to $625 million available for rural capacity, retrofits and recommissioning of aging coal assets. Coupled with rising overall power demand, these moves have enabled a renewed focus on the US coal fleet.
- Yet that policy support comes against a backdrop of structural decline in the US coal fleet. From January 2018 to November 2025, operational coal capacity decreased by a total of 93.4GW. The current fleet stands at 185.5GW as of November 2025, or 13.6% of the country's capacity.
- Operator plans filed with the US Energy Information Administration show a further 37.6GW slated to retire by end of 2030, which would shrink the US coal fleet to 153GW. While historic trends in the early 2020s suggest more coal retires than owners initially project, this trend in growing retirements has weakened as November 2025 coal fleet expectations were hiked back to the retirement expectations set in 2023. With the average years of operation for a coal unit now standing at 48 years – 21 years longer than the average gas unit – many of these aging units are costly and less economically competitive than gas or renewables. For example, complying with the DOE must-run order for the J.H. Campbell plant in Michigan cost $29 million in just the first five weeks, and cost recovery will be sought from ratepayers, according to Consumers Energy's filings with the Securities and Exchange Commission.

Source: US Energy Information Administration, BloombergNEF, Consumers Energy. Note: Map figure and 2025 expectations use November US Energy Information Administration data. Prior year expectations use December Energy Information Administration data.

US energy overview: Electric generating capacity build, by fuel type

Build of new US electric generating capacity, by fuel type

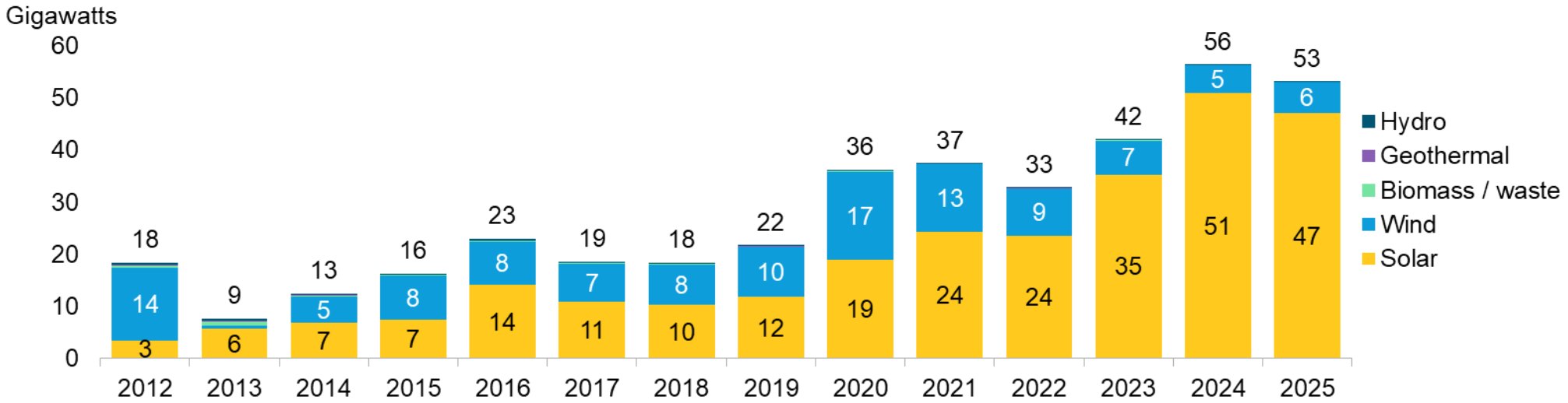


Retirements of US electric generating capacity, by fuel type

- The US commissioned an estimated 53.7GW of new utility-scale generation and storage capacity in 2025, marking the highest annual capacity additions since 2003. This expansion reflects continued growth in electricity demand alongside a structural shift in the technologies being deployed. At the same time, retirements fell to just 5.1GW in 2025, the lowest level since 2008, as coal phaseouts, which have dominated retirements over the past decade, slowed to preserve capacity amid stronger demand.
- Renewables dominated new generation additions, with wind and solar contributing 33.2GW, or 61.2% of total capacity added. Renewable generation capacity additions fell 8.1% from a record year in 2024 but remained the largest share of new projects coming online in 2025. Solar led with 27.3GW of alternating current capacity commissioned during the year. Natural gas additions totaled 5.2GW, double the record-low 2.6GW in 2024. However, this still represents the second-lowest annual gas build since 2000, in part due to continued turbine availability constraints and less favorable project economics. Utility-scale energy storage emerged as a central component of new capacity, with a record 15.2GW added in 2025, up 35.4% year-on-year. The rapid expansion highlights storage's growing role in providing dispatchability and supporting higher renewable penetration on the grid.
- Taken together, 2025 continued a long-term rotation in US capacity additions: gas dominated the early 2000s, wind expanded rapidly in the 2010s, and the 2020s are now being led by solar, with battery storage increasingly deployed alongside new renewable generation.

Source: US Energy Information Administration (EIA), BloombergNEF. Note: Historical and 2025 thermal and hydro capacity figures use EIA survey data. Solar capacity counted in alternating current (AC) terms to enable a comparison to other grid-facing technology. Distributed rooftop solar not included.

US energy overview: Renewable energy capacity build by technology

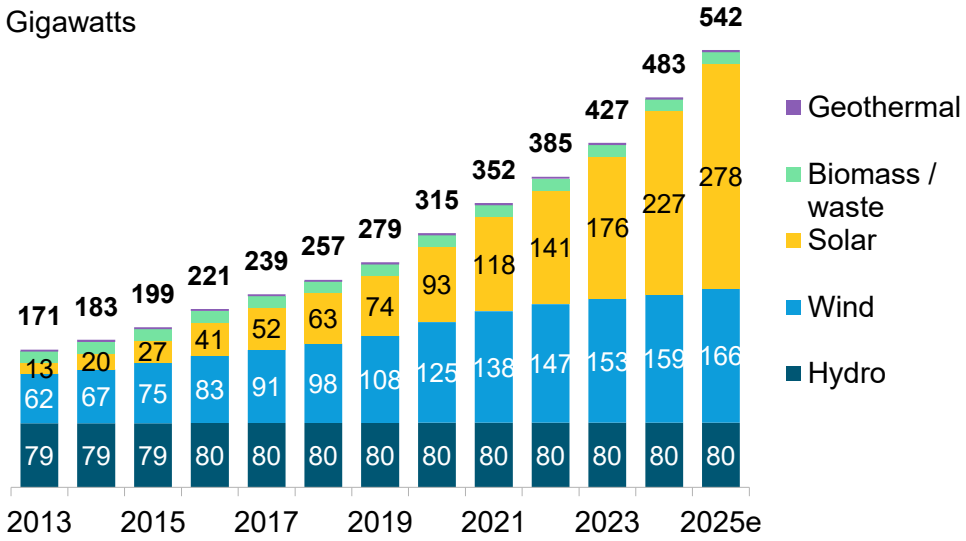


- Renewable capacity additions dropped for the first time in three years, with a total of 53GW coming online in 2025 as the solar market dipped after several years of rapid growth. Despite the challenges around high cost of debt, constraints in site permitting, grid connection bottlenecks, and policy uncertainty, clean power deployment was sustained by rising electricity demand and continued interest from corporate buyers.
- Utility-scale solar accounted for 36GW of new direct current capacity, marking moderation after two years of high growth. New projects continued to meet rising demand from data centers and electrification while helping offset capacity lost from retiring thermal assets. Texas led, installing more than 11GW of new utility-scale capacity. Meanwhile, US rooftop solar installations on homes and businesses exceeded 11GW.
- Annual onshore wind installations grew about 8% year-over-year, the first rebound after four years of decline. However, development activity remains below 2020 levels largely due to permitting and grid connection constraints. In addition, power prices have slumped in markets with high wind penetration, discouraging new capacity buildout in these regions.
- New biomass, geothermal and small hydro build remained comparatively small in 2025. The Hat Creek Bioenergy plant in California, which has a capacity of 3.6MW, was the largest project in this group to begin operation. Construction to expand a waste-to-energy plant in Pasco County, Florida by 18MW will continue next year. In 2026, Fervo Energy expects to connect 53MW from its Cape Station geothermal project in Utah, with plans to scale capacity over 400MW in 2028.

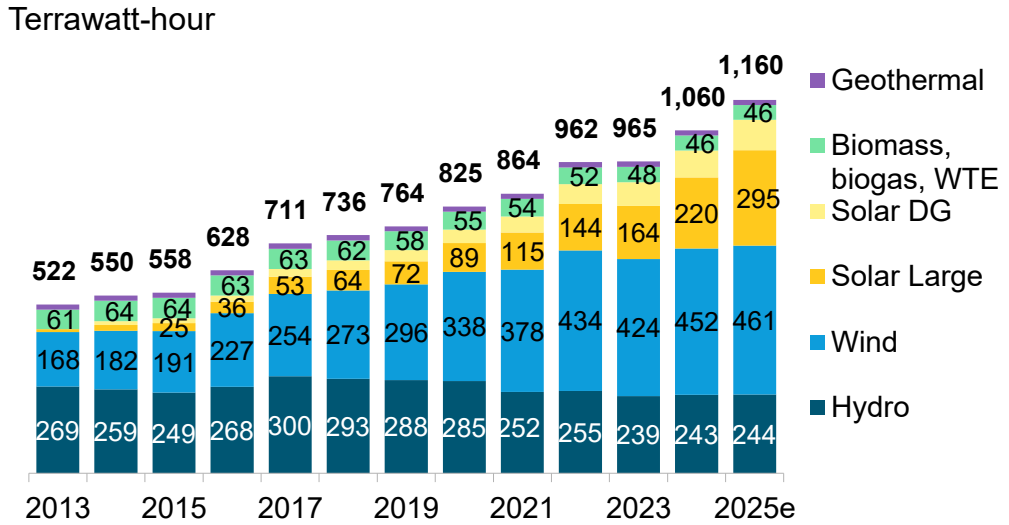
Source: BloombergNEF, US Energy Information Administration (EIA). Note: All values are shown in alternating current (AC) except solar, which is included as direct current (DC) capacity using a 1.32 conversion factor. Numbers include utility-scale (>1MW) projects of all types, rooftop solar, and small- and medium-sized wind. Includes installation figures from the US EIA through December 2025.

US energy overview: Cumulative renewable energy

US cumulative renewable power capacity



US renewable generation, by technology

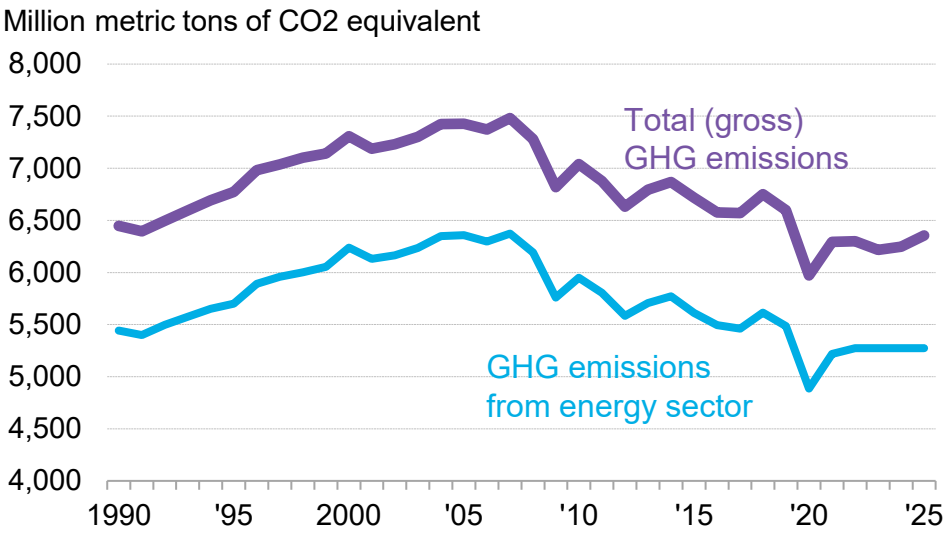


- In 2025, total US renewable energy capacity, excluding pumped hydro facilities, rose to 542GW, up 12.1% from the prior year. The growth was largely driven by rapid solar buildout, which saw seven times more installations than all clean technologies combined, reaching a total capacity of 278GW. While the US wind fleet grew 4.8% year-on-year, annual additions accelerated nearly 20% from the previous year, the fastest growth rate of any clean technology.
- Total renewable electricity generation in the US rose 9.4%. Power generation from utility-scale solar facilities experienced its second straight year of record year-on-year growth, rising 34% to 295TWh. Generation from distributed solar on residential and business rooftops grew 10.7%, to 93TWh.
- Overall, wind remained the largest generating source, accounting for 40% of total renewable output. The 166GW of US wind capacity produced 461TWh of electricity in 2025, while hydro generated 244TWh. Other renewable generation sources, like biomass, biogas and waste-to-energy (WTE) and geothermal accounted for 5.3% of clean generation, down slightly from last year.

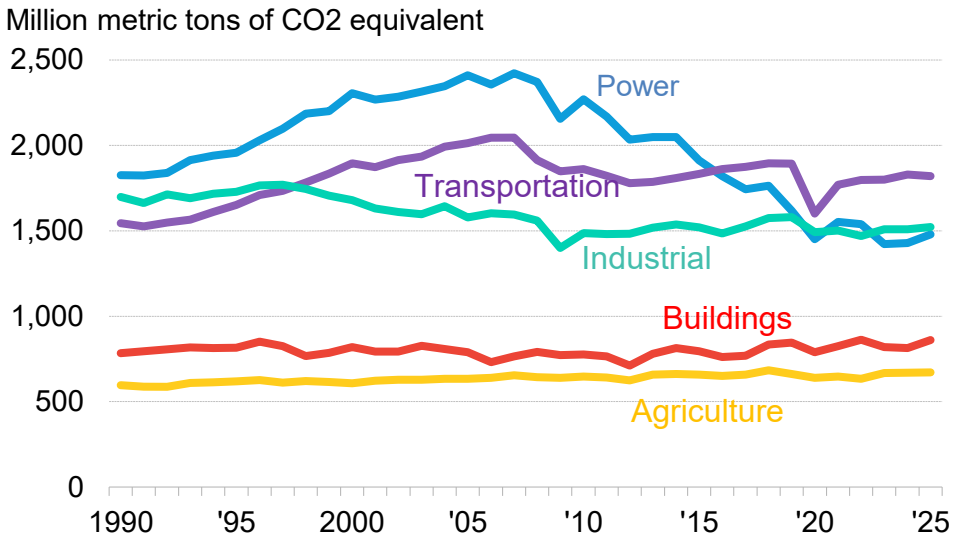
Source: BloombergNEF, US Energy Information Administration (EIA). Note: All values are shown in alternating current (AC) except solar, which is in direct current (DC) capacity using a 1.32 conversion factor. Totals may vary slightly due to rounding. Values for 2025 are projected, accounting for seasonality, based on latest monthly values from US EIA (data available through November 2025). WTE refers to waste-to-energy, while DG is distributed generation.

US energy overview: Greenhouse gas emissions

Economy-wide and energy sector emissions



Emissions by sector



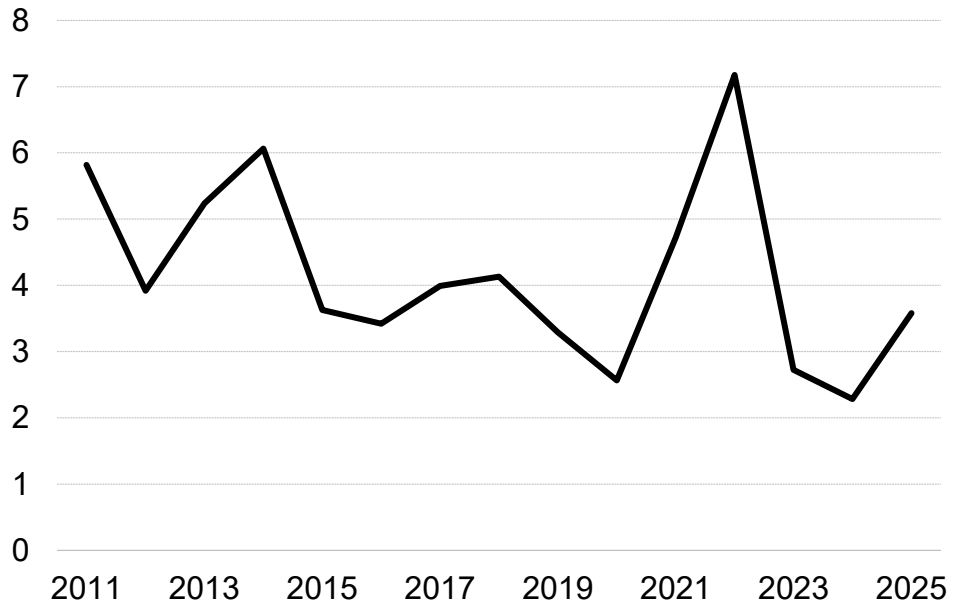
- The US emitted 6,354 million metric tons of carbon dioxide equivalent ($MtCO_2e$) last year, BNEF estimates, up 1.7% from 2024. Emissions rose in industry, agriculture, buildings and power, which more than offset the slight decline in emissions from transportation. Following a trend of steady decline since 2007, power emissions have grown 0.4% and 3.6% in 2024 and 2025 respectively, largely due to growing electricity demand. Buildings also saw a noticeable emissions growth of 5.9% in 2025, representing 46% of the country's total emissions growth.
- Transport accounts for more emissions than any other sector of the US economy. Industry is second, narrowly edging out emissions from power over the past two years. Transport emissions have fallen by 0.7% over the past decade, a trend that was sustained in 2025 with emissions dropping 0.6%.
- Total US emissions have fallen by 5.4% over the past decade, and 15.1% since their 2007 peak. Long-run emissions declines have been driven mainly by coal displacement in power, but a coal rebound in 2025 has slowed power-sector emissions gains. Across all sectors besides transportation, steady emissions cuts have been harder to sustain.

Source: BloombergNEF, US Energy Information Administration, US Environmental Protection Agency. Note: GHG stands for greenhouse gas.

US energy overview: US natural gas pricing, wholesale and by end use

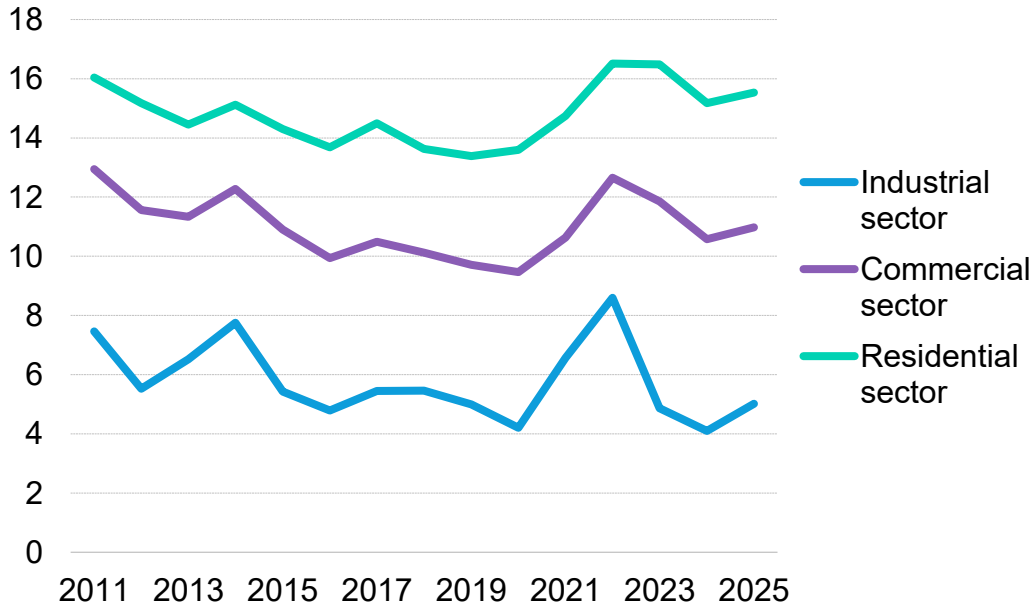
Natural gas wholesale prices at Henry Hub, LA

$/million british thermal units (real 2025)



Natural gas prices to end users, US average

$/million cubic feet (real 2025)

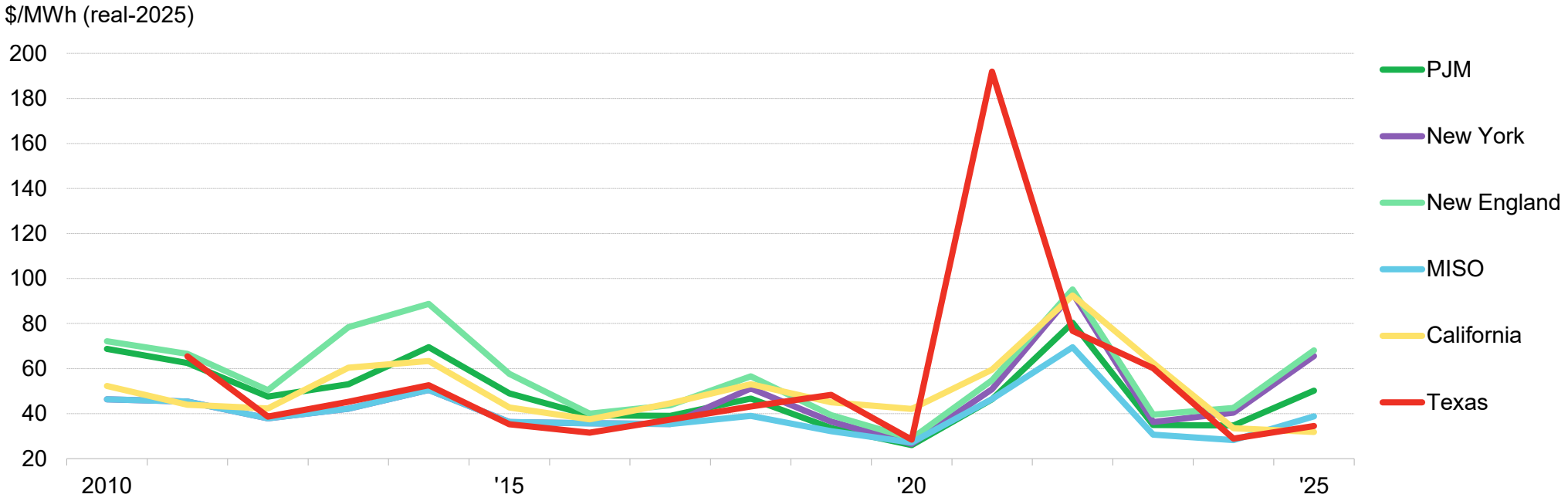


- The US saw natural gas prices rise at Henry Hub, after two years of declines. Wholesale prices rose 56% above 2024 figures in real terms, driven by high heating demand and oil and gas well freeze-offs during the frigid winter months of 2025, as well as a rapid rise in liquefied natural gas (LNG) feedgas demand from export facilities.
- Prices for end users in all retail segments increased across the board. Industrial, commercial and residential natural gas prices rose 22%,4%, and 2%, respectively.
- Residential price adjustments tend to lag index prices by six to 12 months, depending on utility practices, while industrial prices tend to be most correlated to wholesale markets. This dynamic is part of the significantly lower decline observed in residential prices compared to industrial prices.

Source: BloombergNEF, US Energy Information Administration Short Term Energy Outlook.

US energy overview: Wholesale power prices

Wholesale power prices

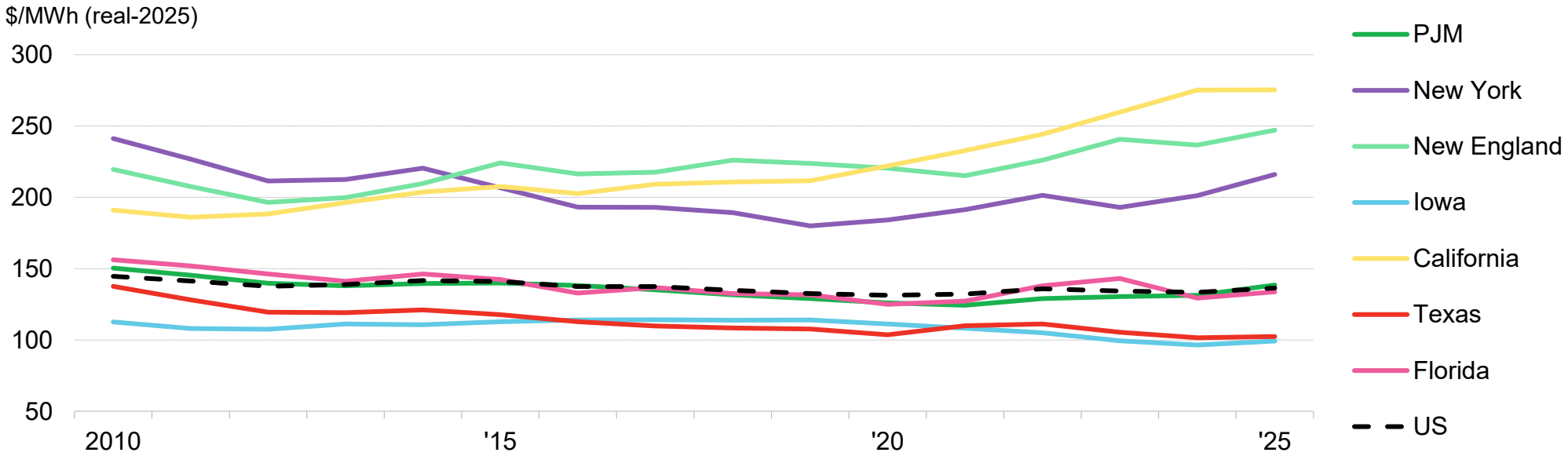


- Rapid data center load growth has intensified policy focus on electricity prices and “affordability”. In 2025, higher natural gas prices tended to drive power prices with timing varying by when systems were tightest and most reliant on gas-fired power.
- Wholesale power prices are driven mainly by the generation mix, the marginal fuel cost and real-time grid constraints. In the gas-heavy Northeast and Mid-Atlantic, price increases showed during winter cold snaps, when heating demand pushed fuel costs up. That dynamic led to sharp year-on-year wholesale price gains in New York (62%), New England (60%) and the PJM market (45%).
- In Texas, the impact was concentrated in summer: despite rapid data center growth, a milder summer minimized power price spikes, but elevated gas prices kept average summer prices higher, lifting wholesale prices 19% year-on-year.
- By contrast, California's high penetration of solar and storage helped smooth peak-period pricing. Alongside softer fuel and carbon costs, prices declined 4.8%.

Source: BloombergNEF, US Energy Information Agency, Bloomberg Terminal. Note: Wholesale prices are taken from proxy power hubs in each independent system operator (ISO). All prices are in real 2025 USD. MISO is the Midwest region; PJM is the Mid-Atlantic region.

US energy overview: Retail power prices

Retail power prices

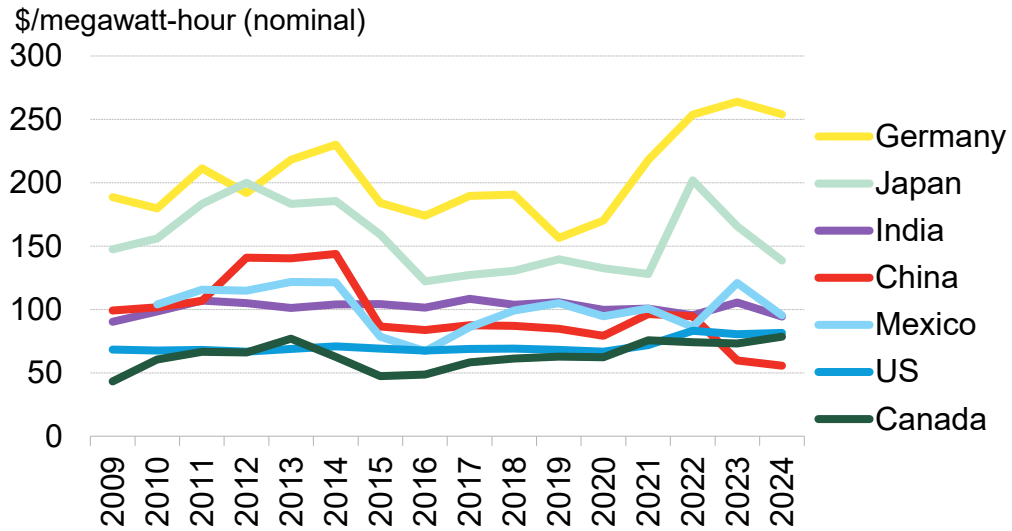


- Retail prices typically lag wholesale movements and embed the cost of fixed infrastructure, utility investment recovery and riders for state programs or extraordinary charges. As a result, retail changes in 2025 were more gradual:
  - New York (7.4%) and New England (4.4%) rose as prior wholesale increases flowed through procurement cycles and rate cases.
  - PJM retail prices rose 5.5%, but the average masked meaningful differences across states. Virginia, where data-center growth is concentrated, saw about a 2.2% increase while New Jersey rose 12%. New Jersey's rise is consistent with local congestion and higher regional gas exposure, aligning it more closely with Northeast market dynamics.
  - After nearly two decades of rising retail rates, the year-on-year change in California's average retail price flatlined in 2025 in real terms. Softer wholesale conditions helped offset upward pressure from non-energy costs, including wildfire mitigation and other grid expenses. California continues to advance wildfire hardening programs. Recovering the cost of these investments will likely put upward pressure on retail rates even with moderate energy costs.

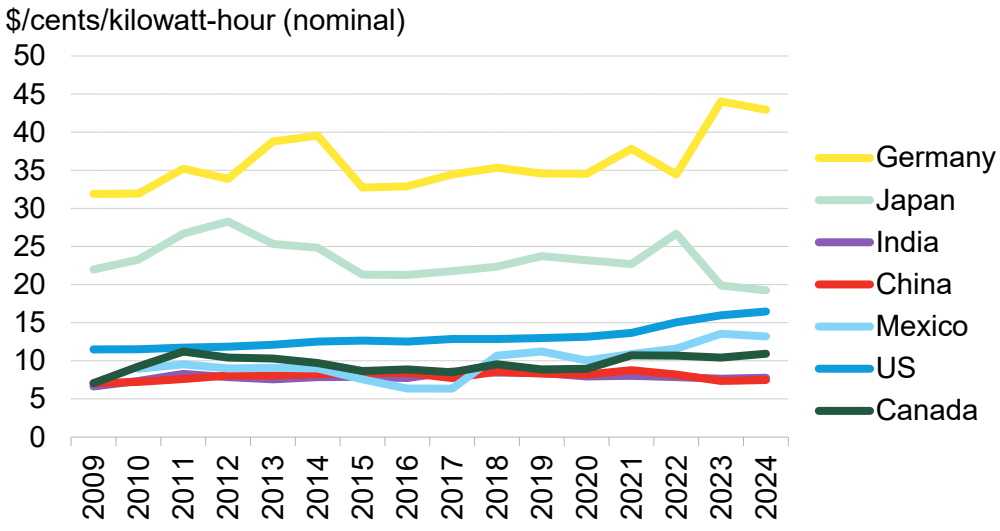
Source: BloombergNEF, US Energy Information Agency, Bloomberg Terminal. Note: All prices are in real 2025 USD. Retail power prices shown here are not exact retail rates but weighted averages across all rate classes by state, as published by the US Energy Information Administration. Retail prices are updated through October 2025. MISO is the Midwest region; PJM is the Mid-Atlantic region.

US energy overview: Average electricity rates, by country

Industrial power prices



Residential power prices

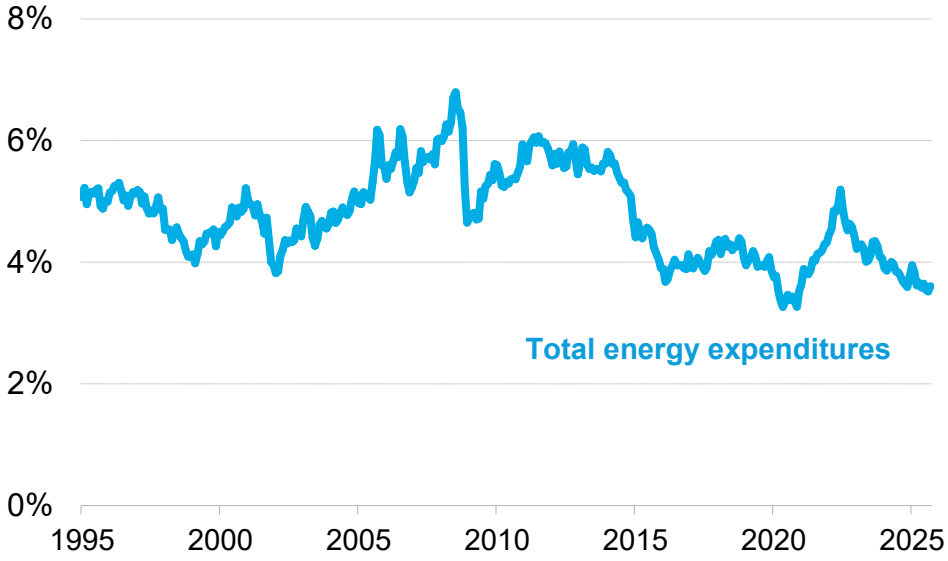


- Industrial power prices in the US remained low compared to other G-7 nations. In 2024, the last year for which there is complete data, only China and Canada saw prices lower than the US.
- While underlying factors like higher fuel prices drive some of the directional shift, the impact of exchange rates also plays a role. For example, industrial prices fell year-on-year in Japan, but the currency's weakness against the dollar makes the drop appear steeper in charts that compare prices using a common currency base. In 2024, the Chinese yuan, Indian rupee, and Japanese yen weakened against the dollar on average compared to 2023.
- Average residential power prices in the US rose 3% year-on-year in 2024, to 16 cents per kilowatt-hour (c/kWh), with only Japan and Germany reporting higher power costs for household use. While German power prices continue to feel the impact of the war in Ukraine; residential power prices slightly dropped to 43c/kWh from 44c/kWh in 2023. Germany, Japan and Mexico saw residential prices fall year-on-year. Over the decade to 2024, US residential prices rose 32%; only China, Japan and India saw decadal price declines in this period, of 9%, 21, and 1%, respectively.

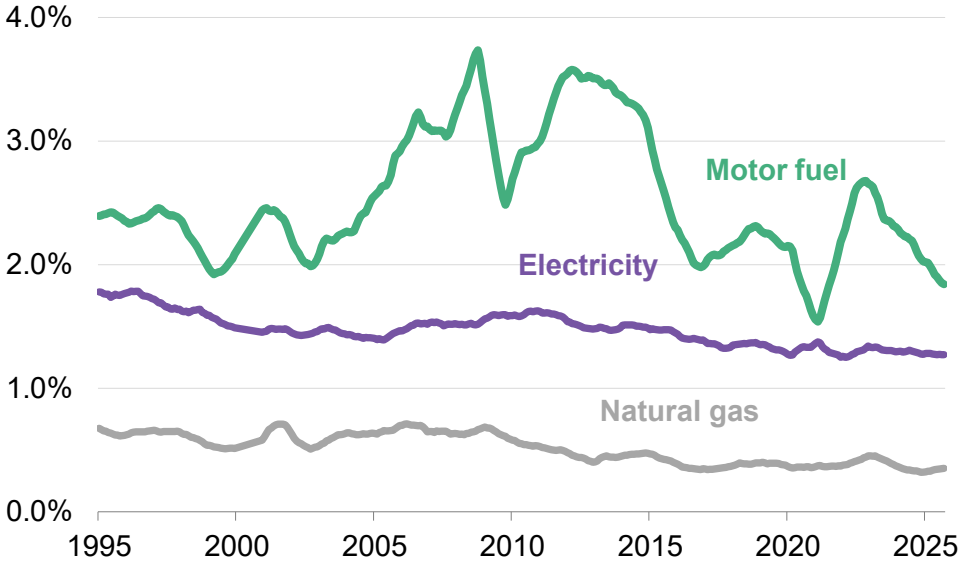
Source: BloombergNEF, government sources (US Energy Information Administration for the US). Note: Prices are averages (and in most cases, weighted averages) across all regions within the country. Japanese data are for the commercial and industrial (C&I) segment, and 2016 figures come from a different source than preceding years.

US energy overview: Energy as a share of personal consumption expenditures

Total energy goods and services as share of total consumption expenditure



Components of total consumption expenditure, 12-month rolling average

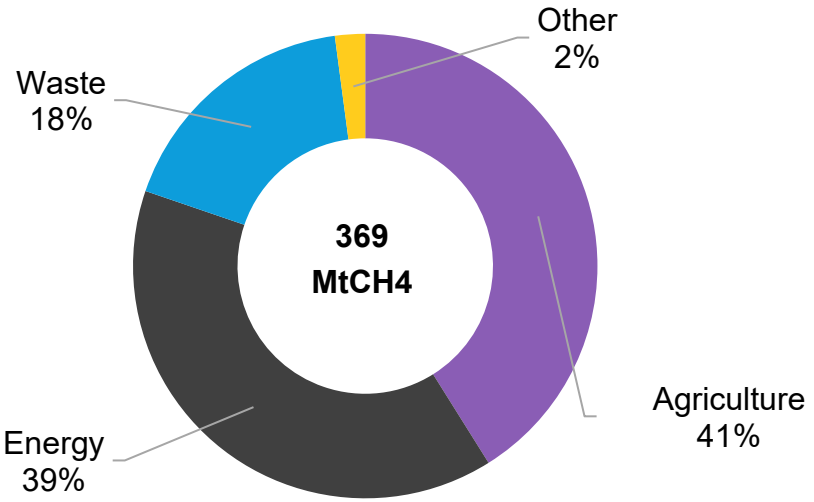


- Total energy expenditure as a share of personal consumption expenditure, including all energy goods and services, fell year-on-year in 2025. Energy spending accounted for 3.66% of total US personal consumption expenditures, down 0.2 percentage points from 2024.
- The share of motor fuel in personal expenditures dropped to 1.8% in 2025, down 0.18 percentage points from the year before, reflecting lower gasoline prices. While gasoline prices fluctuated over the course of the year, 2025 prices were lower than in 2024 on average.
- The combined share of electricity and gas cost as part of total household expenditure rose to 1.62%, from 1.60% in 2024. This marks a departure from recent years of declining natural gas prices and is consistent with strengthening power-sector demand, including growing electricity use from data centers. While retail power prices across the country vary by region, US consumers in 2025, on average, spent slightly less on electricity than during the year prior.

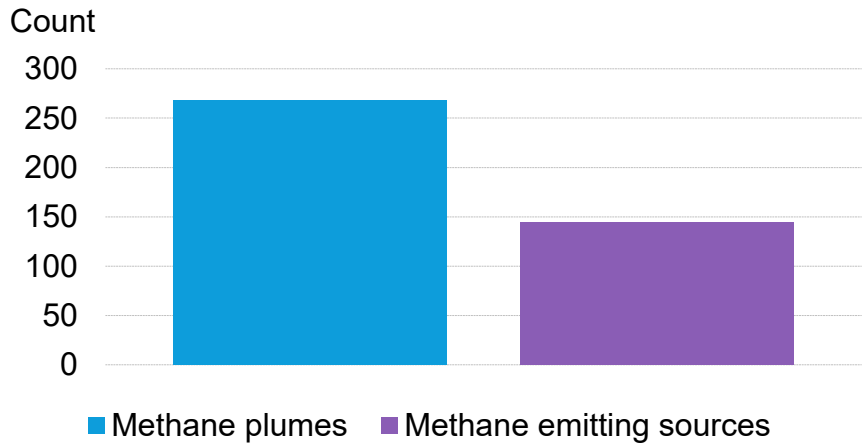
Source: Bureau of Economic Analysis "Table 2.4.5U. Personal Consumption Expenditures by Type of Product", BloombergNEF. Note: Values for 2025 are based on the latest monthly values from the Bureau of Economic Analysis (data available through September 2025).

US energy overview: Methane emissions

Global 2025 emissions by sector



2025 oil and gas methane leaks detected by satellites in the US

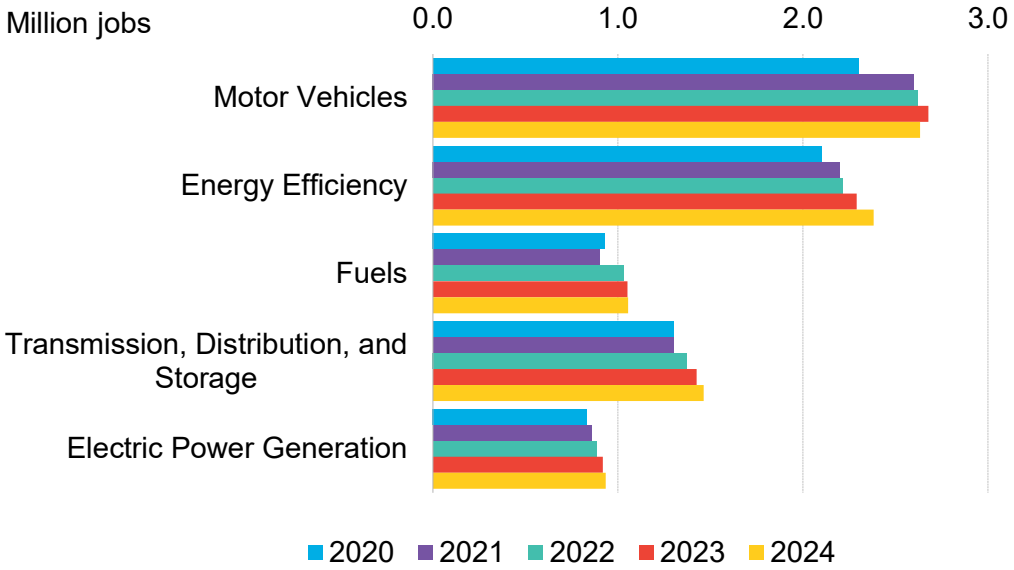


- Globally, methane emissions are estimated to have risen for a second year. According to data compiled by the International Energy Agency (IEA) this year, methane emissions from fossil fuels climbed by about 2% compared to the previous year. Emissions from other sectors such as agriculture also increased by 1% while waste related emissions dropped by 2%, according to agency estimates.
- In the US, satellite data compiled by the International Methane Emissions Observatory (IMEO) indicate that the oil and gas sector released 268 large methane plumes, known as 'super-emitters', from 144 emitting sources in 2025. The leak rates detected ranged between 179 kg/hr to 201 tons/hr.
- Policy signals have weakened. The Waste Emissions Charge for methane introduced under the Inflation Reduction Act was revoked in 2025, preventing the planned $900 tax from taking effect. Other environmental reporting initiatives such as the Greenhouse Gas Reporting Program (GHGRP), which covers close to 8,000 oil and gas facilities reporting on operational emissions, including methane, have also been proposed for rollback.
- At COP30, a venture was launched to establish 'methane response basecamps' using satellite data to rapidly identify and address major methane leaks, strengthening monitoring and enforcement across nine high-emitting states – including Texas, California and Pennsylvania.

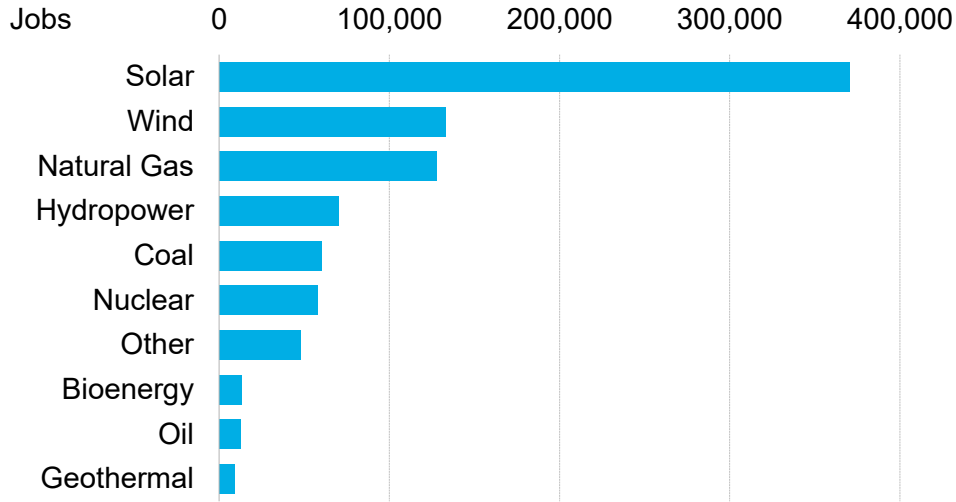
Source: BloombergNEF, International Energy Agency (IEA) Methane Tracker, International Emissions Observatory (IMEO). Note: MtCH4 is million metric tons of methane.

US energy overview: Jobs in select segments of the energy sector

Jobs in select energy segments, 2020-24



Jobs by power-generating technology, 2024



- The total number of workers employed in the energy sector grew by 1.2% to roughly 8.47 million in 2024, the last year for which there is complete data, according to an annual US Department of Energy report.
- Motor vehicles and component parts, a category that covers manufacturing, trade of, and maintenance work on vehicles, employed the most people of these energy sectors in 2024, at 2.6 million. Motor vehicles jobs have also seen the most growth over the last five years, growing 14.5% since 2020. Energy efficiency jobs like construction, manufacturing, and professional services for HVAC, energy-efficient appliances and advanced building materials, followed at 2.4 million people. The fuels sector, representing jobs in mining and extraction of coal, oil and gas, as well as renewable fuels production, employed 1.1 million people. Jobs in both energy efficiency and in fuels both rose about 13.4% each since 2020.
- Among power-generating technologies, solar continues to represent the largest share of total jobs, accounting for 37.4% of power-sector employment. Coal and nuclear are the only segments that have seen a year-on-year decrease in employment opportunities, down 4% and 1% from the prior year, respectively.

Source: US Department of Energy's 2025 Energy & Employment Report, BloombergNEF.

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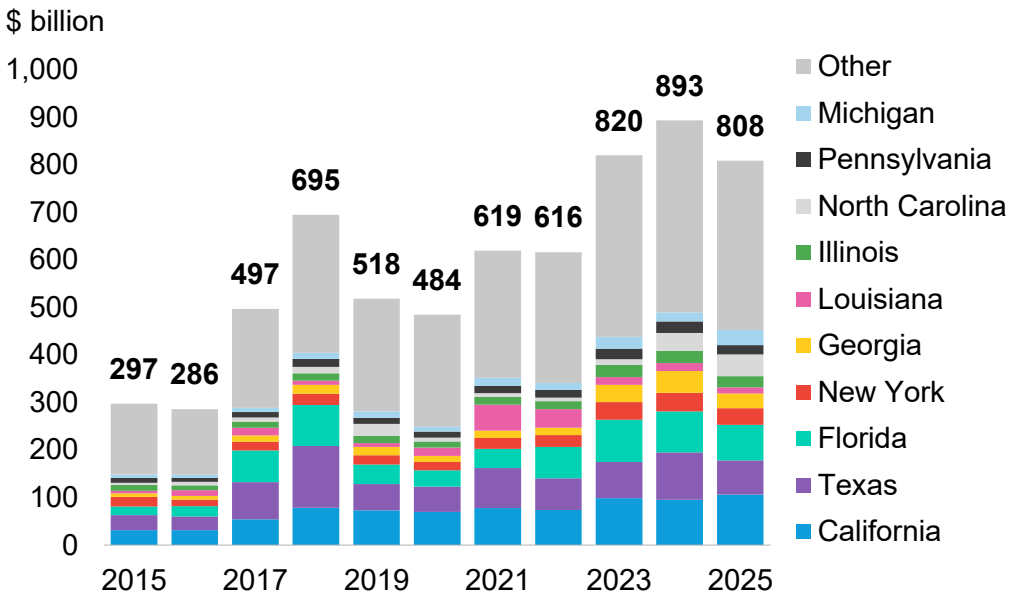
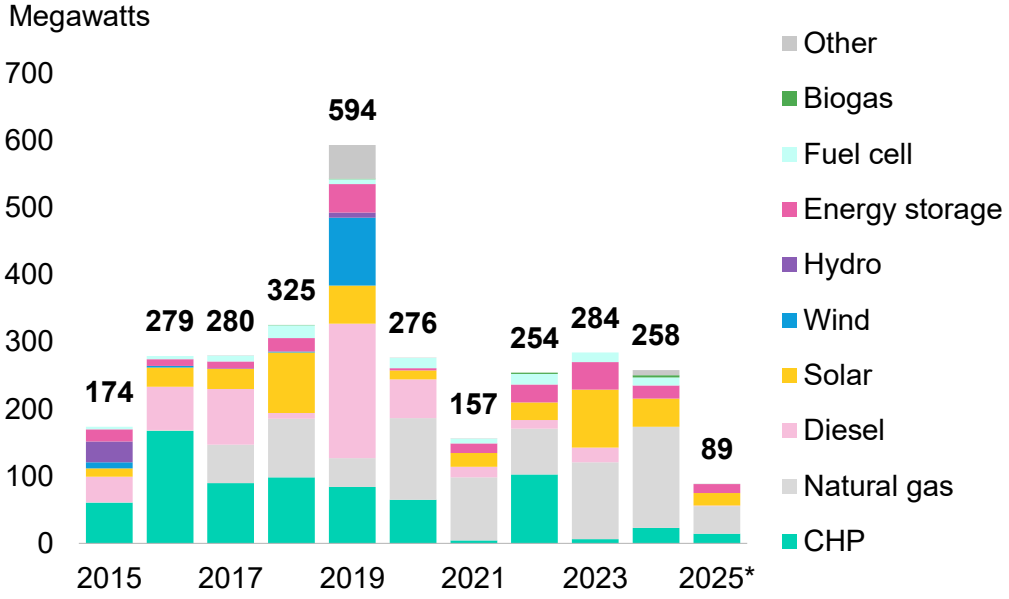
Policy: Infrastructure and resilience

US climate damages, by state



US microgrid installed capacity, by technology

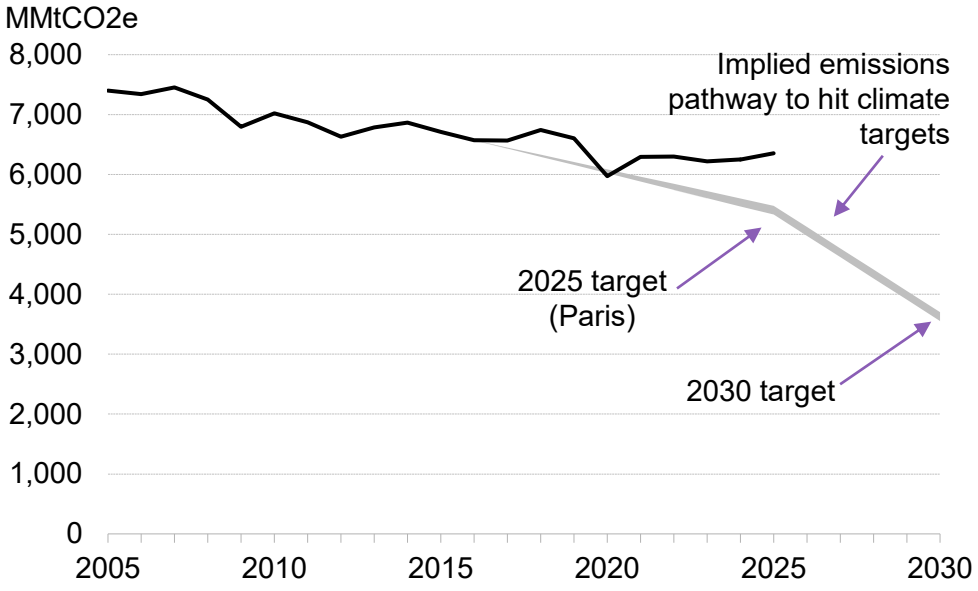


- The US saw $808 billion in climate-related financial impacts in 2025, including the cost of power outages, government recovery spending, subsidies for insurance and firefighting. That represents about 2.6% of GDP and an average annual growth in damage costs of 11% since 2015. Damages are highest in heavily-populated coastal states like California, Texas, Florida and New York, exposed to wildfires, hurricanes and flooding. The January wildfires in Los Angeles and ongoing recovery efforts from Hurricane Helene were particularly costly in 2025.
- Seven states adopted legislation in 2025 requiring electric utilities to submit wildfire mitigation plans to state regulators: Arizona, Idaho, Montana, North Dakota, Texas, Washington and Wyoming.
- Last year, 55 new microgrids sized 89MW altogether were brought online to ensure resiliency in the case of grid outages. Data collection is still ongoing, but initial figures appear to be much lower than in the past several years, as at least 250MW were installed each year 2022-2024. Natural gas powered 41MW, or about half of this new capacity, led by projects at a Baton Rouge hospital and a San Antonio grocery facility. Some 19MW of solar, 15MW of combined heat and power (CHP) and 13MW of storage were also brought online as part of microgrids across the country.

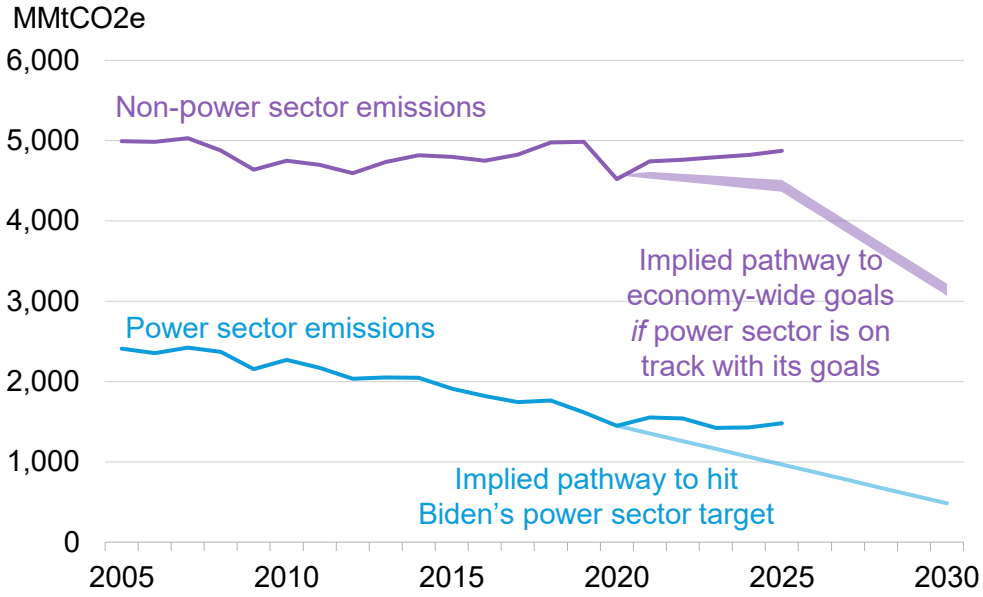
*Source: Bloomberg Intelligence, BloombergNEF, US Department of Energy, ICF. Note: Total climate damages include all categories tracked by BI, including government recovery spend, private property losses, crop damages, etc. For full dashboard see BI BESGGCLIMATEDAM <GO> and methodology MMDL 403209647 <GO>. *In microgrid chart, data collection for 2025 installations is still in progress. CHP stands for combined heat and power.*

Policy: US progress toward emissions goals

US economy-wide emissions



US emissions, power and non-power



- The US withdrew from the Paris Agreement in January 2025. However, targets that had been in place most of 2024 required the US to cut emissions by 50-52% from 2005 levels by 2030 under the framework of the Paris Agreement. That followed the original Paris pledge made under the Obama administration of reducing emissions by 26-28% below 2005 levels by 2025.
- Following the 2025 rise in emissions, the US is off track from these targets. Although emissions in the power sector have declined steadily over the past decade as coal generation has given way to natural gas, emissions rebounded by 3.6% over the past year. Emissions in the broader economy also rose by 1.1% in 2025, continuing a decade-long growth trend of 1.6%.
- For the US to remain on track for its post-2025 goals, power emissions would need to fall by 13% each year, a sharp reversal from the 3.6% increase recorded in 2025. Across the rest of the economy, emissions would need to fall at an annual rate of 7% through 2030, compared to the increase observed in 2025.

Source: US Energy Information Administration, Environmental Protection Agency, BloombergNEF.

Policy: Clean-tech tariffs

US implemented import tariffs affecting clean technologies, by invoked tariff authority

Tariff measure	Impacted geography	Impacted clean-tech sectors	Tariff rate
Base rate	All	All	0-3%
Section 201	All	Solar	14%
Section 301	China	All	25-100%
Section 232	All	Electric vehicles, battery, wind	25%
Anti-dumping (ADD) and countervailing duties (CVD)	Several	Solar, battery, wind	1-3,404%
International Emergency Economic Powers Act (IEEPA)	All	Solar, battery, wind	10-50%

- Clean-energy protectionism in the US intensified in 2025, though changes to import duties came in at a slower pace in the second half of the year. Tariffs went up as well as down, and most revisions increased the rate imposed on imports. But a non-trivial share reduced them, with trade agreements lowering tariffs from pre-deal levels that still sat far above rates at the start of the year. December marked the first month without a tariff hike since the Trump administration took office.
- Imported lithium-ion batteries notably experienced sharp tariff swings. Duties on non-EV batteries rose from 11% at the start of 2025 to a peak of 156% before ending the year at 31%. US reliance on Chinese batteries fell sharply: China accounted for just over 40% of EV and non-EV battery imports in the first half of the year, down from 69% in 2024. And battery tariffs keep rising: an increase planned under the Biden administration has pushed rates higher again this year. By contrast, EV batteries were subject to more stable – though persistently high – rates.
- If the Supreme Court overturns tariffs imposed by President Trump under the International Emergency Economic Powers Act (IEEPA), the administration would likely impose new duties to preserve current tariff levels. Any replacement measures, however, would be subject to statutory procedures and constraints on how high rates can be set. No such limits applied to IEEPA tariffs in 2025, allowing the administration to whipsaw rates with few formal checks.

Source: BloombergNEF. Note: Import tariffs as of Jan. 13, 2026. Measures labeled "All" may include market-specific exemptions. Coverage is limited to solar cells/modules, lithium-ion batteries, wind nacelles, steel wind towers, and passenger battery electric vehicles. Section 232 covers EV batteries; IEEPA covers non-EV batteries. Excludes not-yet-effective tariffs and ongoing probes, including ADD/CVD solar cases for India, Indonesia and Laos.

Policy: One Big Beautiful Bill Act (OBBBA) key details

OBBBA impact to select Inflation Reduction Act-era clean energy incentives

Credit or other funding	Post-OBBBA Status
48E (investment) and 45Y (production) clean energy tax credits	Phaseout accelerated beginning 2027, subject to stringent foreign entity of concern (FEOC) rules
45X production advanced manufacturing tax credits	Eliminated for wind components after 2027, gradual for solar/battery components, inverters, critical minerals; subject to stringent FEOC rules
30D (new passenger), 25E (used) and 45W (commercial) clean vehicle credits	Eliminated after September 30, 2025
30C alternative refueling (EV charging) tax credit	Eliminated after June 30, 2026
45V hydrogen production tax credit	Eliminated for projects beginning construction after December 31, 2027; not subject to as stringent of FEOC rules
45Q carbon capture tax credit	Intact through 2033, but focus shifts from storage to utilization and is subject to FEOC rules
25D and 25C residential clean energy and efficiency tax credits	Eliminated after December 2025
45L (home) and 179D (commercial buildings) efficiency tax credit	Ends for homes acquired or buildings beginning construction after June 30, 2026
45Z clean fuel production tax credit	Extended through end of 2029; subject to FEOC rules and modifies credit structure for sustainable aviation fuel (SAF)
Department of Energy Loans Programs Office, Office of Clean Energy Demonstrations, EPA Greenhouse Gas Reduction Fund	Partial or total elimination of unobligated funds

Source: BloombergNEF, One Big Beautiful Bill Act.

Key dates for incentives under OBBBA

2022

- **August 16, 2022:** Inflation Reduction Act passed to provide $369 billion in support for the energy transition through expanding and extending the Investment Tax Credit (ITC) and Production Tax Credit (PTC) for renewables, creating tax incentives for clean transport and clean industry and providing grants and loan guarantees.

2025

- **January 1, 2025:** Clean fuel production and technology-neutral clean electricity tax credits took effect.
- **July 4:** One Big Beautiful Bill Act (OBBBA) signed into law, accelerating the phaseout of clean energy and transport tax credits, introducing stringent Foreign Entity of Concern (FEOC) eligibility rules to claim credits, rescinding grant programs and expanding support for fossil fuels.
- **September 30:** Electric vehicle purchase tax credits expired.
- **December 31:** Residential clean energy tax credits for rooftop solar, energy efficiency improvements and heat pumps expired.

2026

- **January 1, 2026:** FEOC rules kick in for utility-scale wind and solar projects beginning construction.
- **February 12:** Interim guidance on FEOC rules released.
- **June 30:** EV charging tax credit and new building energy efficiency tax credits expire.
- **July 4:** Start of construction deadline for utility-scale wind and solar projects to claim tax credits without 2027 placed-in-service deadline.

2027

- **December 31, 2027:** Utility-scale wind and solar projects must be placed in service to claim tax credits if construction began after July 4, 2026. Wind component manufacturing credit expires. Last date to begin construction for hydrogen projects and claim credit.

2030

- **January 1, 2030:** Solar and battery components and inverters manufacturing credit begins phaseout.
- **December 31:** Latest utility-scale wind and solar projects that began construction by July 4, 2026 could commission and claim full tax credits under four-year continuity safe harbor.

2034

- **January 1, 2034:** Gradual phaseout begins for energy storage and technology-neutral clean electricity tax credits.

Policy: Changes to federal clean energy 48E and 45Y tax credits

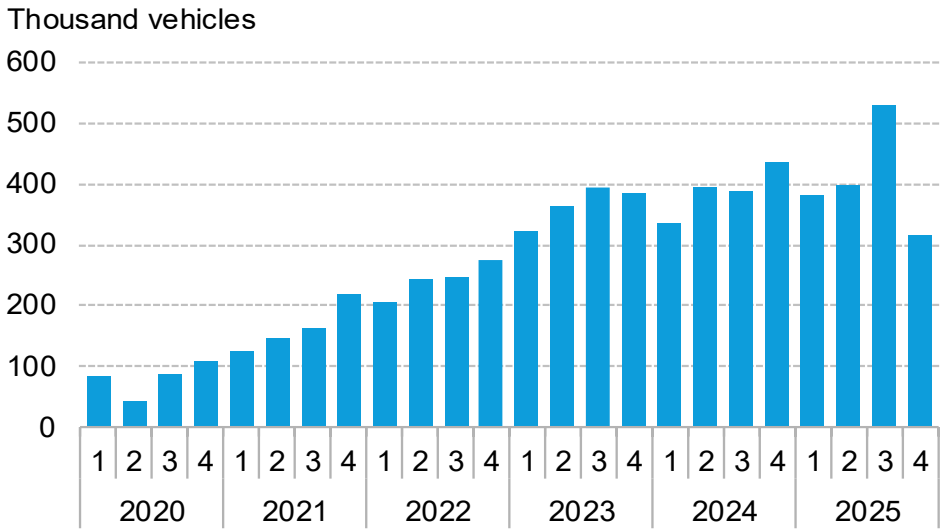
		Beginning of construction year											
Sector		**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**
Wind/solar	Credit available	100% of credit	100% credit (if in service before end of 2027)		No credit, unless project began construction before July 2026			No credit					
	Minimum non-FEOC content	0%	40%	45%	-	-	-	-	-	-	-	-	-
Energy storage (48E only)	Credit available	100% of credit									75% of credit	50% of credit	No credit
	Minimum non-FEOC content	0%	55%	60%	65%	70%	75%	75%	75%	75%	75%	75%	-
Qualifying net-zero facilities (i.e. nuclear, geothermal, hydropower, bioenergy, waste to energy)	Credit available	100% of credit									75% of credit	50% of credit	No credit
	Minimum non-FEOC content	0%	40%	45%	50%	55%	60%	60%	60%	60%	60%	60%	-

- With the passage of the One Big Beautiful Bill Act in July, several federal incentives are now on a rapid phaseout timeline. Utility-scale wind and solar projects can claim both investment (48E) and production (45Y) tax credits through 2027 but must meet increasingly stringent Foreign Entity of Concern (FEOC) rules preventing the use of suppliers from countries like China and Russia. Projects beginning construction after July 2026 will also need to be placed in service on the grid by the end of 2027.
- Energy storage fared much better under the new guidelines and can claim the full value of the 48E investment tax for projects beginning construction before 2034, but the FEOC standards are comparably steeper than for wind and solar, and US supply chains remain especially reliant on China for components like battery cells.
- Other clean firm power, like nuclear, geothermal, hydrogen and carbon-capture fitted turbines fare best of all. Tax credits extend through 2034 and FEOC standards are less stringent than for energy storage.
- While FEOC rules will disqualify many projects from sector-specific credits, the OBBBA restored full bonus depreciation benefits under the tax code, allowing for businesses to deduct the full value of new spending from their taxable income, which could be lucrative for all energy projects regardless of type.

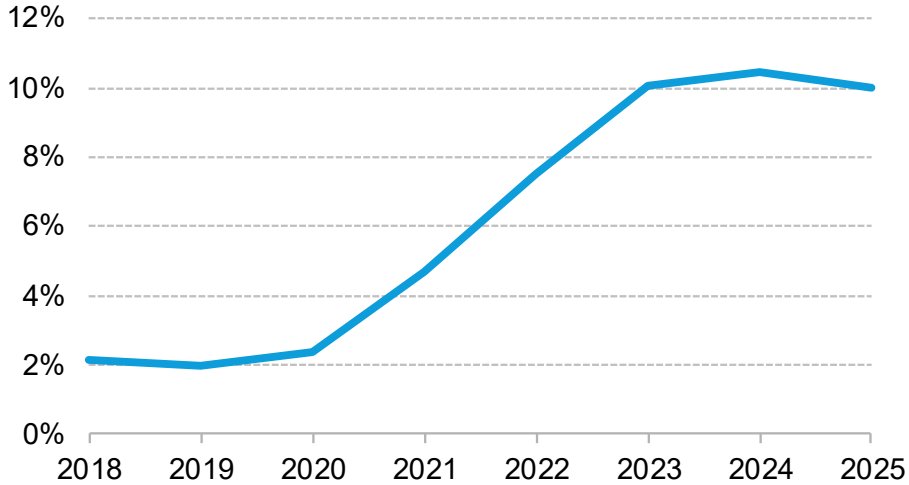
Source: BloombergNEF, Congress.gov. Note: Minimum non-FEOC content is the percentage of a project's manufactured product costs not attributable to prohibited foreign entities needed to qualify for credits.

Policy: EV incentive changes and adoption rates

US passenger EV sales by quarter



US EV adoption rate

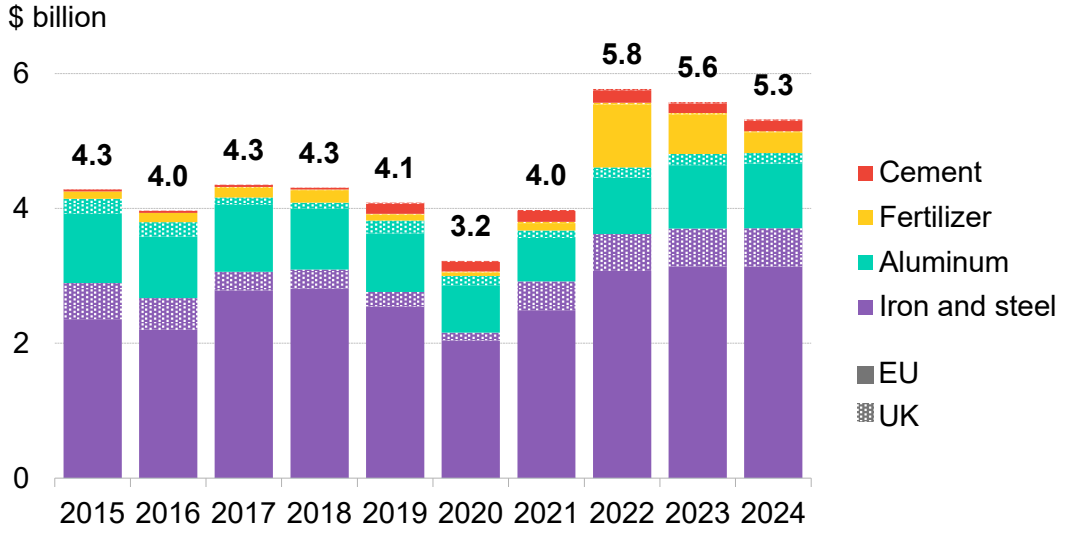


- Corporate fuel economy rules and California's Zero-Emission Vehicle regulation have been key supply-side drivers for electric vehicle adoption. However, in July 2025, the One Big Beautiful Bill Act eliminated the fuel economy penalty, removing financial consequences for automakers that sell low efficiency light-duty vehicles. This was followed by the proposed Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule III in December. The proposed standards are rolled back to 34.5 miles per gallon (mpg) by model year 2031, down from 50.4 mpg under the Biden administration. This change reflects the exclusion of EVs from baseline calculations beginning in model year 2022.
- In early 2025, the Trump administration revoked California's Advanced Clean Cars II waiver under the Congressional Review Act. The waiver allowed California to adopt stricter Zero-Emission Vehicle regulations, targeting 35% adoption by 2026 and 100% by 2035. Twelve other states and the District of Columbia also adopted the rule, together accounting for about 30% of US light-duty vehicle sales. In 2025, battery-electric and plug-in hybrid vehicles made up about 22.9% of car sales in California.
- On the demand side, the removal of the federal tax credit at the end of third quarter of 2025 led to a short-term spike in EV sales, followed by a dip in 4Q 2025. In total, EV sales reached about 1.6 million vehicles in 2025, 3.7% higher than in 2024. Additionally, automotive tariffs shrink the addressable market for non-US made EVs and increase cost pressure for automakers. Roughly 35% of the 1.5 million passenger EVs sold in the US were manufactured abroad in 2024, prior to the new tariffs.

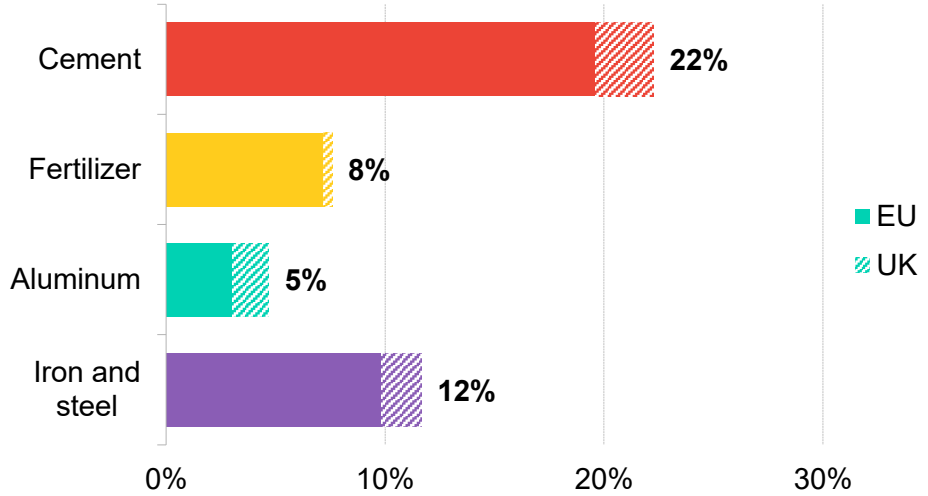
Source: BloombergNEF, MarkLines. Note: EVs include both battery electric and plug-in hybrid vehicles.

Policy: Carbon Border Adjustment Mechanism (CBAM)

CBAM-covered exports to the EU and UK



Share of US CBAM-covered exports to the EU and UK in 2024



- The European Union's Carbon Border Adjustment Mechanism (CBAM) entered its implementation stage on January 1, 2026, while the UK's similar scheme is due in 2027. The measures aim to protect European industrial competition by ensuring imported products face carbon costs equivalent to what domestic producers pay. Covered sectors include imports of iron and steel, aluminum, fertilizer, cement, hydrogen and electricity. For exporters to the region, these policies impose new compliance costs and potentially cut into margins for carbon-intensive exports, while creating an incentive to decarbonize production.
- The US has no national carbon price or federal Emissions Trading System (ETS), meaning its exporters receive no carbon-price credit under the EU CBAM. While several states run cap-and-trade systems, including California, these subnational programs are not recognized for CBAM.
- Some 11% of US CBAM-covered products have historically been exported to the EU and UK. This accounts for just 0.2% of US overall global exports. Sector exposure is concentrated in iron and steel, of which the US exported $3.1 billion to the EU and $0.6 billion to the UK in 2024. While the value of cement exports is comparatively low at $115 million, the EU and UK together represent 22% of the destinated value of these products.

Source: BloombergNEF, Sinoimex. Note: Does not include hydrogen and electricity exports.

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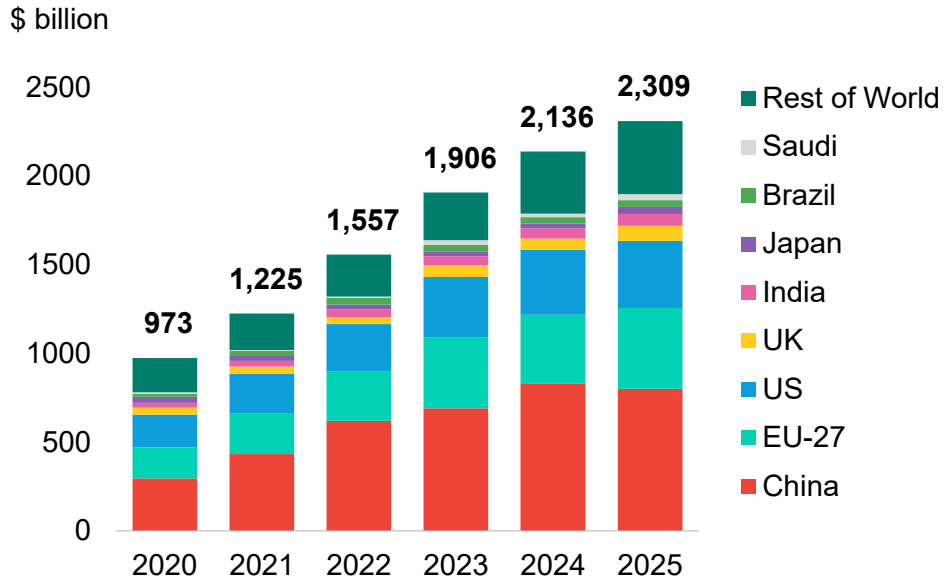
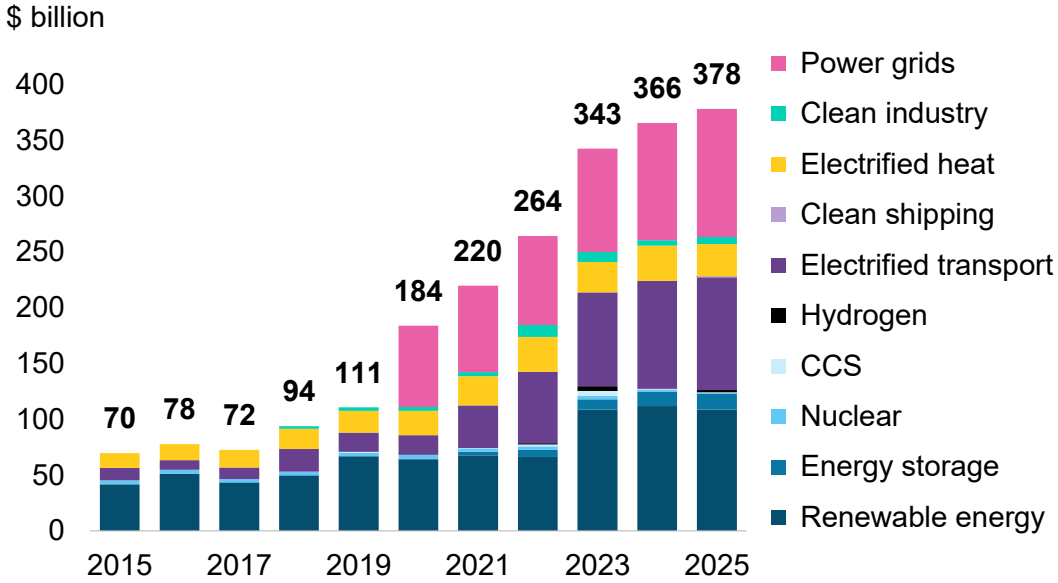
Finance: Energy transition investment

Global energy transition investment



US energy transition investment

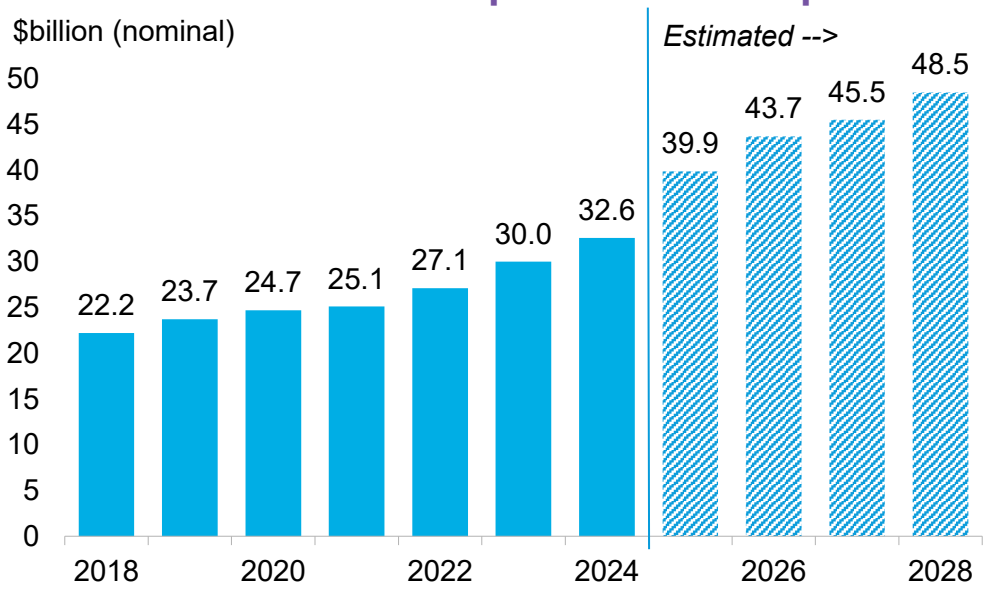


- Globally, $2.3 trillion was spent in 2025 on technologies that are accelerating the decarbonization of the global economy. China continues to invest the most, accounting for $800 billion of the funds deployed. That's equivalent to about 4.1% of China's estimated 2025 GDP. US energy transition investment totaled $378 billion or about 1.2% of 2025 GDP.
- US transition spending inched up 3.5% from 2024, despite a tumultuous policy environment complete with subsidy rollbacks and trade barriers. However, that rate of growth has slowed significantly in recent years. For comparison, following the 2022 passage of clean energy tax incentives in the Inflation Reduction Act, year on year growth hit 30% in 2023.
- The 2025 growth in US investment was driven by spending on grids and electrified transport. As electricity demand surges with AI data center build, grid investment jumped 9.5% in 2025 to $115 billion. Electric vehicles and charging saw another record year of investment, in part due to a short-term push to take advantage of the $7,500 per-vehicle federal tax credit prior to its end in October 2025. Meanwhile, clean energy investment remained approximately level and renewable energy specifically slumped 2.9% as the industry experienced policy setbacks from permit cancellations.

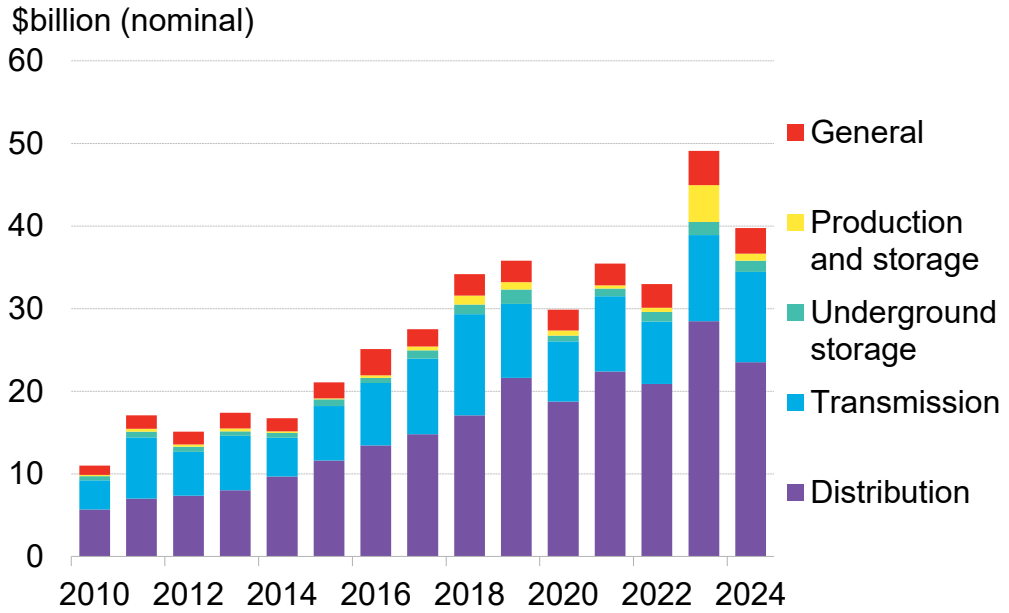
Source: BloombergNEF, World Bank. Note: Start years differ by sector, but all sectors are present from 2020 onwards. Most notably, nuclear figures start in 2015 and power grids in 2020. CCS refers to carbon capture and storage.

Finance: US midstream infrastructure investment

US electric transmission investment by investor-owned utilities and independent developers



US natural gas utility construction expenditures

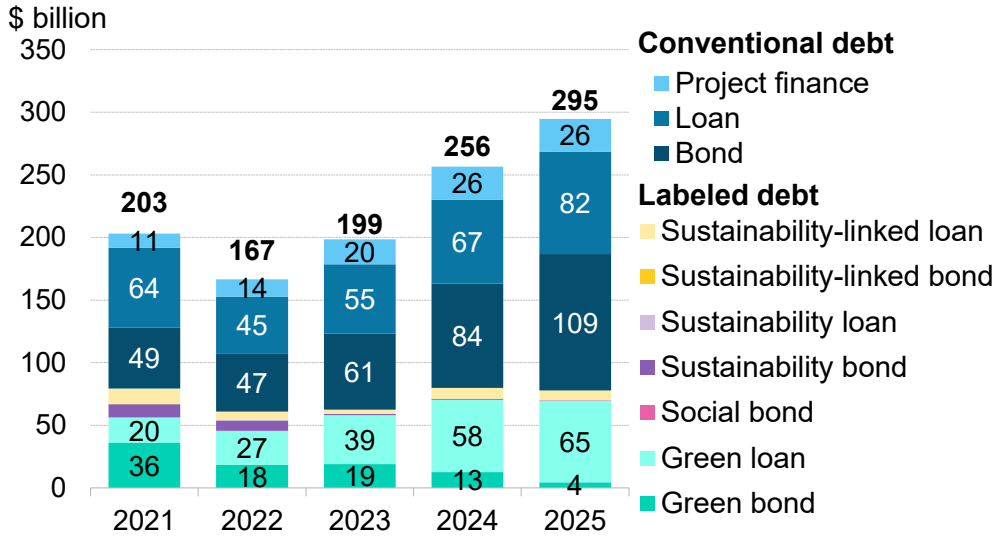


- Investor-owned utilities (IOUs) and independent transmission developers spent $32.6 billion on electric transmission infrastructure in 2024, according to the Edison Electric Institute (EEI). This was up 9% from the year before and far exceeded previous forecasts. The estimate of future investment over 2024-27 was also revised upwards, reaching $48.5 billion in 2028. This was driven by higher expectations of load growth to support new data centers.
- Midstream gas utility construction expenditures decreased by $9.4 billion in 2024 from the year prior, to $39.7 billion, according to the last year of complete data collected by the American Gas Association. An 81% decrease in production and storage investment, 26% decrease in general investment, 17% decrease in distribution investment and 13% decrease in underground storage investment led to the overall decline in natural gas utility expenditures. Transmission investment was the only category to increase, rising 5% year over year.

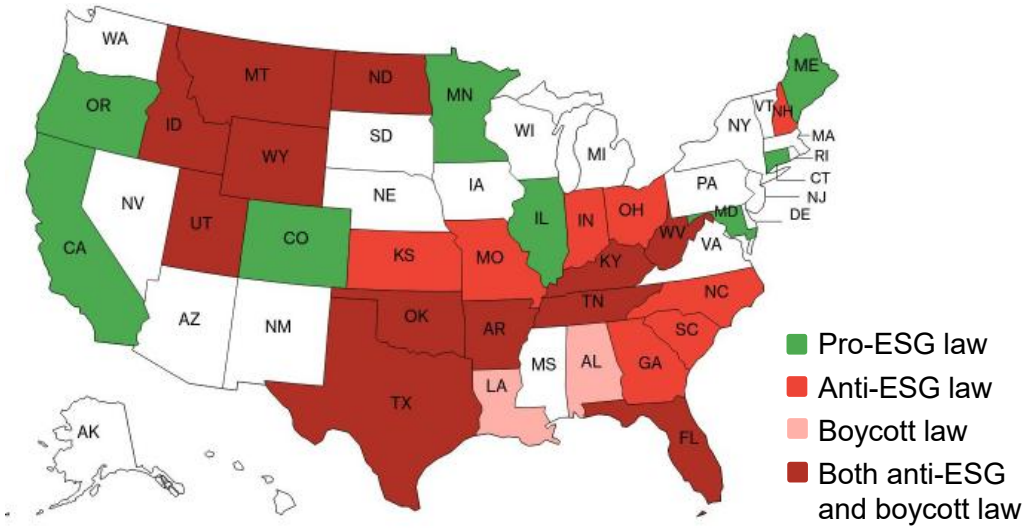
Source: Edison Electric Institute, American Gas Association (AGA), BloombergNEF. Note: Gas expenditure values reflect figures reported to the AGA by companies across the supply chain, including transmission companies, investor-owned local distribution companies and municipal gas utilities. "General" includes miscellaneous expenditures such as the construction of administrative buildings.

Finance: US sustainable debt and sustainable finance policy

Energy transition debt in the US



US ESG laws

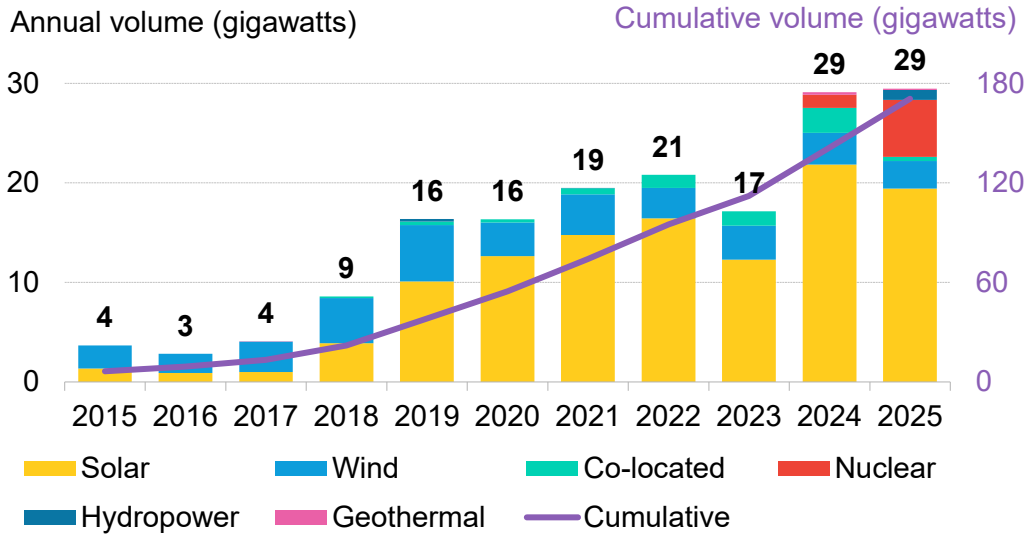


- Debt financing for the energy transition grew 15% year on year in the US to $295 billion in 2025. The increase was driven by higher debt issuance from utilities, particularly those with large grid or nuclear assets such as Dominion Energy, Constellation Energy and Duke Energy.
- The share of financing that was explicitly 'labeled' – formally earmarked for a green purpose or linked to a sustainability target – fell from 31% in 2024 to 26%. That decline likely reflects fading pricing benefits from labeled instruments and persistent anti-environmental, social and governance (ESG) sentiment. To capture transition-related funding more fully, we also include general-purpose financing raised by companies with material exposure to the energy transition, with deal values prorated by the proportion of each issuer revenue derived from relevant transition activities.
- Anti-ESG sentiment intensified at both the federal and state levels in 2025. The Securities and Exchange Commission repealed its company sustainability reporting rules and dropped its draft ESG fund disclosure rule. At the state level, Ohio, Missouri and four other states passed anti-ESG regulation. Since 2020, some 22 states have passed some form of anti-ESG legislation. California's emissions disclosure and climate-risk reporting rules face legal challenges, but companies doing business in California are still expected to report greenhouse gas emissions by mid-2026.

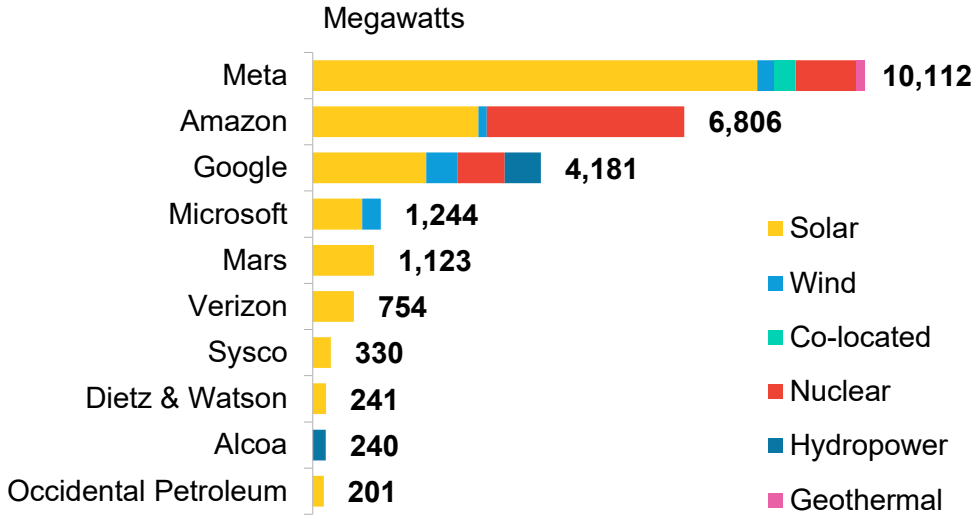
Source: BloombergNEF, Bloomberg Terminal, US state legislatures. Note: Updated as of January 7, 2026. Excludes bills or resolutions. Pro-ESG laws include fossil-fuel divestment laws. Issuance based on market of risk. Non-energy transition related labeled debt was excluded.

Finance: Corporate clean energy procurement

Clean power contracted by corporations, by sector



Top corporate clean energy buyers in 2025

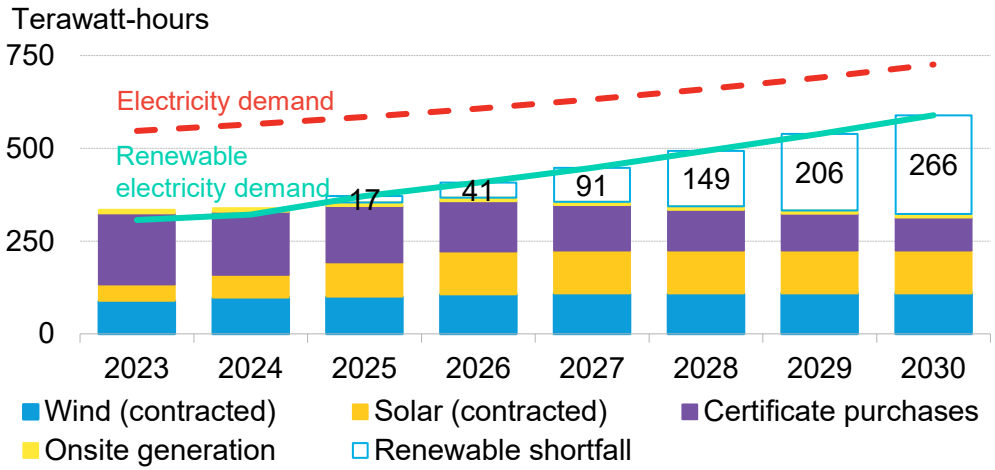


- BNEF tracked a record 29.5 gigawatts (GW) of corporate power purchase agreements (PPA) announced in the US in 2025 – slightly exceeding the prior year's 29.1GW record. While average deal sizes in 2025 were 19% larger year-on-year, at 189MW, less deals were signed, at 156, compared to 183 in 2024. Solar's share fell in 2025, making up 66%, or 19.4GW of all transactions from 21.8GW (74%) the year prior. The rise of nuclear and hydro offset this drop, responsible for 5.7GW and 1GW of total dealmaking in the US in 2025, respectively.
- Technology giants, including Meta, Amazon, Google and Microsoft, doubled down on the AI race and were responsible for 76% of overall deal activity at 22.3GW. In their hunt for clean, baseload power for their data centers, these hyperscalers have signed contracts for novel technologies like enhanced geothermal, small modular reactors and nuclear fusion. Google also secured the largest-ever hydropower PPA with Brookfield, starting with 665MW in Pennsylvania with the potential for up to 3GW.
- Meta became the largest US corporate clean energy buyer in 2025 for the first time signing more than 10GW of deals. The social media giant contracted nearly double its previous 2024 record of 4.9GW. While Amazon fell to second place, the company bought a record 3.6GW of nuclear power from just two deals.

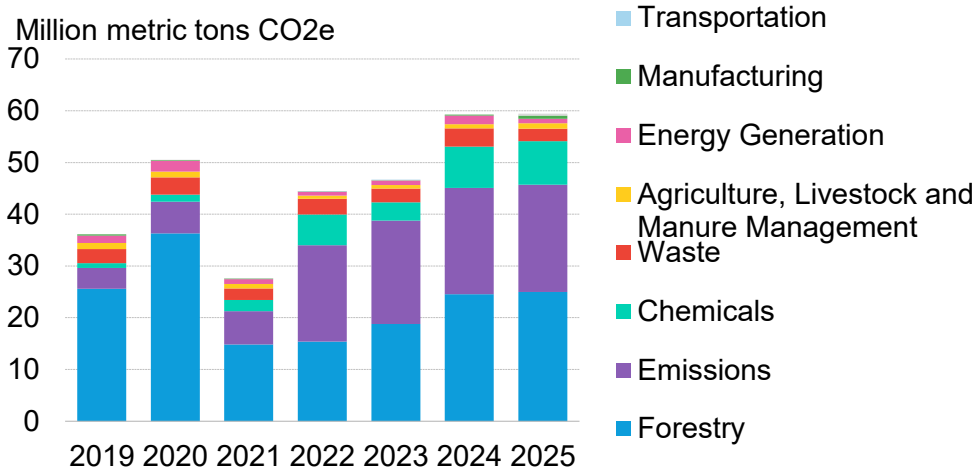
Source: BloombergNEF. Note: Charts show offsite corporate PPAs only. Figures are subject to change as new information is made available.

Finance: Voluntary markets for corporate decarbonization

Clean electricity supply and demand for RE100



Annual offset issuance in the US, by sector

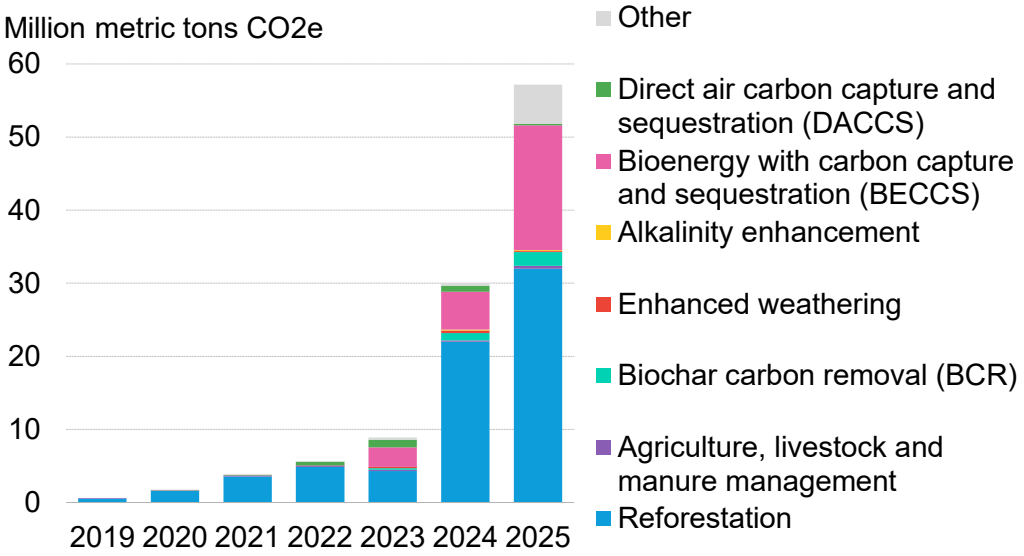


- The number of companies pledging to offset 100% of their electricity consumption with clean energy as part of the RE100 reached 490 in 2025. These companies consume 565TWh of electricity annually based on their latest disclosures. BloombergNEF estimates that the electricity demand from the current group of RE100 members will reach 726TWh in 2030 – more than the annual power consumption of Canada. Current RE100 members will need to purchase an additional 266TWh of clean electricity in 2030 to meet and maintain their goals. While the US remains the initiative's biggest market with 108 total members, just four new US-headquartered companies pledged to consume 100% renewable energy since 2023.
- Companies with ambitious net-zero emissions targets and exposure to hard-to-abate and supply chain emissions will be unable to meet their goals through renewable procurement alone. For many, voluntarily purchasing credits for carbon offsets will help fill this gap. The carbon credit market underwent reform and standardization in 2025 after facing heavy scrutiny around its environmental integrity. The US issued 27% of global supply of carbon credits in 2025, more than any other market. Nearly half were 'forestry' projects that reduce emissions through forest management, accounting for 25 million credits.

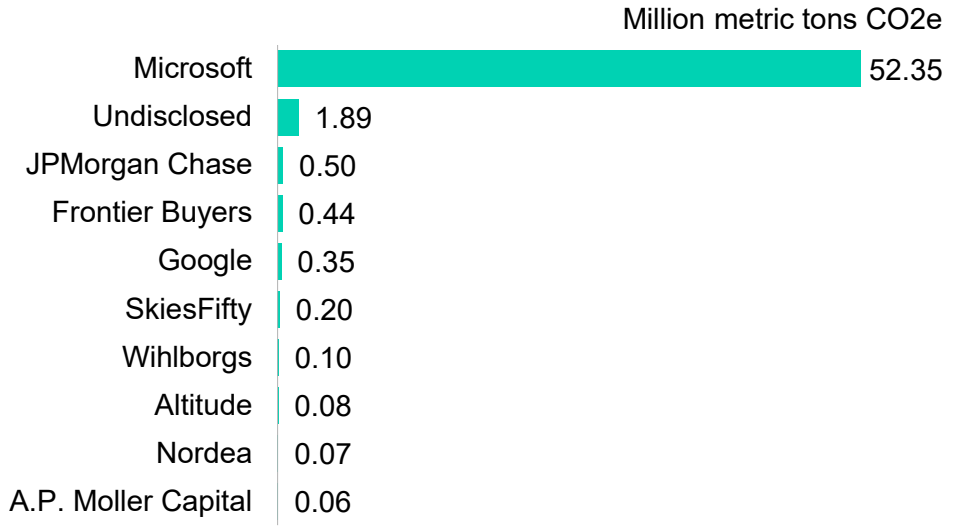
Source: BloombergNEF, Bloomberg Terminal, Carbon Disclosure Project, company filings. Note: Certificate purchases are assumed to step down 10% each year. Onsite generation and contracted renewable purchases remain flat through 2030. Electricity demand and renewable electricity demand do not intersect in 2030, as some companies have targets extending out past 2030. Data as of December 18, 2025. CO2e refers to carbon dioxide equivalent.

Finance: Carbon removal demand

Annual purchased volumes of carbon removals, by type



Top buyers of carbon removals in 2025

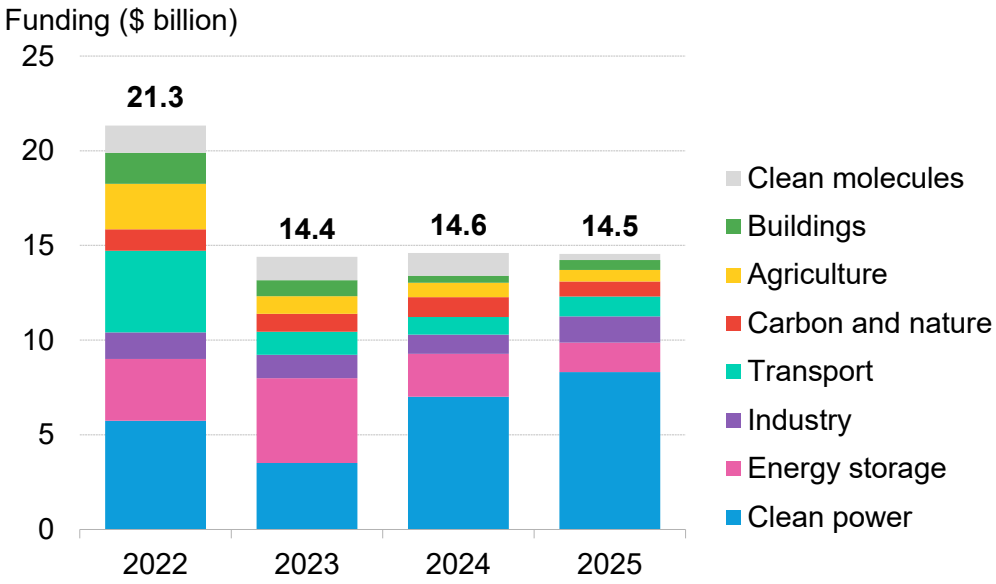


- The Science Based Targets initiative and European governments have all integrated carbon removals into their decarbonization frameworks. These credits are recognized for their permanent and durable emission reductions.
- Demand for carbon removals reached 57 million metric tons in 2025, roughly double 2024 levels. Reforestation remained the largest source, accounting for 56% of credits, but bio-based carbon removal technologies also scaled up to about a third of the market. In 2025, 33% of purchased removal credit, or around 19 million metric tons, came from bio-based approaches.
- Most of the demand (96%) was contracted via offtake agreements, led by Microsoft, which purchased 52 million credits in 2025.
- The carbon removals market is likely to grow, especially in Europe. The EU Emissions Trading System might allow EU-based removals in the market, mimicking the Greenhouse Gas Removal policy in the UK, which aims to integrate UK-based carbon removals in the UK ETS.
- SBTi is also lobbying for an uptake in carbon removals by asking companies to set carbon removals targets as part of their decarbonization pathways. BloombergNEF estimates that carbon credit demand in a removals-only scenario would reach 1.9 billion tons of CO2e in 2030, and an annual market value of $241 billion. Meanwhile, the GHG Protocol has begun the process of addressing land use removal credits with a standard to take effect in 2027.

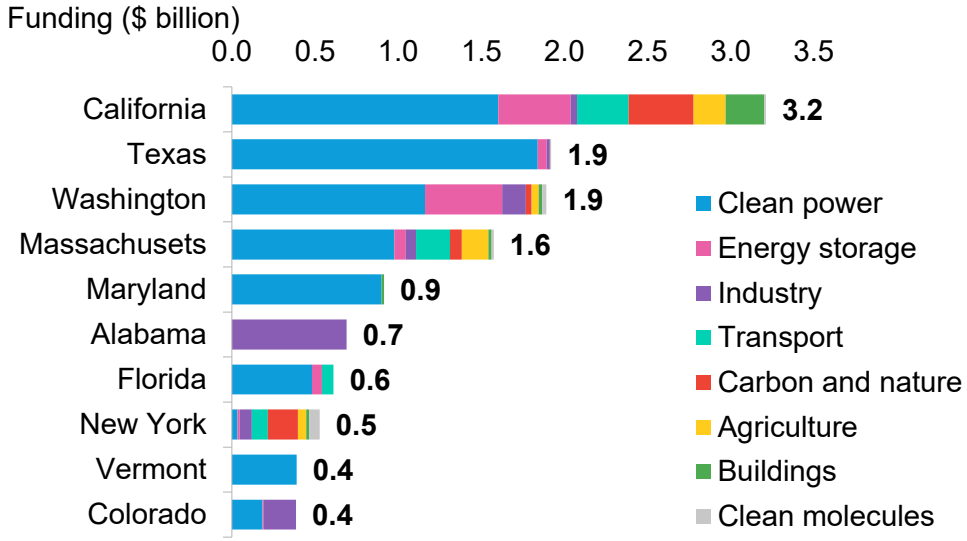
Source: BloombergNEF, CDR.fyi, Verra, Gold Standard, American Carbon Registry. Note: Data includes both direct retirements and future offtake agreements.

Finance: Venture capital/private equity investment in climate tech

Climate-tech VC/PE investment, US



States with the most funding for climate-tech VC/PE investment, 2025



- US climate startups raised $14.5 billion via venture capital and private equity in 2025 across 232 deals. Growth was relatively flat for the second year in a row but the region continued to be the leader for venture financing, raising $12.3 billion more than the next largest market, China. This is because China is home to more growth-stage firms that leverage public equity markets while the US is defined by a deeper pool of early-stage firms and available capital. The US proved to be more resilient compared to the global climate-tech venture market, which saw funds drop 16% year-on-year.
- Startups within clean power continued to be the largest drivers of funding for the second consecutive year, making up nearly 60% of the funds. Over half of the clean power funding came from nuclear companies, which raised $4 billion driven by data center developers' growing need for clean, firm power. Energy storage and industry followed in second and third place.
- After a banner year for clean molecules, coming from e-fuels startups, funding within the sector dropped 73% to $321 million, the lowest since BNEF started tracking this data. Funding for agriculture and buildings continue to make up a small share of the fundraising, at only 4%. Firms in California raised the most equity at $3.2 billion, 168% more than the second-largest state, Texas. Massachusetts fell to fourth place from second.

Source: BloombergNEF, Bloomberg Terminal MA< GO>. Note: VC/PE is venture capital and private equity.

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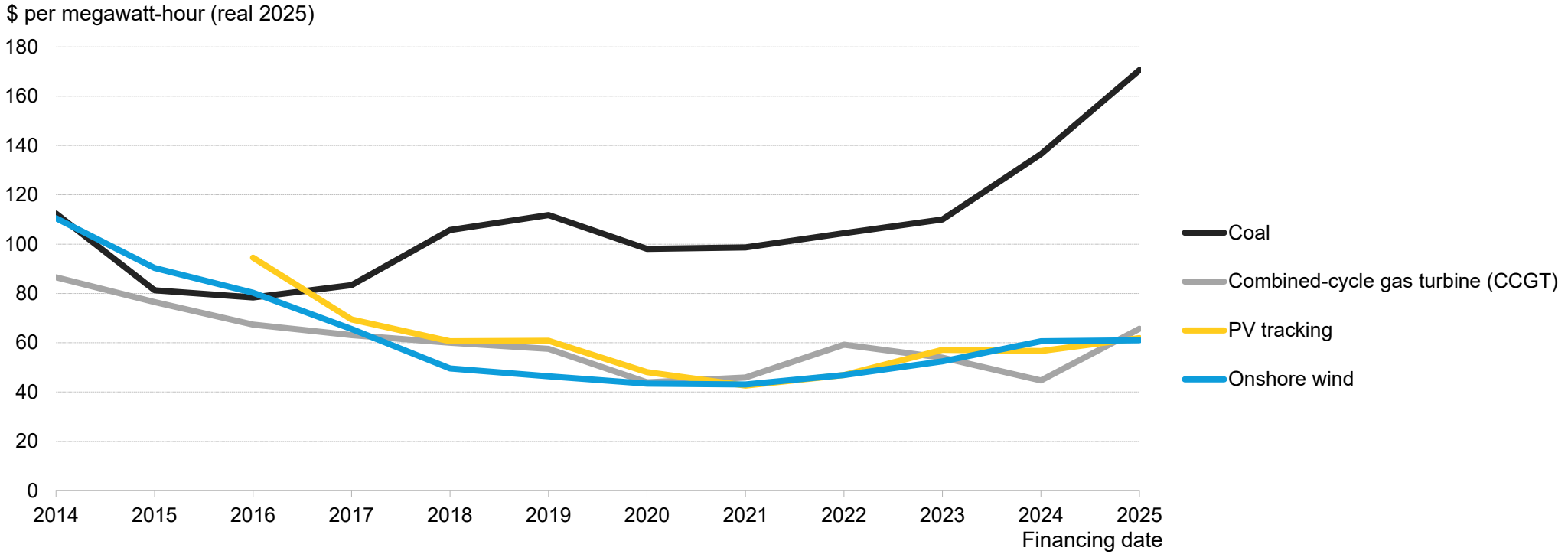
Economics: Benchmark US levelized costs of electricity (LCOE), 2014-2025

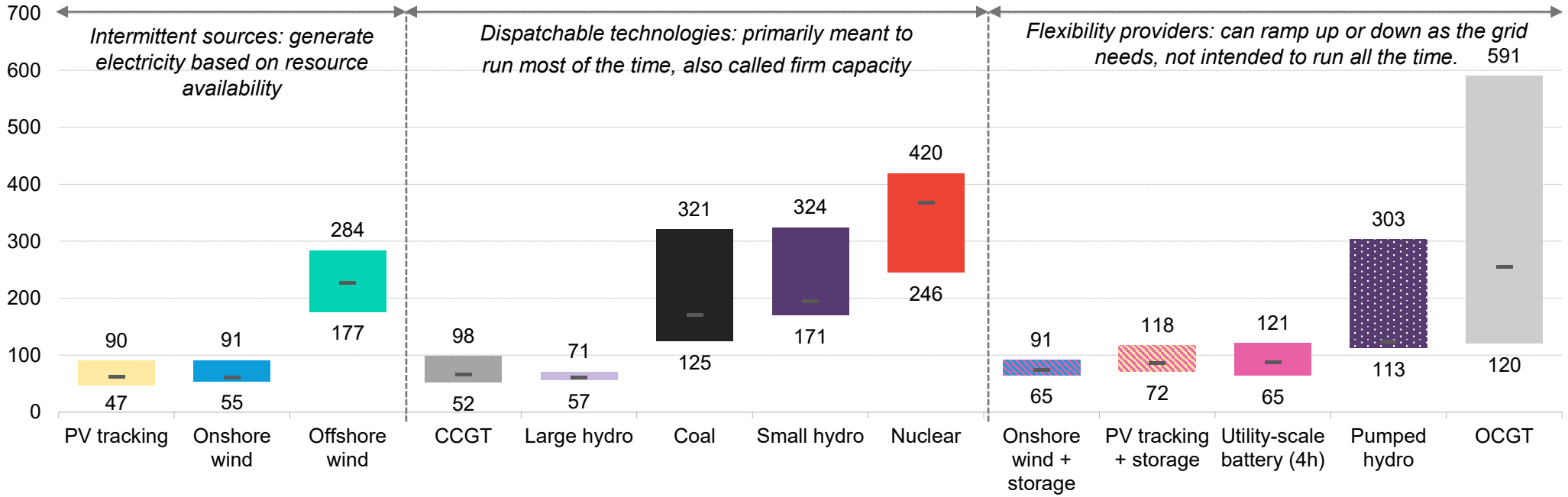


- BNEF estimates the levelized cost of electricity (LCOE) for the typical onshore wind farm financed in 2025 in the US was $61/MWh (real 2025). This represents a 9% increase in real terms between 2024 and 2025. While substantial, this is lower than the 22% increase in 2023, which represented the largest rise in costs recorded since BNEF began tracking them in 2014. The LCOE for a solar farm with trackers increased by 1% to also reach $61/MWh. Costs have been rising since their 2021 low of $43/MWh, thanks to higher interest rates and operation & maintenance costs.
- The LCOE benchmark for combined-cycle gas turbines (CCGT) is $66/MWh – a 22% increase since 2023. BNEF estimates a doubling in capex over this period as demand has surged.
- The LCOE for coal increased by 25% to $171/MWh in 2025. This reflects higher equipment costs and an increase in the cost of capital, driven by both macroeconomic conditions and stranded asset risk. The current estimate is 2.6x higher than that of a CCGT plant.

Source: BloombergNEF. Note: Subsidies and tax credits are excluded. PV refers to photovoltaic solar. CCGT refers to combined-cycle gas turbine.

Economics: US LCOEs for intermittent sources, firm capacity and flexibility providers

$ per megawatt-hour (real 2025)

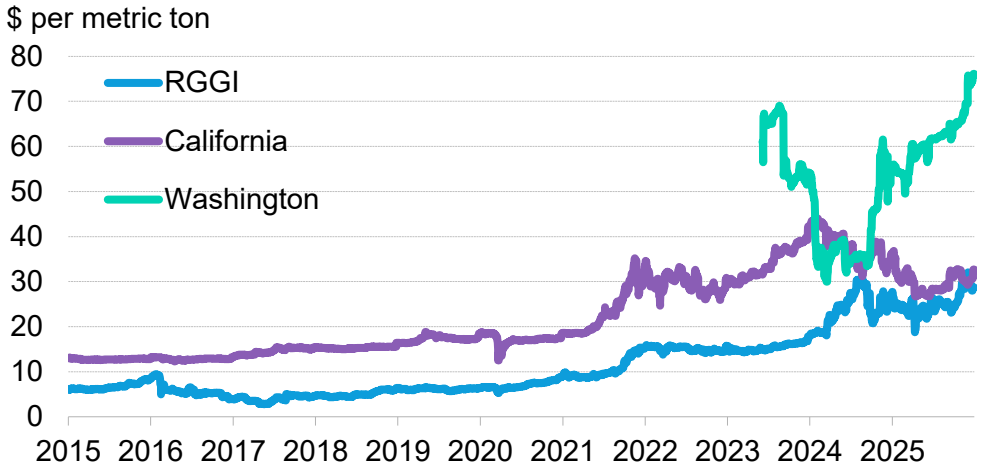


- Providing power to the US population requires a suite of technologies that generate electricity in a variety of ways. Amongst intermittent sources of generation, BNEF estimates that onshore wind and a solar farm with trackers are the cheapest options, costing $61/MWh in 2025. While onshore wind is cheap to build, offshore wind costs almost four times more at $227/MWh.
- Combined-cycle gas turbine plants were the cheapest option amongst dispatchable technologies in 2025, with best-in-class projects costing $52/MWh and the typical project costing $66/MWh. However, the upfront cost of building gas-fired power plants in the US has doubled over the last two years driven by a surge in demand for turbines to power data centers. This has increased wait times for turbines, and deteriorated the economic advantage they held over other technologies. Once tax credits are factored in, the onshore wind LCOE is below that of gas. Cost overruns and project delays means that the typical nuclear plant cost almost 6 times more on a megawatt-hour basis.
- The benchmark levelized cost of paired onshore wind-plus-battery (four-hour) systems is $74/MWh, while solar-plus-battery (four-hour) is $85/MWh. In comparison, peaking gas plants (open-cycle gas turbines, or OCGTs) have a higher benchmark LCOE of $255/MWh.

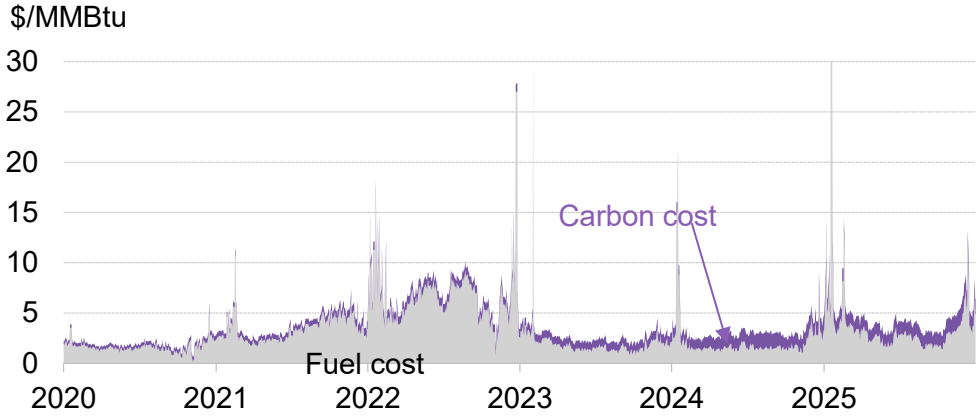
Source: BloombergNEF. Note: Subsidies and tax credits are excluded. The LCOE range represents a range of costs and capacity factors. Battery storage systems (co-located and standalone) presented here have four-hour storage. In the case of solar- and wind-plus-storage, the range is reflective of the size of the battery relative to the power generating asset (25-100% of total installed capacity). PV is photovoltaic solar, CCGT is combined-cycle gas turbine, OCGT is open-cycle gas turbine.

Economics: Carbon markets

US carbon prices



New York's fuel and carbon costs for gas-fired generation



- Carbon prices are playing a bigger role than ever in the US power sector, due to their impact on the cost of natural gas, which is the key fuel for generating electricity. This has eaten into the previously strong correlation between the cost of natural gas and electricity, leading traders focused on US coastal power regions to essentially bet on carbon prices as well.
- The Northeast US has particularly seen a surge of carbon price influence. New York, for example, is part of RGGI, a carbon market covering power emissions across 10 states in the northeast of the country. During 2025, the price of Regional Greenhouse Gas Initiative (RGGI) shattered records, reaching $26.73 per short ton ($29.48 per metric ton) in the December auction. As a result, the state's carbon costs rose to the equivalent of 37% of fuel costs in 2025, up from 23% in 2020, as the average price of RGGI emission allowances more than tripled over that period. However, the share of fuel cost from carbon did drop 61% compared to last year, due to the average gas price almost doubling to $3.63 per million British thermal units in 2025 as demand increases.
- US carbon prices will remain in the spotlight as political discussions around affordability progress. While carbon prices have risen due to reforms curbing supply, gas prices remain a larger share of overall fuel prices and display more volatility.
- Ultimately, carbon prices are designed to provide a stable incentive that accelerates the shift toward lower-carbon power generation and efficiency. As clean energy becomes a larger share of the power mix, the role of carbon pricing will naturally diminish, since only fossil generation remains subject to the cost.

Source: Intercontinental Exchange, BloombergNEF. Note: BNEF uses 0.053075 as the gas fuel intensity (metric tons of CO2 equivalent per million British thermal units (MMBtu)). RGGI refers to the US Regional Greenhouse Gas Initiative. MMBtu refers to million British thermal units.

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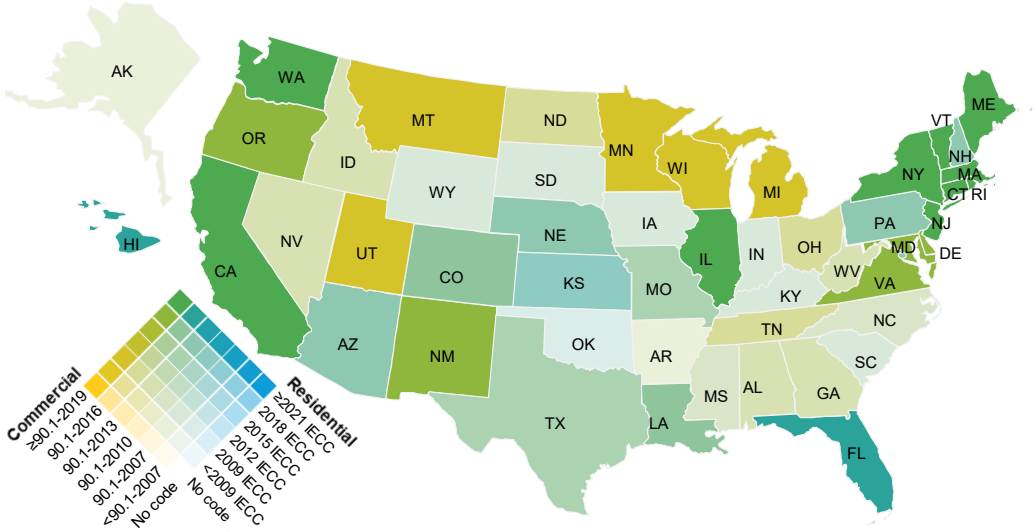
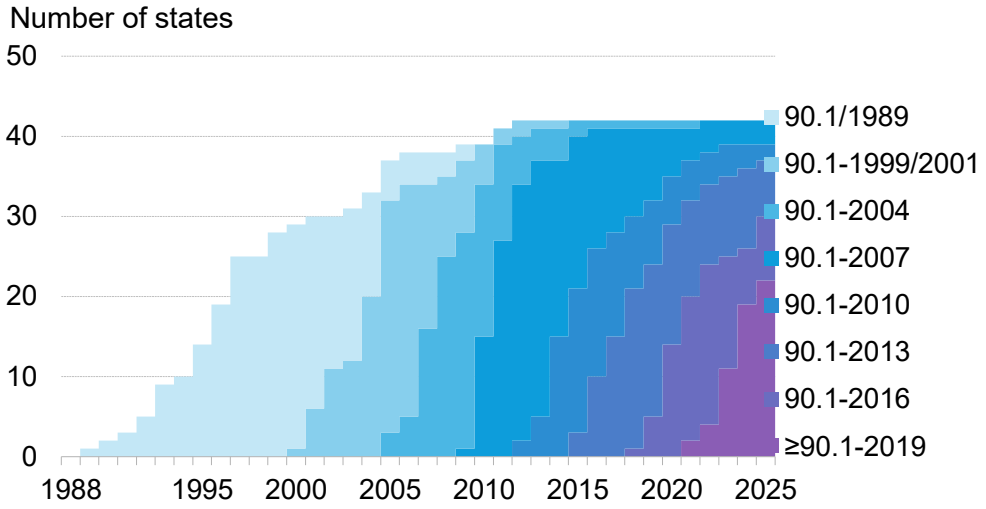
Deployment: State energy code adoption

State residential and commercial building codes, December 2025



Commercial building code adoption among states, over time



- Building energy codes set minimum standards for both new buildings and renovations. The International Energy Conservation Code (IECC) sets standards for both residential and commercial buildings, while the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 90.1 is an alternative standard for commercial buildings. Both standards have increased in ambition over time. Analysis by the US Department of Energy estimates that the 2024 IECC led to efficiency gains of 7.8% over the 2021 edition, which itself was a 9.3% improvement on the 2018 edition. Similarly, the ASHRAE Standard 90.1-2022 offers 9.8% efficiency gains over the 2019 edition.
- States are continually adopting newer buildings codes, as higher energy efficiency standards are increasingly normalized. Florida, Illinois, Massachusetts, New Mexico, Rhode Island and Virginia adopted more stringent codes for residential buildings in 2025, while Maine and New York adopted more stringent codes for both residential and commercial buildings. In some states, local governments can set more stringent requirements. For example, Colorado does not enforce a statewide code for residential buildings, but cities like Denver, Fort Collins, Deeley and Colorado Springs have all adopted a version of 2021 IECC codes.
- Building Performance Standards (BPS) are laws that improve the performance of large existing buildings by setting minimum performance requirements and deadlines. By January 2026, the National BPS Coalition had grown to seven states and 42 localities, of which four states (Washington, Colorado, Maryland, and Oregon) and 12 localities have already adopted BPS.

Source: Energy Efficiency and Renewable Energy, BloombergNEF. Note: The maps represent EERE analysis of energy savings impacts from state code adoptions. Any code for which the Energy Index is not more than 1% higher than that of an IECC or Standard 90.1 edition is considered equivalent to that code edition.

Deployment: Grid-enhancing technologies and distributed resources

Summary of grid-enhancing technologies in the US

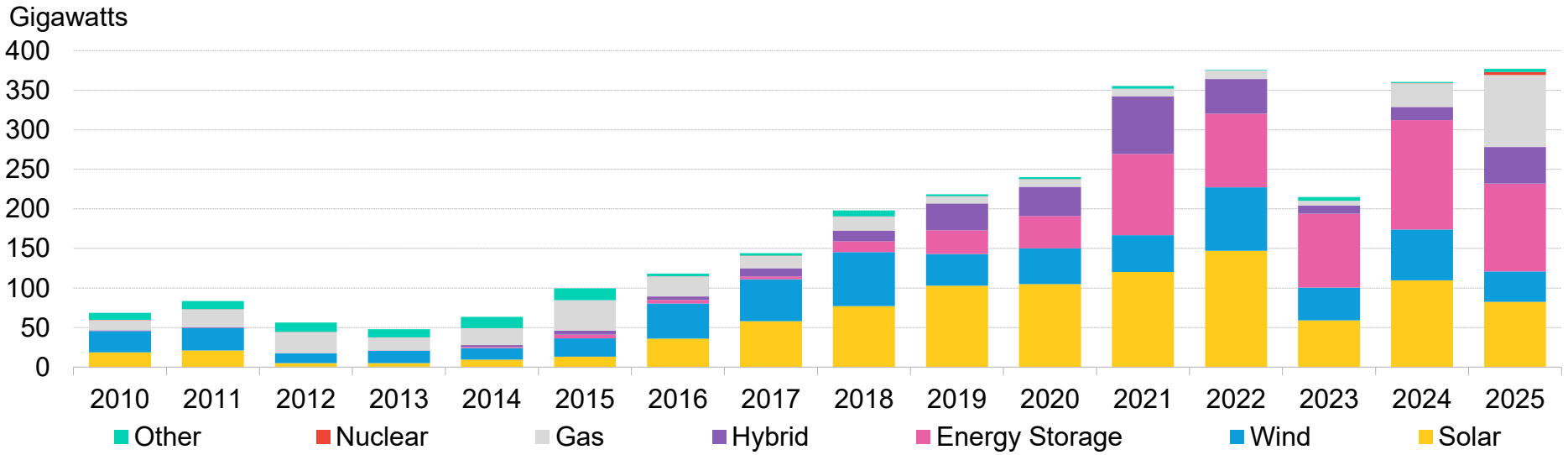
Technology	Capital expenditure	Additional capacity unlocked	Time frame for deployment	Scale of adoption	Key developers
Reconductoring	$0.6-1.0 million per mile	50-110% for advanced conductors 10-25% for coated conductors	18-36 months	High	• Prysmian • CTC Global • Southwire
Dynamic line rating	$0.45-0.5 million per mile	-8 to 40%	3-9 months	High	• LineVision • Ampacimon • GE Vernova
Advanced power flow control	$0.2-0.8 million per MVAr	20-30%	12-24 months	Low/Medium	• Smart Wires
Topology optimization	Project-specific	25-50% lower congestion costs 50-75% fewer curtailment and related costs	0-12 months	Medium	• NewGrid • GridAstra
Storage as transmission	Project-specific	Project-specific	1-3 years	Low	• Fluence • LS Power • Mitsubishi

- Grid-enhancing technologies (GETs) are emerging as a fast, cost-effective response to mounting pressure from surging electricity demand and new generating capacity additions in the US. By dynamically increasing the available line capacity or stability margin, GETs offer a cost-effective and rapid pathway for transmission owners and operators to strengthen the power grid without waiting for lengthy transmission buildouts.
- Utilities are simultaneously investing heavily to fortify the grid. Spending on undergrounding power lines has risen nearly 80% over the past decade, reaching $9.3 billion in 2024, as utilities seek to weatherize against growing wildfire, storm and other climate risks.
- At the same time, the grid is becoming increasingly decentralized. In 2024, the US saw 28.8GW of capacity added from distributed energy resources (DERs). Electric vehicle charging infrastructure led additions, bringing 17.1GW of capacity. Residential and commercial PV followed, with 7.5GW and 2.9GW of capacity added, respectively. Due to this rapid decentralization of the US grid, utilities and aggregators are deploying software platforms, called distributed energy resource management systems (DERMS), to control load from electric vehicles, heat pumps and behind-the-meter sources.

Source: BloombergNEF. Note: MVAR is mega-volt-amperes reactive.

Deployment: Interconnection queues

Total yearly generation capacity that applied for interconnection to US ISO/RTO power grids

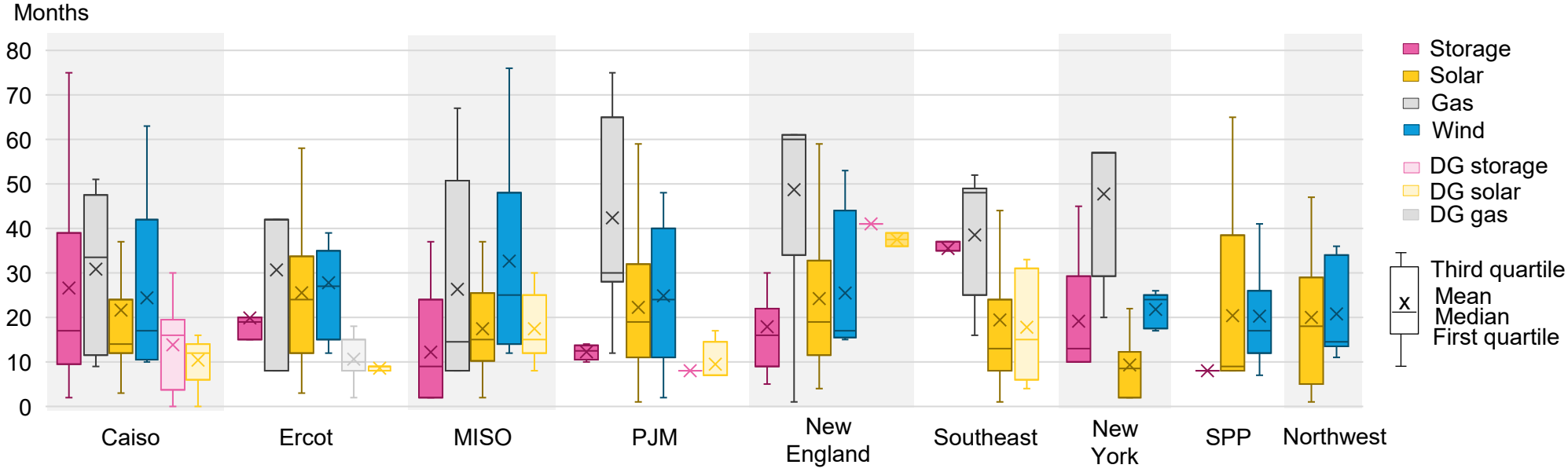


- Some 377GW of projects have applied to connect into the grids operated by the seven US independent system operators (ISOs) in 2025, with storage projects leading the way. The largest number of new generation projects are in Ercot, followed by MISO and PJM.
- Following large application volumes and ongoing reforms, system operators like Caiso and PJM paused new interconnection requests, contributing to the 2023 dip. While application volumes for renewables and storage decreased 15% year on year in 2025, new gas requests jumped 67%, driving total capacity applications slightly higher. MISO (33.6GW) and Ercot (28.3GW) received the majority of these gas applications. Anticipated load growth across the country revives interest in baseload power generation, boosting connection requests for non-renewable capacity.
- New wind projects seeking to come online dropped 40% year on year, with only 38GW applying in 2025. New wind build has lagged the pace of solar and storage, as wind generation saturates in its traditional markets in the wind belt, and pipelines are slow to build up in other regions. Uncertainty around federal tax incentives and significant policy roadblocks have also led many wind developers to delay or withdraw projects. To a lesser extent, applications for solar and storage interconnections also declined in 2025, by 25% and 20% respectively.

Source: Power grid operators, Berkeley Lab, BloombergNEF. Note: 'Hybrid' projects are a combination of multiple technologies, like co-located solar and storage. Caiso covers California, ISO-NE covers New England, MISO covers the Midwest ; NYISO covers New York, PJM covers the Mid-Atlantic ; SPP covers the central southern US; Ercot covers most of Texas. RTO is regional transmission operator.

Deployment: Lead times by supply-side technology and power region

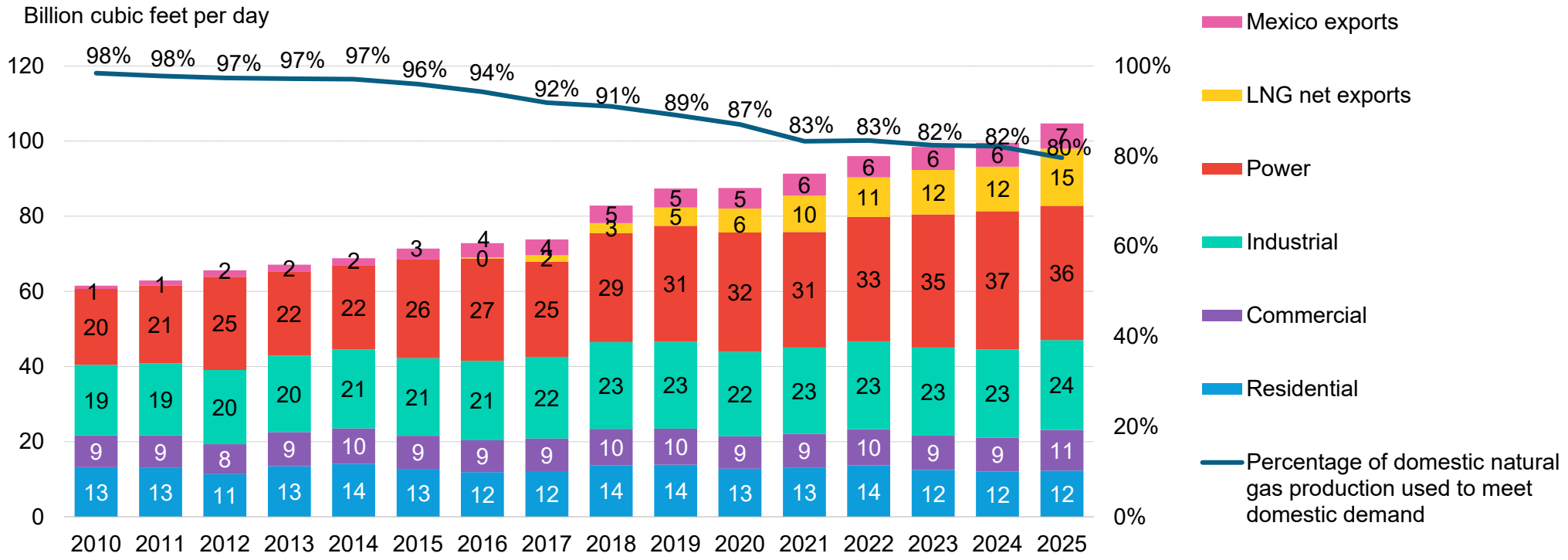
Lead times for technologies by US power region, for period 2018 to 2025



- As electricity demand rises, bringing new generating capacity online quickly is paramount. Many regional grids lack abundant spare power capacity, and power-hungry assets like data centers will prioritize markets where new supply can be developed alongside demand.
- Of utility-scale power sources, solar generally offers some of the shortest lead times, averaging 14 to 24 months in regions like California, Ercot, MISO and the Southeast. New natural gas capacity, on the other hand, involves some of the longest and most variable lead times, especially in regions like PJM, due to permitting and infrastructure constraints.
- Distributed resources like solar and storage had even faster deployment potential, with typical timelines under 12 to 18 months across regions. On-site gas generators in Ercot presented some of the fastest lead times at just around 10 months.

Source: BloombergNEF, US Energy Information Administration (EIA). Note: Caiso is California Independent System Operator, SPP is Southwest Power Pool, Ercot is Electric Reliability Council of Texas, MISO is Midcontinent Independent System Operator, PJM is PJM Interconnection, NYISO is New York Independent System Operator, ISO-NE is ISO New England. DG is distributed generation and is defined as grid-connected generators that are smaller than 0.5MW.

Deployment: US natural gas demand, by end use

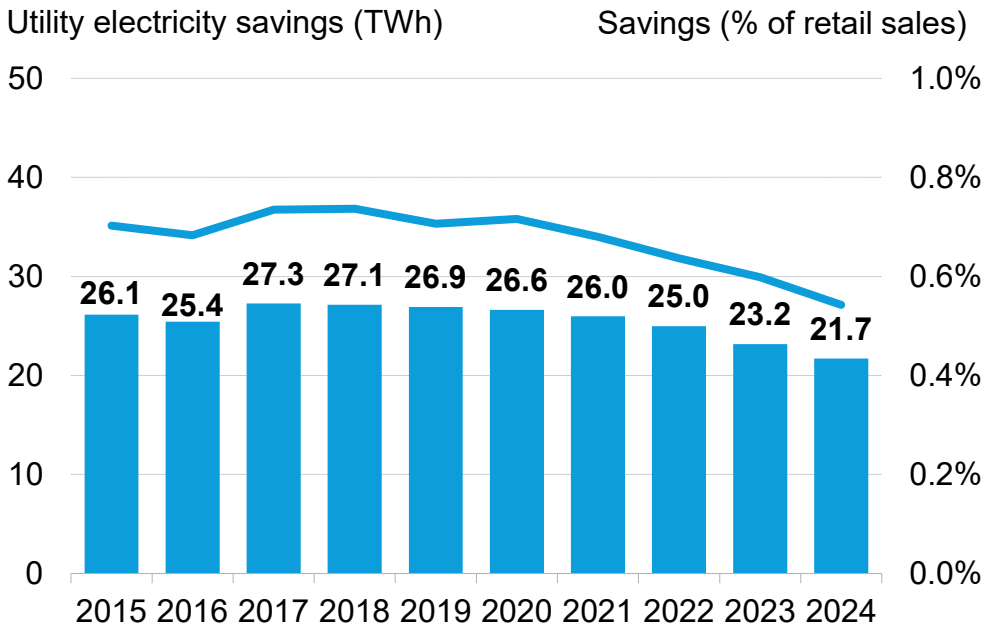


- Demand for US natural gas rose 5.1 billion cubic feet per day (Bcf/d), or 5.1%, in 2025 from the year prior to reach 104.8Bcf/d. The jump was driven by rising LNG feedgas demand for exports, strong residential and commercial gas demand, and increased pipeline exports to Mexico. Conversely, power consumption fell by 2.9%, driven by strong coal generation as higher gas prices relative to 2024 incentivized more gas-to-coal switching in the power sector.
- With US gas storage below the five-year average after a cold end-of-winter 2024-2025, prices were higher at the beginning of the year. Despite record levels of US gas production, prices remained above last year's levels due to strong LNG feedgas demand and a cold start to winter 2025-2026.
- LNG feedgas net exports growth rose to 28% year-over-year – the highest yearly increase in the last three years. The ramp up of new US LNG export terminals, notably Plaquemines LNG and Corpus Christi Stage 3, helped set the stage for strong growth in LNG feedgas consumption.

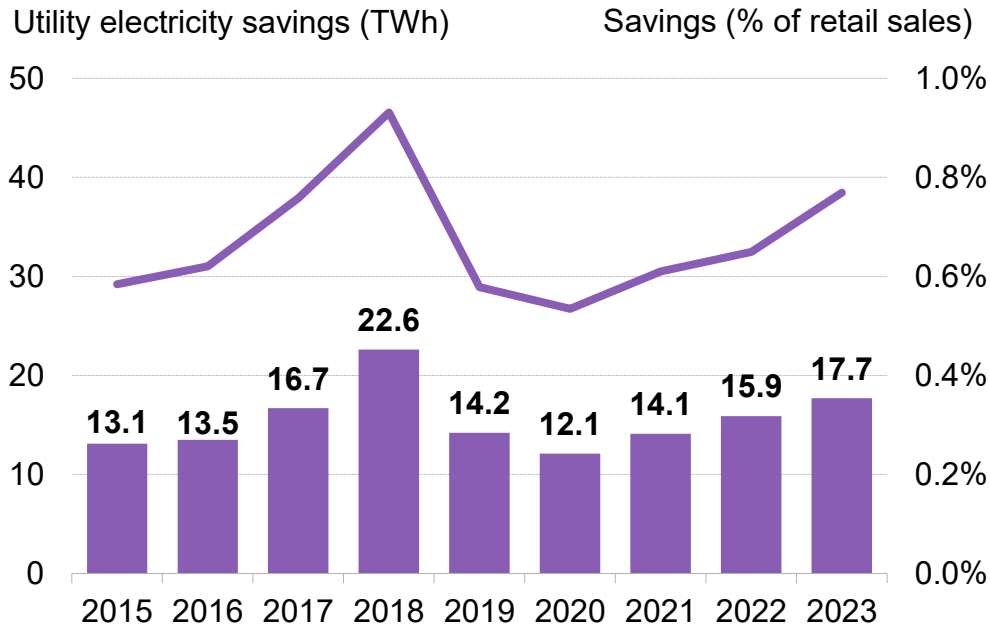
Source: BloombergNEF, US Department of Energy. Note: November and December 2024 values are Bloomberg estimates. LNG refers to liquefied natural gas.

Deployment: Incremental annual energy efficiency achievements by utilities

Electric utility savings from energy efficiency



Natural gas utility savings from energy efficiency

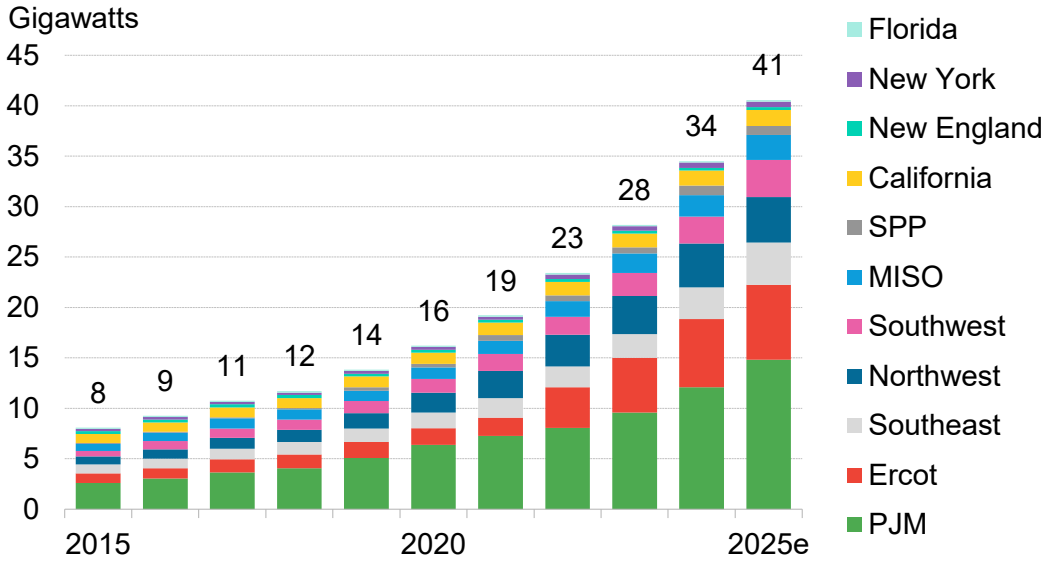


- Since 2015, the number of states with energy efficiency resource standard (EERs) policies has stagnated, with one state either adding to the list or leaving it each year. As utility investments in energy efficiency declined during the pandemic, the amount of electricity saved from efficiency measures also slipped – both in absolute terms and as a share of retail sales.
- In 2024, electric utilities saved 21.7TWh of energy, with the savings share of total sales inching up slightly to 0.55%. In 2023, the last year for which there is complete data on gas utility efficiency, savings rose to 17.7 TWh. This represents 0.77% of retail sales in that year.

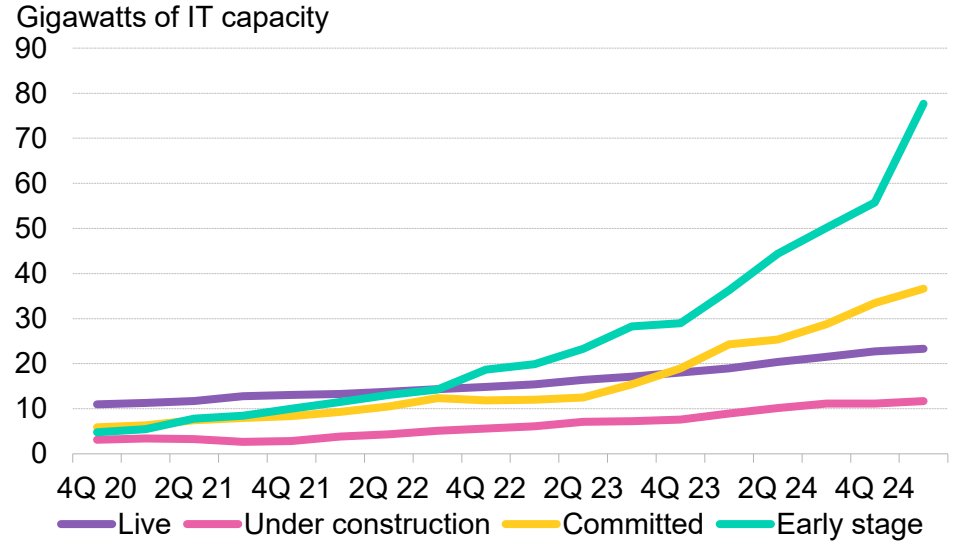
Source: American Council for an Energy-Efficient Economy (ACEEE), Energy Information Agency (EIA), American Gas Association (AGA). Note: The ACEEE data points to caveats in the energy efficiency savings data reported by states. ACEEE uses a standard factor of 0.825 to convert gross savings to net savings for those states that report in gross rather than net terms. Natural gas utility savings are reported as annual national estimates and the data originate from AGA's Annual Energy Efficiency Survey. Sample responses are normalized to national totals using a regional gross-up methodology.

Deployment: Data-center electricity demand

US data center power demand by grid region



Cumulative US data center IT capacity by stage

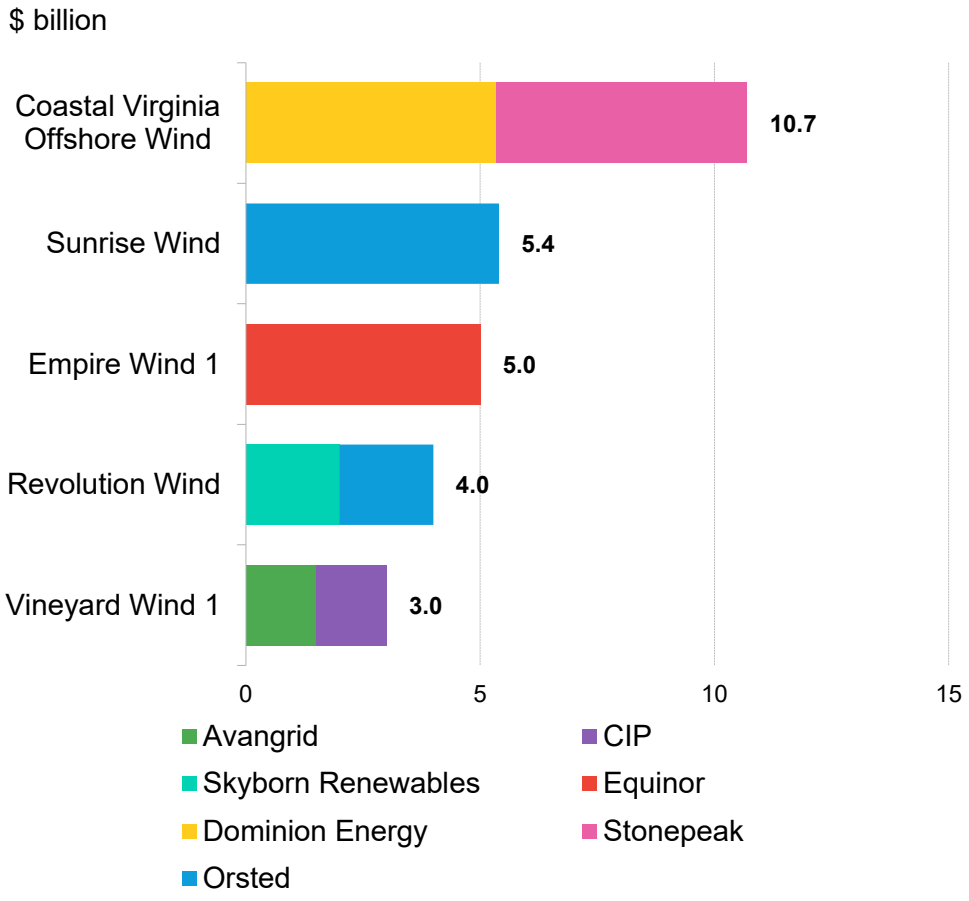


- Data centers are now a dominant force behind rising power demand in the US and the associated impact on grid constraints and electricity prices. Demand has grown more than 400% in the past 10 years and 150% in the last five. Nowhere is this a more important story than in PJM, the Mid-Atlantic grid operator and home to Virginia's Data Center Alley. Demand growth has been strong in Texas and the Southeast as well.
- Data center development continues to accelerate in key states, but varying workloads determine facility siting strategy. Saturation in northern Virginia is pushing new data-center development into the central and southern parts of the state, like outside of Richmond. In Georgia, power demand and land constraints are pushing new developments beyond the metro Atlanta area. Texas is seeing the opposite shift: As remote crypto mining companies dedicate their pipeline of projects to AI instead, new facilities are moving to population centers.
- These developments shows no signs of slowing down. Through the first quarter of 2025, a cumulative 23GW of data center IT capacity was live in the US, but an additional 48GW was under construction or committed. Including early-stage announcements, that number becomes 236GW of power-hungry data centers.

Source: BloombergNEF, DC Byte. Note: "Power demand" refers to the total electricity used by the entire data center facility. IT capacity is the computing load of a data center, including servers, storage and networking equipment. Ercot is Electric Reliability Council of Texas. MISO is Midcontinent Independent System Operator. SPP is Southwest Power Pool. Actuals are through March 2025.

Deployment: Offshore wind setbacks

Capital expenditure across under-construction US offshore wind projects estimated by BNEF

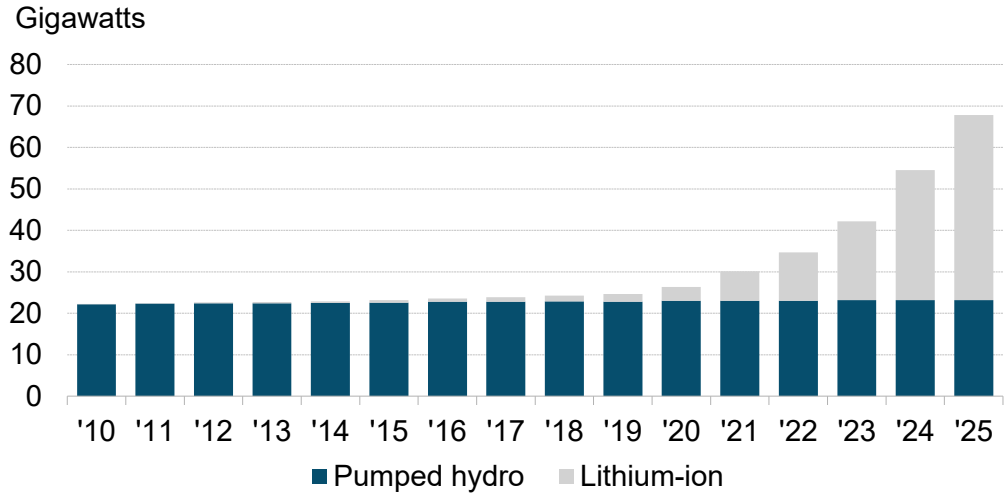


Source: BloombergNEF, developers, news reports.
Note: Estimated capital expenditure based on publicly disclosed values where available and BNEF assumptions. CIP is Copenhagen Infrastructure Partners.

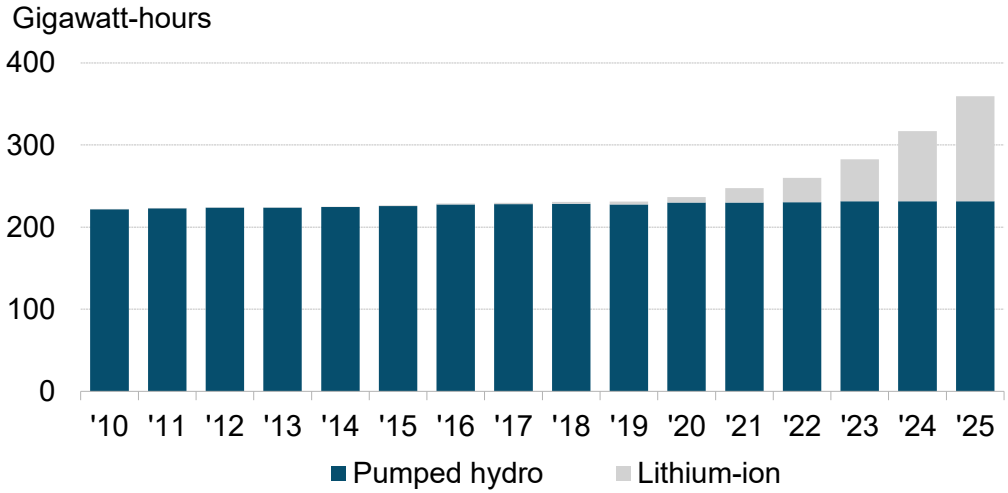
- The Trump administration's policies have increased risks for any new US offshore wind projects, while Congress removed federal support for the technology.
- In January 2025, President Trump issued an executive order establishing an indefinite moratorium on any new leasing and permitting activities for US offshore wind projects. Although a court order reversed the moratorium in December, it stopped short of requiring the administration to make progress on permit applications.
- The One Big Beautiful Bill Act, signed into law in July, sped up the phaseout of federal tax credits for offshore wind. Projects must now start construction by mid-2026 to qualify. High risks mean that no new offshore wind project will be able to secure financing in time to meet this deadline, although those that have started construction will still receive tax credits.
- The Trump administration issued stop-work orders to Equinor's Empire Wind 1 in April and Orsted's Revolution Wind in August, both of which are under construction. Although both orders were ultimately unsuccessful, the companies lost tens of millions keeping vessels and construction crews on standby.
- In December, the Trump administration issued a sweeping Interior Department order to pause all five under-construction projects. Developers of all five projects challenged the order in court, and were granted preliminary injunctions, allowing them to continue construction. However, the projects lost millions of dollars per day while construction was stalled.

Deployment: US cumulative energy storage

Commissioned US energy storage capacity, GW



Commissioned US energy storage capacity, GWh

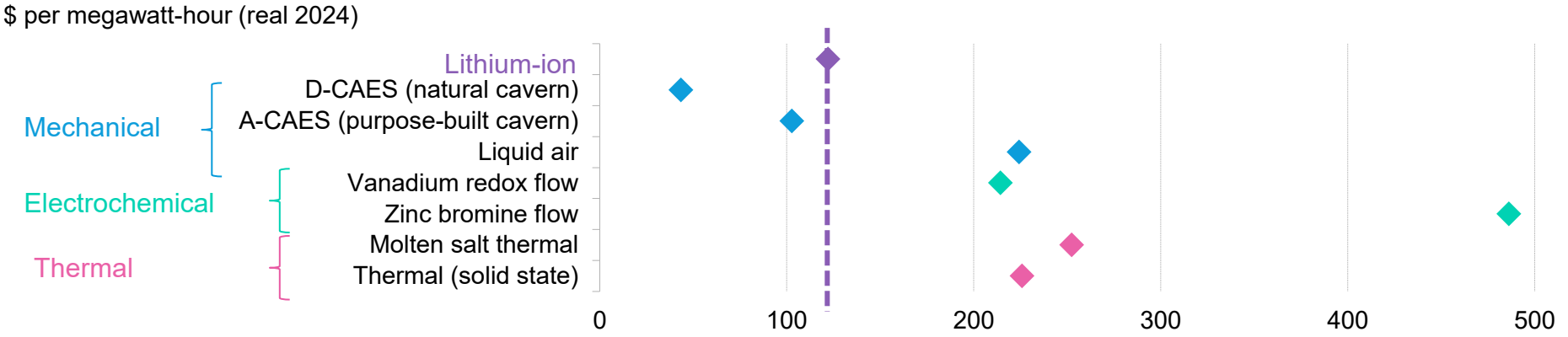


- Cumulative US energy storage capacity reached 68GW or 359GWh in 2025 – a 24% increase in gigawatts year-on-year. The growth was driven by 13GW or 42GWh of additions of non-hydro energy storage, like lithium-ion batteries. No new pumped hydro capacity was added, but pumped hydro continues to provide a significant portion of total cumulative storage capacity (34% by gigawatts and 65% by gigawatt-hours).
- No state has set a new target for energy storage deployment in 2025, but a few states including New York, New Jersey and Massachusetts have launched energy storage solicitations to meet the state targets.
- In 2025, the US energy storage market has been hit by policy changes including high import tariffs on Chinese batteries and the passage of the One Big Beautiful Bill Act. The new law also adds restrictions on supply chains involving foreign entities of concern, notably Chinese companies, making energy storage projects that begin construction after 2025 ineligible for Investment Tax Credits if they fail to meet the requirements. To safe-harbor projects, many developers rushed to begin construction by the year-end, either by physically starting constriction or by placing equipment orders. With these policy shifts, the US energy storage supply chain is set to move beyond China by establishing domestic battery manufacturing capacity.

Source: US Energy Information Administration, Federal Energy Regulatory Commission (FERC), BloombergNEF. Note: "Other" includes projects where the technology is unknown, which is frequently lithium-ion batteries. Assumes 10-hour discharge duration for pumped hydro facilities.

Deployment: Long duration energy storage

Median levelized cost of storage for long-duration systems compared to lithium-ion batteries, 2024

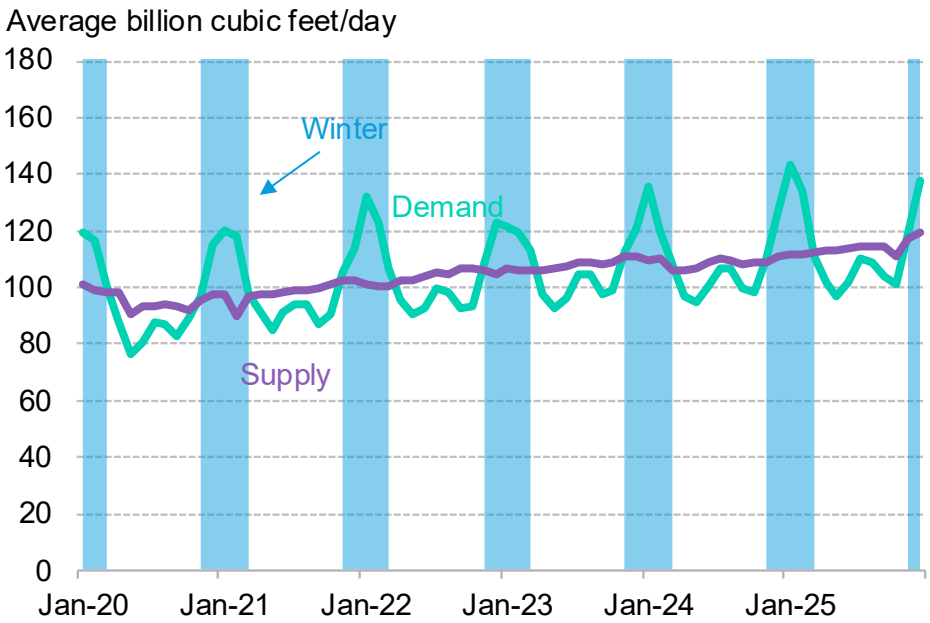


- Long duration energy storage (LDES), defined by BloombergNEF as enabling the continuous discharge of energy for more than six hours, has seen steadily growing interest globally. While there is no widespread consensus on the definition of LDES, BNEF considers LDES to encompass a broad range of technologies, including electrochemical, thermal, mechanical and chemical-based systems.
- Among the range of technologies available, costs vary significantly. In non-Chinese markets, compressed air energy storage (CAES) is currently the most cost-effective LDES option, especially when using natural underground salt caverns. Median costs are around $43/MWh for CAES with natural caverns and $103/MWh for purpose-built caverns. These technologies are already often cheaper than lithium-ion batteries on a per-megawatt hour basis: the median lithium-ion LCOS is $122/MWh.
- Other technologies remain somewhat cost-prohibitive. Vanadium redox flow batteries cost around $214/MWh. The most expensive technology by far is zinc-bromine flow batteries, driven by system complexity and low depth of discharge.
- Global novel LDES deployment continued to break records in 2025, with 2GW/9GWh of new installations. This brought total installed capacity to 5GW/25GWh, marking a clear acceleration from 2024, when 1.5GW/7.4GWh was added. China remained the dominant market, while an increasing number of other markets – including the UK, Germany, Italy, and several states in the US, Australia – introduced supporting mechanisms and procurement targets to advance LDES deployment.

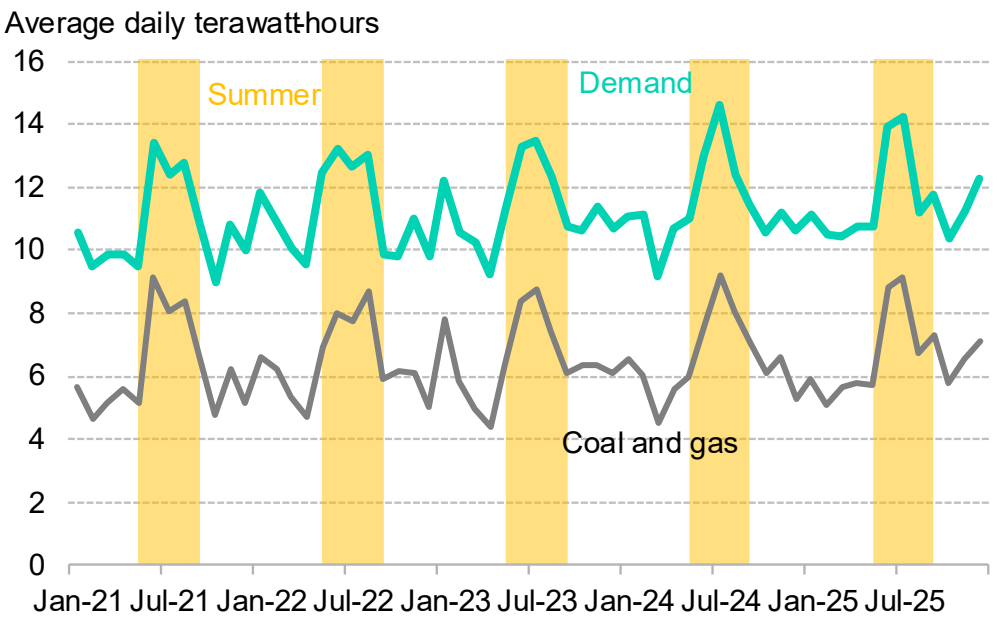
Source: BloombergNEF. Note: The storage technologies presented span durations ranging from six to 120 hours, with the chart above illustrating their median costs. We assume one cycle per day (365 cycles annually). For storage durations beyond 12 hours, only 12 hours will be stored and dispatched. Excludes storage technologies in China, where costs are cheaper. Only LDES technologies with adequate cost data from our 2024 survey are included here. D-CAES = diabatic compressed air energy storage, A-CAES = adiabatic compressed air energy storage. 2024 is the financing year. No subsidy is included in our calculation. Thermal storage solutions primarily focus on power-to-heat use cases.

Deployment: Seasonal storage needs

Average gas production and demand



Average electricity demand and thermal generation

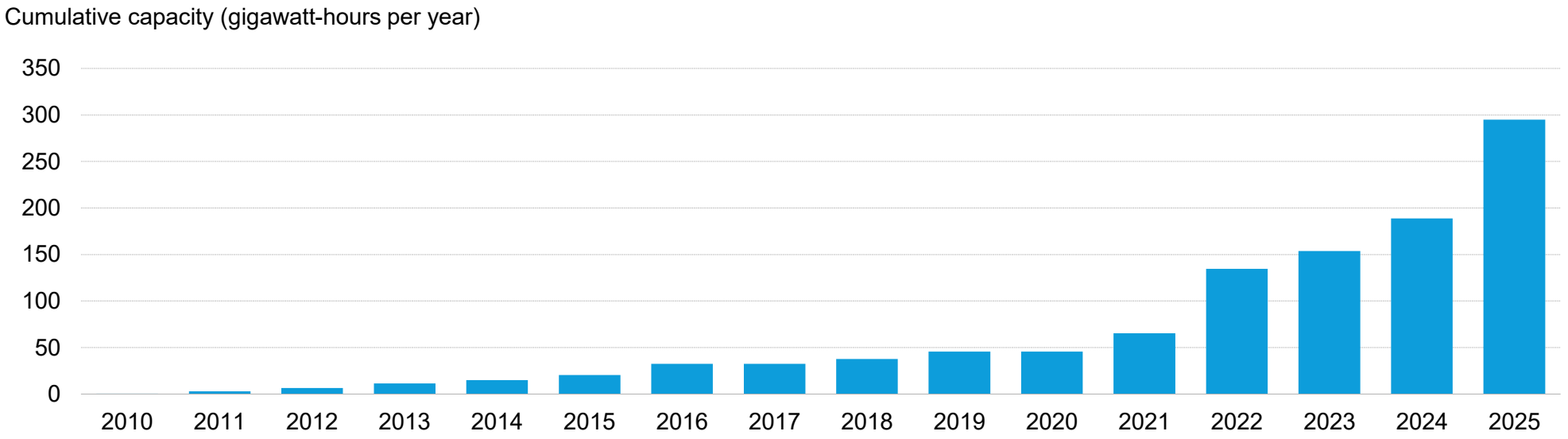


- Seasonality in energy demand has typically been met by some form of storage. Thermal fuels, like coal or gas, can be stored either on-site or in specialized underground reservoirs, and are thus arguably as much a form of energy storage as batteries and pumped hydro.
- The gas market typically sees demand surge in winter, as the fuel is used to heat homes, businesses and industry. Contribution from underground storage helps meet the higher heating needs. During times of high demand, storage can meet up to 50% of daily natural gas demand. An average of 14.2 billion cubic feet per day was consumed from storage over winter 2024-25 (November through March).
- The power market tends to see demand surge in the summer, and it meets this demand by generating more electricity. The two major sources of electrical energy storage are pumped hydropower reservoirs and lithium-ion batteries. However, both these means of storage are focused on hourly shifting, such as up to 20 hours at a time (hydro), or four to six hours (batteries). The power market currently relies on being able to generate more electricity by burning fossil fuels to meet seasonal surges in power demand, rather than seasonal electricity storage.

Source: BloombergNEF. Note: Gas supply includes imports from Canada. Demand includes exports to Mexico and liquefied natural gas (LNG) feedgas demand.

Deployment: Current battery manufacturing capacity

Cumulative US lithium-ion battery cell manufacturing capacity

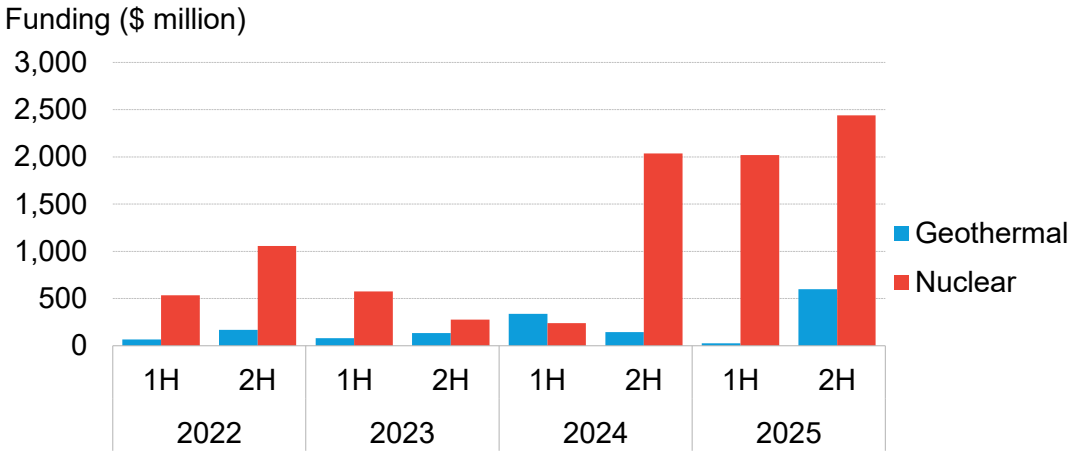


- By the end of 2025, the US had 295 gigawatt-hours of annual lithium-ion battery manufacturing capacity, a growth of 106GWh, or 56%, over the country's capacity at the end of 2024. Additions in 2025 included BlueOval SK's 37GWh plant in Kentucky and Panasonic's 32 GWh plant in Kansas.
- In 2025, more companies in the US started shifting capacity towards battery production for stationary storage. Stationary storage is emerging as a new revenue opportunity, offering a growing outlet for surplus capacity and a partial hedge against EV demand volatility. Ford plans to repurpose capacity in Kentucky for battery energy storage systems (ESS), while LG Energy Solution has begun ramping ESS-dedicated lithium-iron-phosphate production in Michigan. SK On and Samsung SDI are also shifting or allocating US capacity toward lithium-iron-phosphate cells for energy storage, with production starting in the next two years.

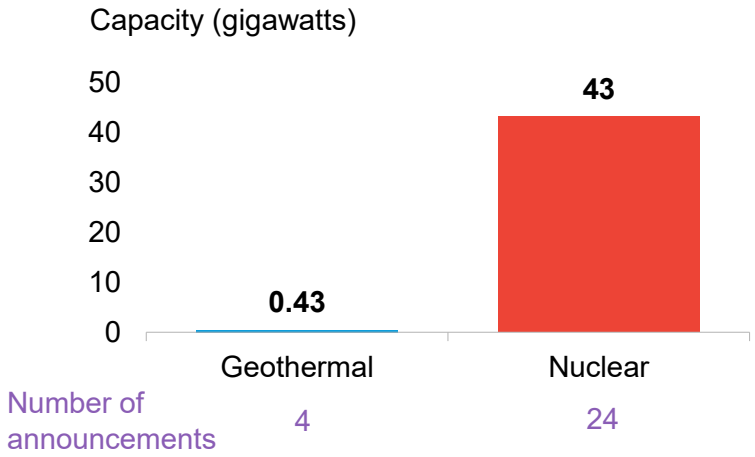
Source: BloombergNEF. Note: Manufacturing capacity is based on nameplate as-reported capacity and includes manufacturing for multiple segments such as electric vehicles, stationary storage and others. Data as of January 15, 2026.

Deployment: Next-generation firm power

Global venture capital and private equity funding for geothermal and nuclear



US data center-related geothermal and nuclear project announcements

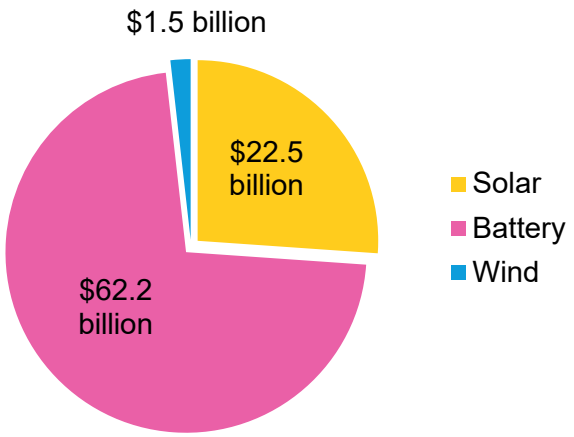


- Nuclear and geothermal technologies provide dispatchable power and have been shown favor by the Trump administration, positioning both for a comeback with next-generation technologies that aim to lower costs. Without additional funding and firm commitments from customers, however, the nuclear and geothermal revival may be short-lived.
- Funding from investors has been more concentrated for nuclear. Globally, since 2022, venture capital and private equity funding totaled $9.2 billion for advanced nuclear, compared with $1.6 billion for next-generation geothermal. Funding for geothermal ticked up in the second half of 2025, mostly driven by Fervo's Series E round. Companies will still need additional capital to deploy their first-of-a-kind technologies.
- Data-center operators are leaning toward nuclear rather than geothermal, as reflected in both announcement counts and capacity. To date, 24 data center-related nuclear agreements have been announced, amounting to 43GW – compared to 0.43GW of advanced geothermal across four projects. Most of the agreements announced to date are nonbinding, however, and BNEF expects that many will not come to fruition.
- Nuclear is easier to collocate with data centers as it doesn't have geological restrictions. Though no next-generation nuclear power plants have come online for data centers in the US, Fervo is already providing power to the grid from its demonstration project for Google's data centers in Nevada.

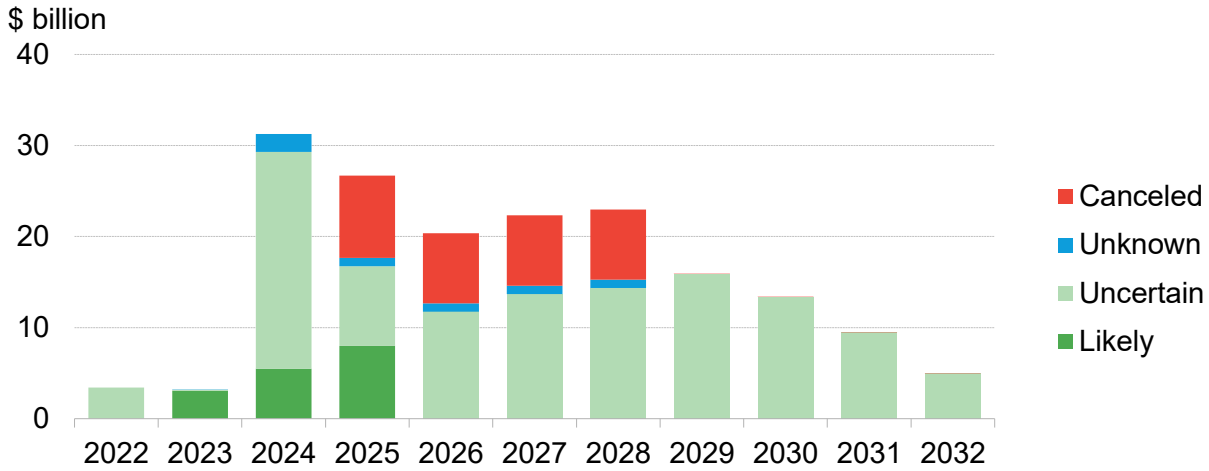
Source: BloombergNEF, press releases, CB Insights, company websites.

Deployment: Federal supply-chain subsidies

Remaining estimated clean-tech manufacturing subsidies, 2026 to 2032



Estimated subsidies available for solar, battery, wind and electric vehicle factories, by certainty of funding delivery

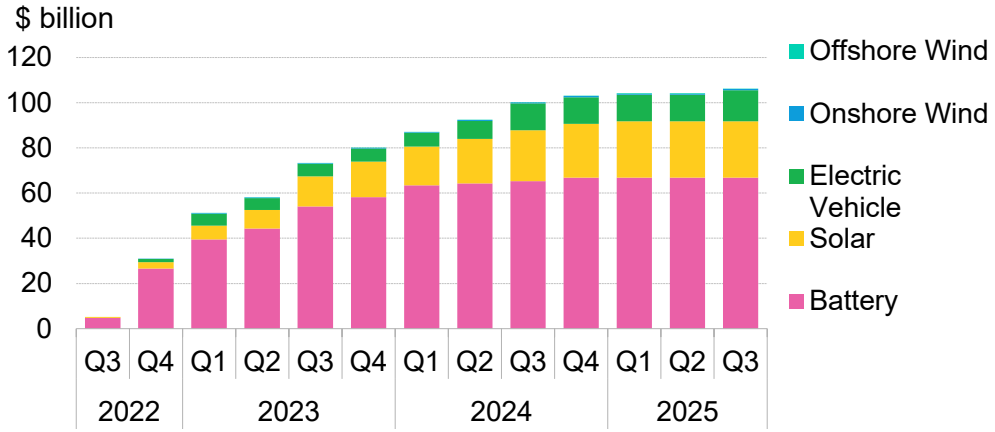


- President Trump's One Big Beautiful Bill Act, passed in July 2025, cut $32 billion from federal subsidy programs supporting solar, battery, wind and electric vehicle manufacturing. The funding was clawed back from unspent allocations within the Department of Energy's grant, low-interest loan and loan guarantee programs.
- Previously obligated federal spending for solar, battery, wind and EV manufacturers now also appears at risk. The administration has signaled that it is exploring legal avenues to cancel issued loans and grants, though little detail has been provided on the process. In an extreme scenario, revoking already disbursed funding could eliminate an additional $42 billion in available US clean-tech subsidies.
- On the face of it, the important production tax credit – which allocates payments per solar, battery and wind component produced and sold – emerged largely unscathed from the OBBBA legislative process, with few explicit cuts.
- But new additional supply-chain requirements may severely reduce the ability to access that funding. To qualify for the production tax credit firms must now comply with Foreign Entity of Concern rules, released in February 2026. The requirements will be onerous for firms to comply with, raising doubts about firms' ability to access the credit beyond 2026. As a result, we have downgraded the expected delivery of the incentive from "likely" to "uncertain."

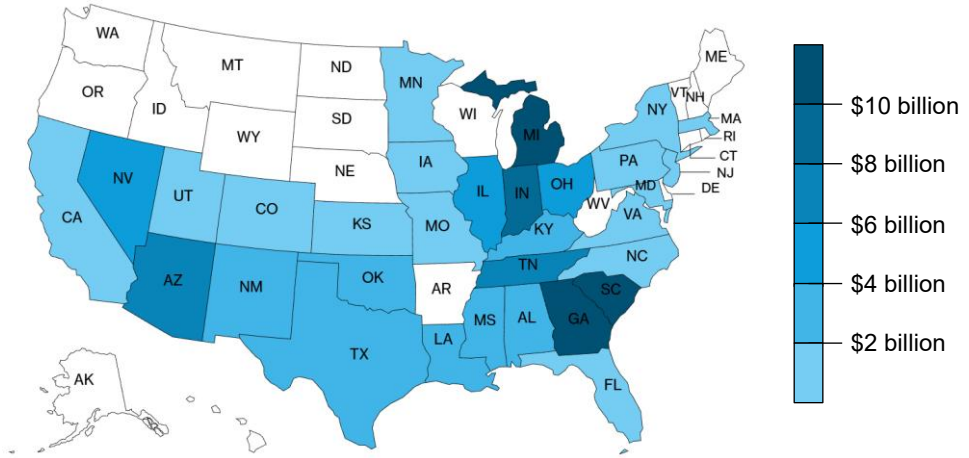
Source: BloombergNEF. Note: Likely refers to funding that the Trump administration has confirmed for future years. Uncertain refers to funding that has neither been confirmed to continue nor canceled, but is relatively insulated from policy reversals, clawbacks or administrative changes. Unknown refers to funding that has neither been confirmed to continue nor canceled, and appears more vulnerable to such changes. Funding that has already been canceled or clawed back by the Trump administration is shown in red.

Deployment: Status of IRA-era manufacturing investments

US cumulative clean-tech manufacturing investment planned since the passage of the IRA, by announcement date



US cumulative clean-tech manufacturing investment planned since the passage of the IRA, by state

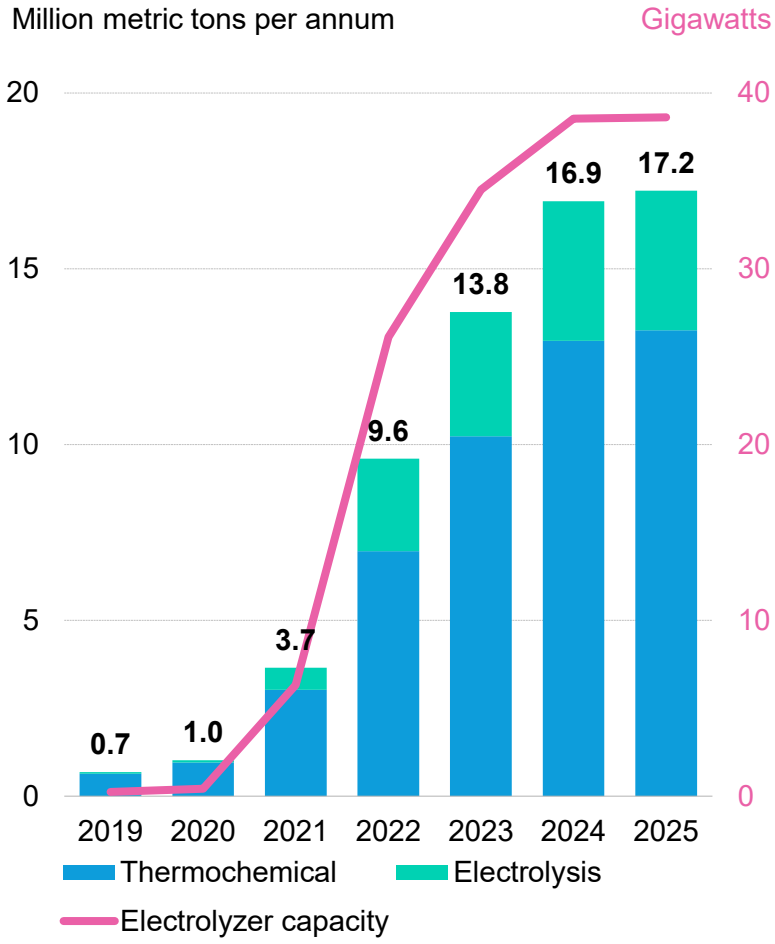


- Since the passage of the IRA, manufacturers have planned to invest $106.2 billion in the US across battery, solar, EV and wind turbine supply chains. The bill boosted the pipeline of US solar module factories by a factor of 10, while that of battery-cell plants has almost doubled.
- Post-IRA supply-chain investment surged in 2022 and 2023. Momentum began to ease in 2024, however, as a softer outlook for EV demand led to a drop in new battery and EV project announcements. The slowdown intensified in 2025, when President Donald Trump's return to the White House further weakened demand expectations. Subsidy revisions and a volatile trade backdrop acted as an additional dampener on investment. Of existing investment, over $10.4 billion, or almost 10%, has been canceled.
- The Midwest and the South emerged as clean-tech hubs. In the Midwest, EV and battery investments have concentrated in states with existing automotive supply chains, especially in Michigan, Indiana, Illinois and Ohio. For its part, the South has attracted manufacturers with low-cost electricity, favorable tax regimes, inexpensive land and flexible labor markets, reinforced by generous state-level incentives. Solar manufacturing is especially concentrated in the South, led by spending in Texas and Georgia.

Source: BloombergNEF. Note: Includes factory investment announcements across battery manufacturing (separators, electrolytes, cathodes, anodes and cells), solar (polysilicon, wafers, cells and modules), wind turbines (nacelles and blades), and electric vehicle assembly. IRA refers to the Inflation Reduction Act. Covers all announced investment values from August 16, 2022 to September 30, 2025, including projects that were later canceled. Investment values were estimated from capacity data when not disclosed, except for EV assembly.

Deployment: Hydrogen announcements and policy

Cumulative announced clean hydrogen production and electrolyzer capacity in the US, by year of announcement

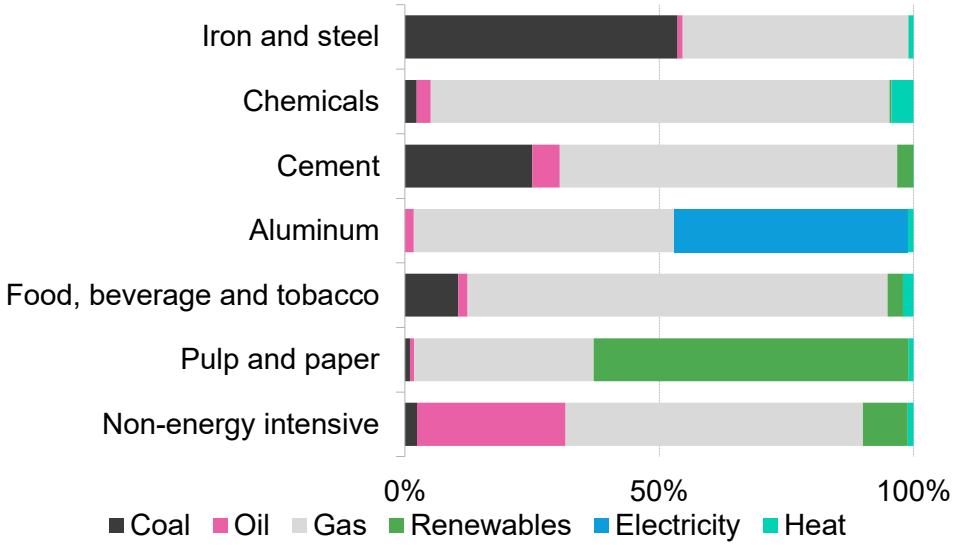


Source: BloombergNEF

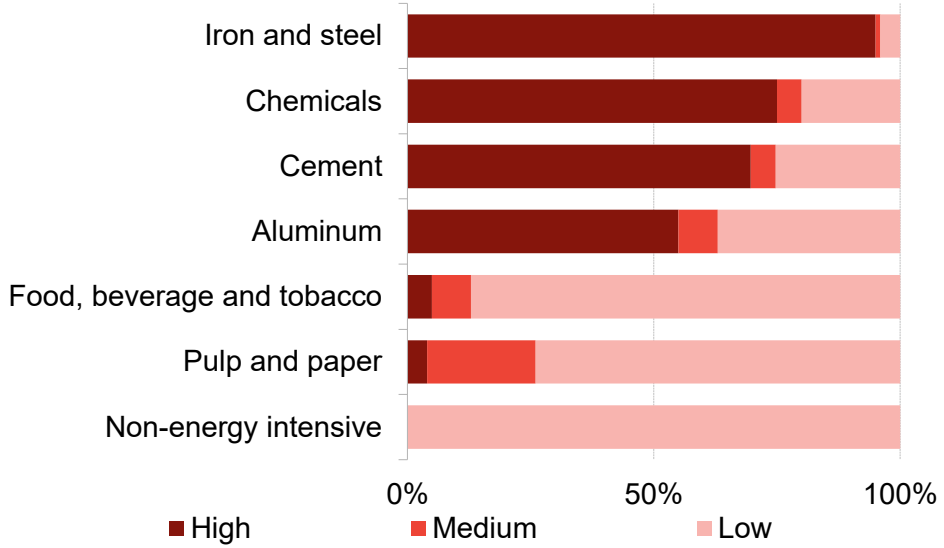
- Announcements for clean hydrogen projects and electrolyzer capacity stalled in 2025. Just 0.31 million metric tons per annum (Mt) of planned H_2 supply was announced, compared to over 3 Mt announced in each of the two years prior. Meanwhile, virtually no electrolyzer capacity was announced last year, after over 34GW was announced between 2020 and 2024.
- Most announced capacity is thermochemical or so-called 'blue' hydrogen, made by reforming natural gas with the resulting CO_2 captured and stored. This is cheaper to make in the US than electrolysis or 'green' hydrogen, made by splitting water using renewable electricity.
- Electrolysis (green) hydrogen's fortunes dipped following the passage of the One Big Beautiful Bill Act (OBBBA), which made most projects unviable by shortening the period during which projects can apply for the 45V tax credit to the end of 2027. Another blow was the Department of Energy's $2.2 billion cut for two West Coast green hydrogen hubs on Oct. 1, although a federal court ruled some of the cancellations from that announcement to be unlawful, making it possible funding will return.
- Thermochemical (blue) H_2 is also not safe from cancellations, given tight project timeline constraints and diminishing demand. In November, oil major Exxon Mobil paused its Baytown project, one of the largest announced, citing low demand.
- Some of the four remaining announced thermochemical (blue) H_2 projects may now also face difficulties. This comes after the EU suggested on Jan. 7, 2026, that it could remove ammonia from its Carbon Border Adjustment Mechanism, or CBAM – a carbon border tax that created a business case for blue ammonia sales to the EU.
- There are some minor bright spots. The OBBBA specifically relaxed the emissions requirement for fuel cells used to generate electricity to claim 48E investment tax credits. This indirectly benefits thermochemical hydrogen, given production tends to be higher-emitting. Fuel cell companies can take advantage to power the AI boom – for example, American Electric Power signed an agreement with Bloom Energy to procure stationary fuel cells to support data center onsite generation.

Deployment: The role of heat in industrial processes

Share of process heat consumption in industry by fuel in the US, 2023



Temperature profile for industrial process heat in the US, 2023

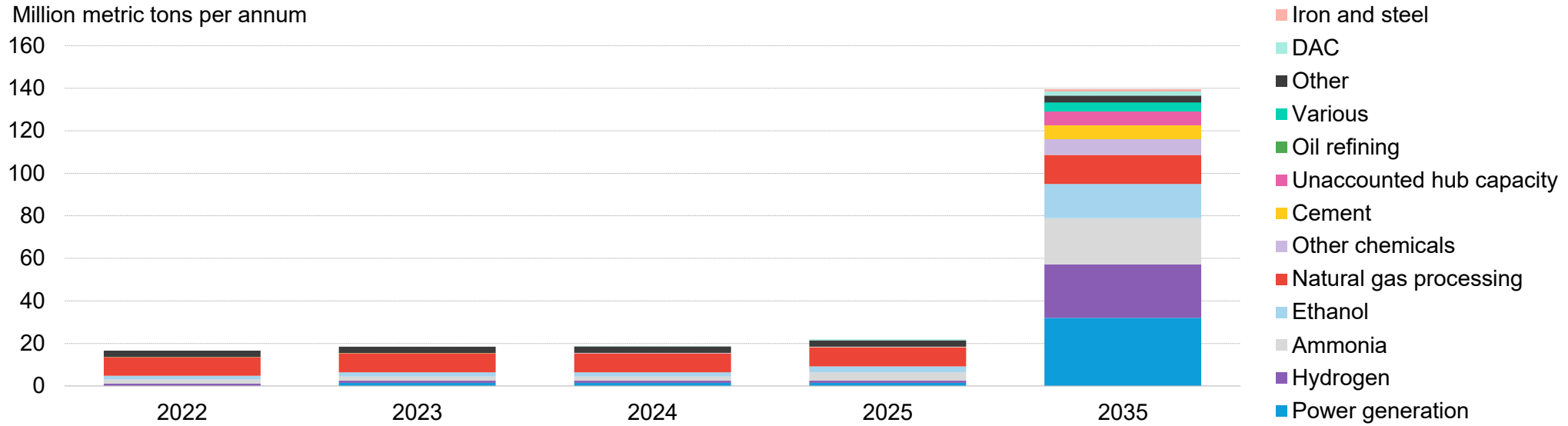


- Natural gas is the dominant heat source for most industries in the US due to prolific, low-cost domestic production. It is responsible for about two thirds of overall heat consumption. Most industrial energy consumption is used to produce process heat.
- The EU's Innovation Fund Heat Auction (IF25) pilot allocates €1 billion ($1.2 billion) to projects that decarbonize industrial process heat. Its competitive design rewards projects with the highest CO2 abatement potential per euro, and those that can flex their demand profiles.
- While €1 billion may be insufficient to make a large dent in process heat emissions, the auction is notable as the debut of the EU's Industrial Decarbonization Bank and, if successful, it could set a model for funding hard-to-abate decarbonization projects.
- Companies are beginning to commercialize high temperature electrified heat process equipment, including Aumund's electrified linear calcination conveyor and Coolbrook's RotoDynamic technology.

Source: BloombergNEF, International Energy Agency, Energy Balances, European Commission. Note: 'Non-energy intensive' includes transport equipment, machinery, construction, wood products, mining and textiles.

Deployment: US deployment pipeline for carbon capture projects

Historical and proposed carbon capture capacity in the US, by source

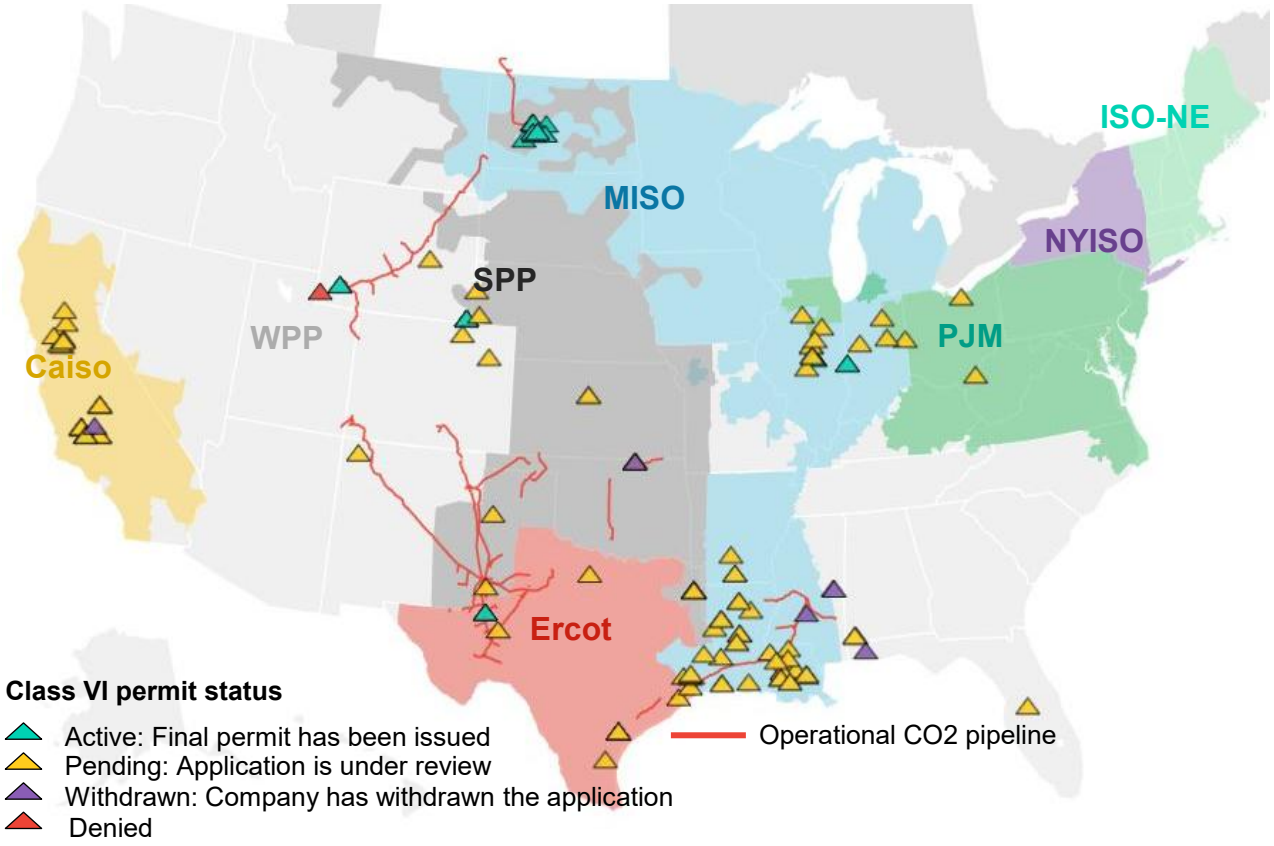


- The US installed over 22 million metric tons of CO_2 per annum (Mtpa) of carbon capture, utilization and storage (CCUS) capacity by the end of 2025. Most of this capacity has been deployed in lower-cost sectors, such as the natural gas processing sector. An additional 118Mtpa of capacity has been proposed to come online by 2035 for a more diverse set of sectors, with power generation, ammonia and hydrogen making up 67% of the total proposed capacity.
- Policy support for carbon capture was mixed in 2025. The One Big Beautiful Bill Act (OBBBA) cemented the 45Q carbon capture tax credit in place, allowing project operators to claim up to $85 per ton of CO2 (tCO2) they store. The OBBBA also increased the tax credit rate for the CO2 utilization pathway under 45Q, such as for enhanced oil recovery, to $85/tCO2 – an increase of $15/tCO2 over the prior rate. However, in May, the DOE canceled around $1.2 billion in CCUS grants awarded under a range of programs funded through the Infrastructure Investment and Jobs Act (IIJA), including the Industrial Demonstrations Program (IDP). A large chunk of the awards was for first-of-a-kind projects set to innovatively deploy carbon capture across higher-cost sectors, including power generation, chemicals and cement.
- The grant cancellations are critical, as the 45Q tax credit alone is insufficient to make the business case for CCUS in many instances, given the prohibitive cost of carbon capture. Meanwhile, other major markets like Saudi Arabia, Europe and the UK are moving forward with billion-dollar proof-of-concept projects. For US-based companies, some state-level initiatives remain, such as California's cap-and-trade program.

Source: BloombergNEF. Note: DAC is direct air capture.

Deployment: Carbon capture wells and pipelines by status

CO_2 transport and storage infrastructure, by status, by US power market

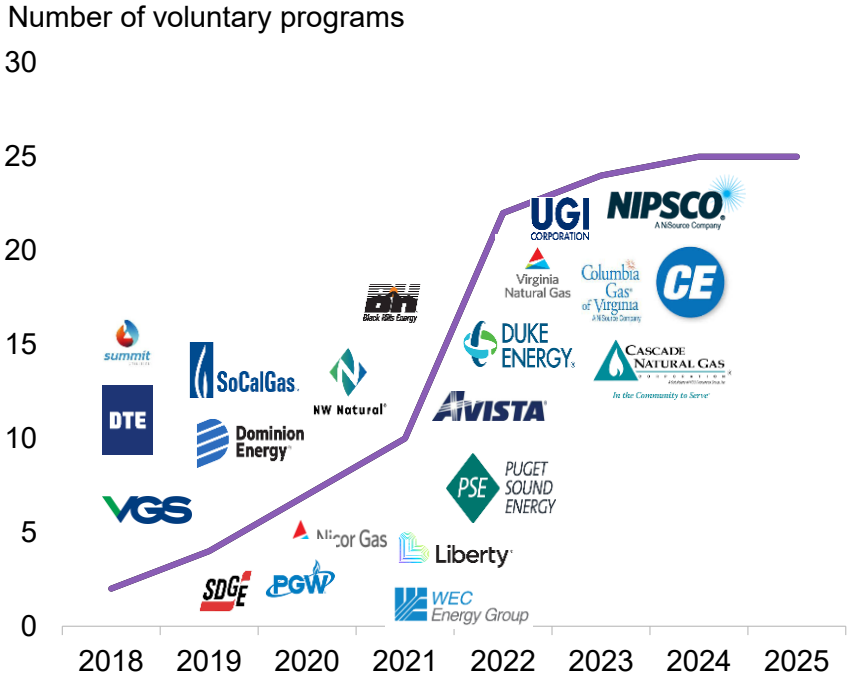


Source: National Energy and Technology Laboratory, Department of Energy, BloombergNEF. Note: Data as of June 31, 2025. Caiso is California Independent System Operator, SPP is Southwest Power Pool, Ercot is Electric Reliability Council of Texas, MISO is Midcontinent Independent System Operator, PJM is PJM Interconnection, NYISO is New York Independent Operator, ISO-NE is ISO New England. WPP is Western Power Pool and is not an ISO, parts of Arizona are not included in WPP. The Trailblazer pipeline, not shown, is operational as of September 2025.

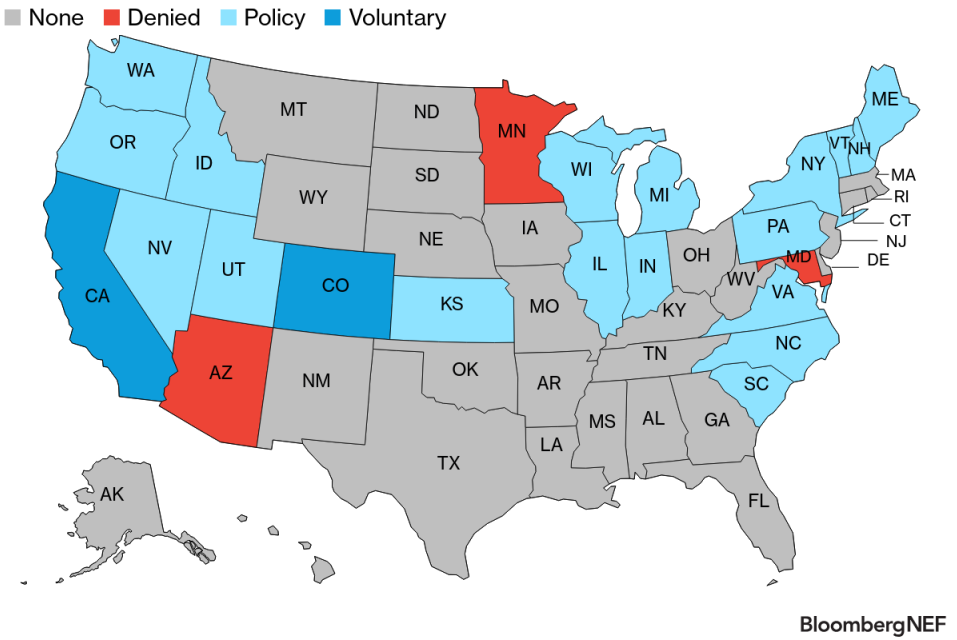
- Near-term carbon capture build out will largely follow existing midstream infrastructure, concentrating early deployments in places like Texas, Louisiana and Wyoming. All three states have Class VI primacy, meaning they can approve CO2 storage permits themselves.
- In states with no pipelines or permitted storage, getting Class VI well and pipeline approvals could add years to project timelines. NIMBYism (Not In My Backyard) and political opposition also matter. Storage ready states like Illinois could be a compelling near-term option, but a 2024 law placing a halt on pipeline construction has heightened the barrier to entry there.
- Most of the operational infrastructure in the US is legacy from enhanced oil recovery, with negligible new capacity announced apart from storage basins in the Gulf and ethanol serving pipelines in the Midwest.
- Large oil companies are now taking initiative to accelerate buildout, and are disproportionately leading the charge. ExxonMobil, Chevron and Occidental are actively expanding the infrastructure in the Gulf of Mexico and Permian. Though, smaller infrastructure companies like Tallgrass, ADM and Summit Carbon Solutions also have large scale projects either operational or in development.

Deployment: Natural gas utilities and RNG demand

Gas utilities selling RNG, as of 2025



Green gas tariff availability, as of 2025



- The residential and commercial sectors are a large portion of the gas utility business, accounting for roughly half of demand from the 20 largest publicly traded gas utilities analyzed by BNEF. As of June 2025, as many as 21 gas utility companies have regulatory approval to sell renewable natural gas (RNG), some in multiple states, to customers using a special tariff mechanism. These tariffs, referred to as green gas tariffs, enable utility customers to offset all or a portion of their natural gas usage with RNG.
- To meet customer demand, gas utilities are signing long-term offtake agreements. For example, NW Natural, a gas utility based in Oregon, signed a contract with Archaea Energy, now owned by BP, to purchase 1 trillion Btu per year for 21 years, starting in 2025. Additionally, in Washington state, Avista has signed four contracts since 2024 with Pine Creek RNG to secure long-term supplies for its customers.

Source: BloombergNEF, American Gas Association RNG Activity Tracker, company press releases and websites. Note: Colorado gas utilities are required to achieve 22% emissions reduction by 2030; RNG is an approved emissions reduction strategy but not required.

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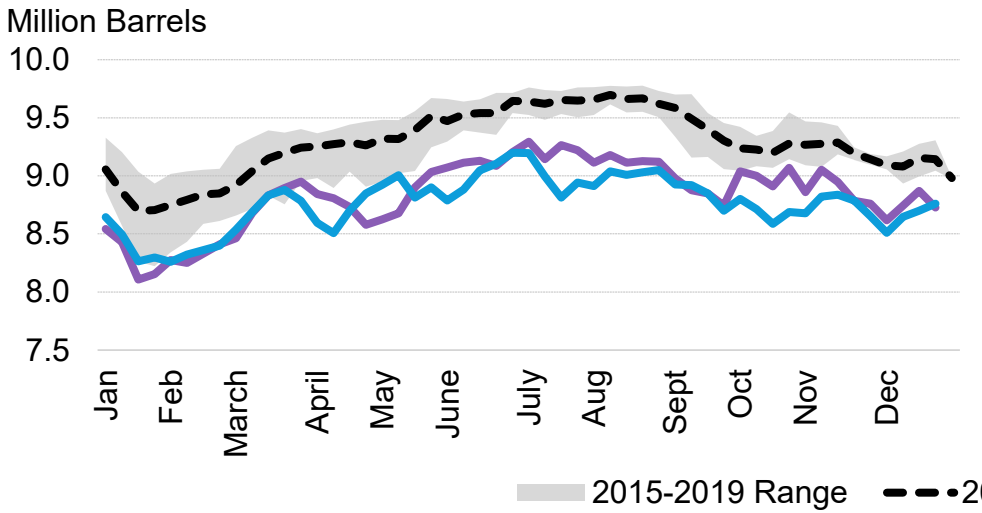
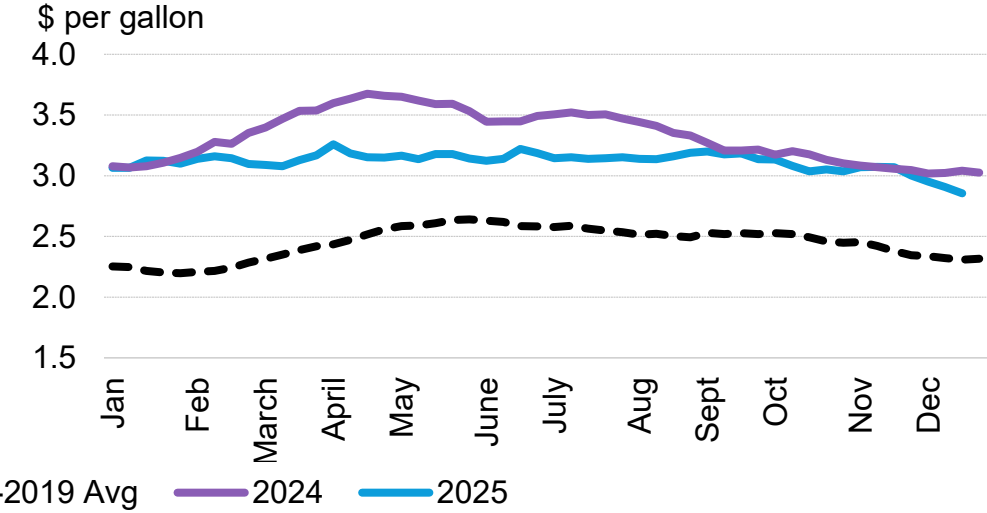
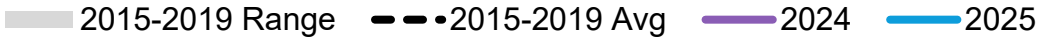
Transportation: Gasoline demand and prices

US gasoline demand



US wholesale gasoline prices



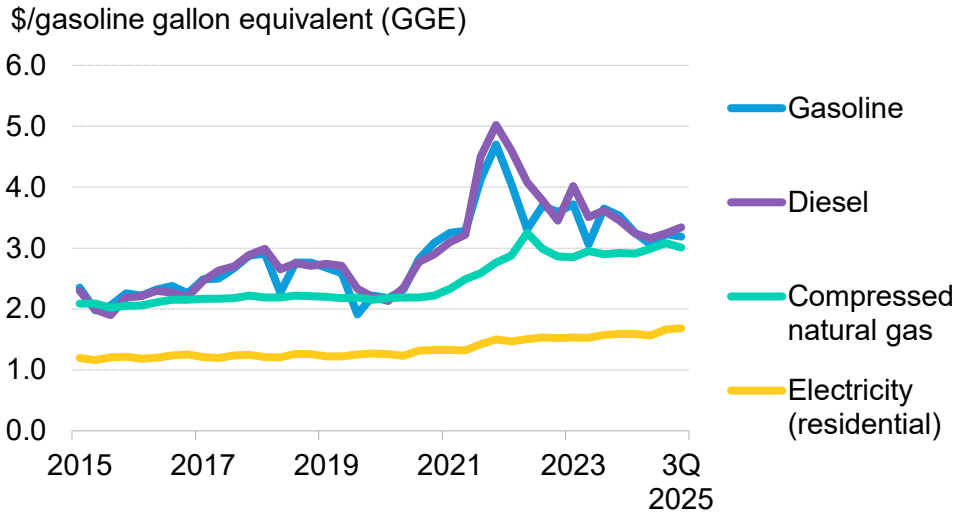


- US gasoline demand was in-line with 2024 in the first half of 2025 but remained lower in the second half of the year. To an even greater extent, consumption trailed well below pre-pandemic (2015-2019) levels. The US consumed an average of 8.76 million barrels a day (b/d) of gasoline in 2025, a slight year-on-year decline of 75,000 b/d from 2024 and nearly 600,000 b/d lower than the 2015-19 average.
- Gasoline prices, meanwhile, were lower year-on-year in 2025 but remained well above pre-pandemic levels, continuing to dampen demand. Wholesale US gasoline prices averaged $3.11 per gallon in 2025, $0.66 per gallon higher than the 2015-19 average. US drivers are highly price-sensitive, and higher gasoline prices have led to demand destruction in recent years.
- Elevated gasoline prices partially resulted from lower global refining capacities, as a number of refineries were shuttered in the previous years owing to weak refining margins. This limited refined product supplies as economies around the world reopened after the pandemic and consumption of refined products recovered, leading to higher gasoline prices.
- There are also non-price structural factors driving lower US gasoline demand. Many workers across the US retain some work-from-home flexibility, reducing the need to commute to work and denting gasoline consumption.

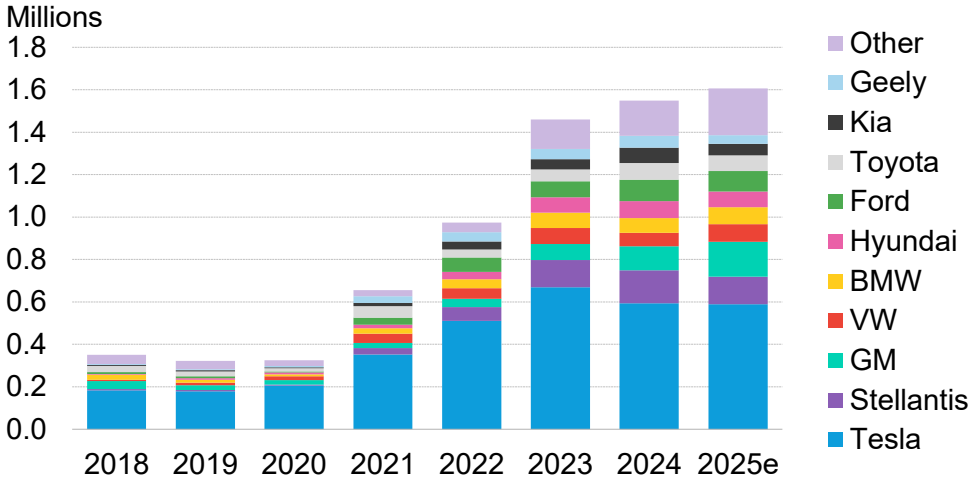
Source: BloombergNEF, EIA, American Automobile Association. Note: Gasoline demand data is the four-week rolling average for gasoline supplied data from the Energy Information Administration (EIA). Wholesale gasoline prices are the daily national average gasoline price.

Transportation: Vehicle fuel prices and EV sales

Average vehicle fuel prices



US electric vehicle sales

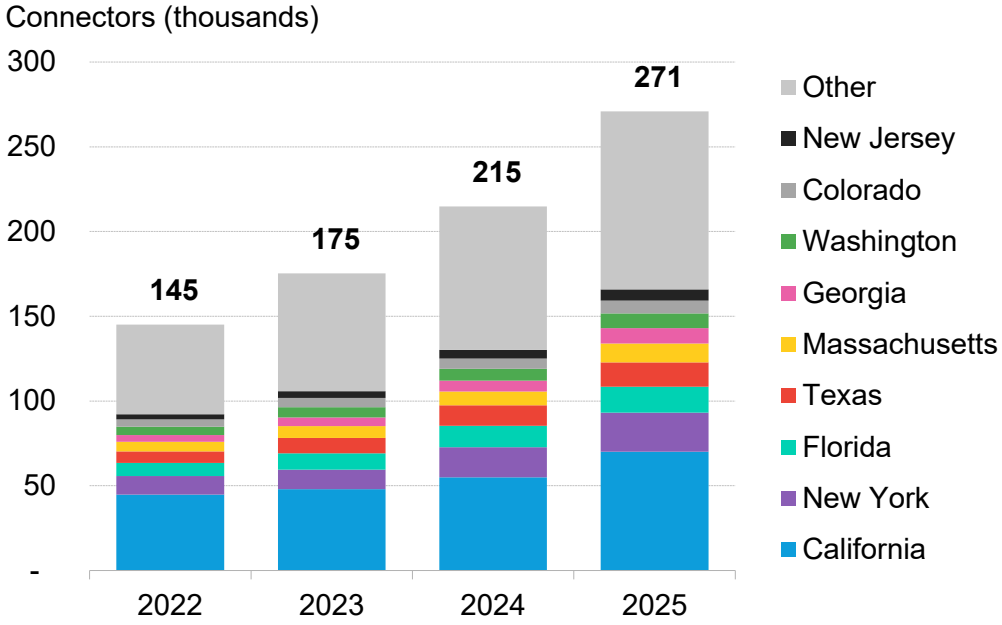


- Gasoline and diesel prices in the US continued to decline in 2025, while compressed natural gas (CNG) prices rose slightly. Gasoline prices averaged $3.16 per gallon in the first three quarters of 2025 – down 7% from the same period last year. Residential electricity prices increased for the fifth consecutive year, up 5% for the same period. Even so, residential charging remains cheaper than refueling, and consumers paid about $1.64 per gasoline gallon equivalent ($/GGE) to charge their electric cars.
- US sales of electric vehicles peaked in 2025 at just over 1.6 million units, representing about 10% of total new passenger vehicle sales. Growth, however, slowed sharply: sales were only 3.7% higher than in 2024, compared with year-on-year growth of nearly 50% in both 2022 and 2023.The flattening of US EV sales came with shifting policies, including the removal of fuel economy constraints that have incentivized automakers to sell more EVs, uncertainty around California's waiver, the elimination of EV tax credits, and additional tariffs that also threaten the supply chain.
- Tesla's US EV sales declined for a second consecutive year, falling roughly 6% in 2025 over last year. Meanwhile, legacy automakers such as GM and VW increased their market shares to about 11% and 6%, up 4 and 2 percentage points, respectively.

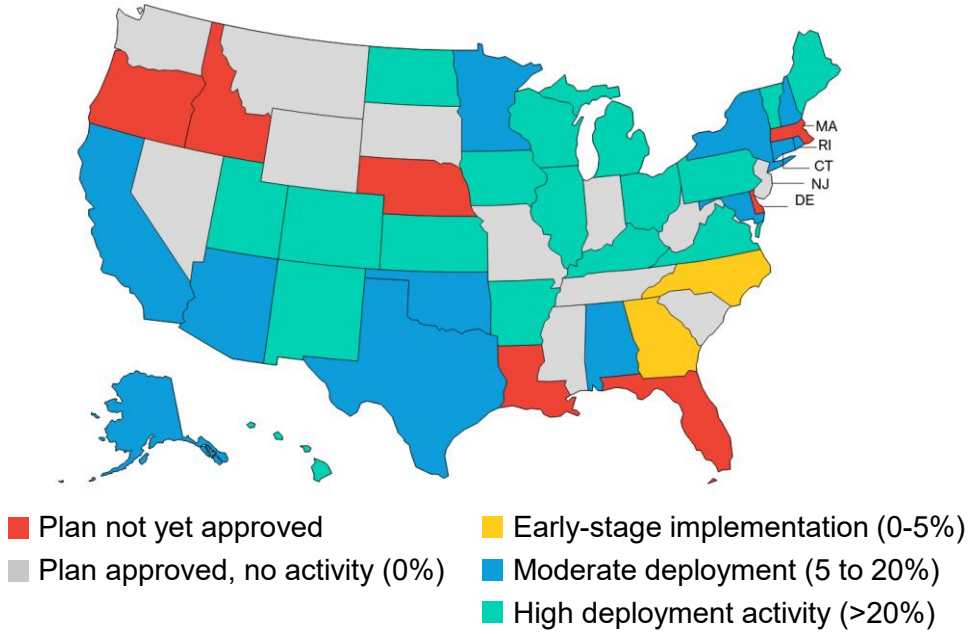
Source: BloombergNEF, MarkLines, US Department of Energy, US Energy Information Administration. Note: Electricity was converted from residential prices to $/gasoline gallon equivalent (GGE). Efficiency metrics used included 1 kilowatt-hour = 3.54 miles driven and 1 kilowatt-hour = 33.7 GGE. EVs include both battery electric and plug-in hybrid vehicles.

Transportation: Public charging

US public EV charging connectors by state



NEVI Formula Program funding deployment

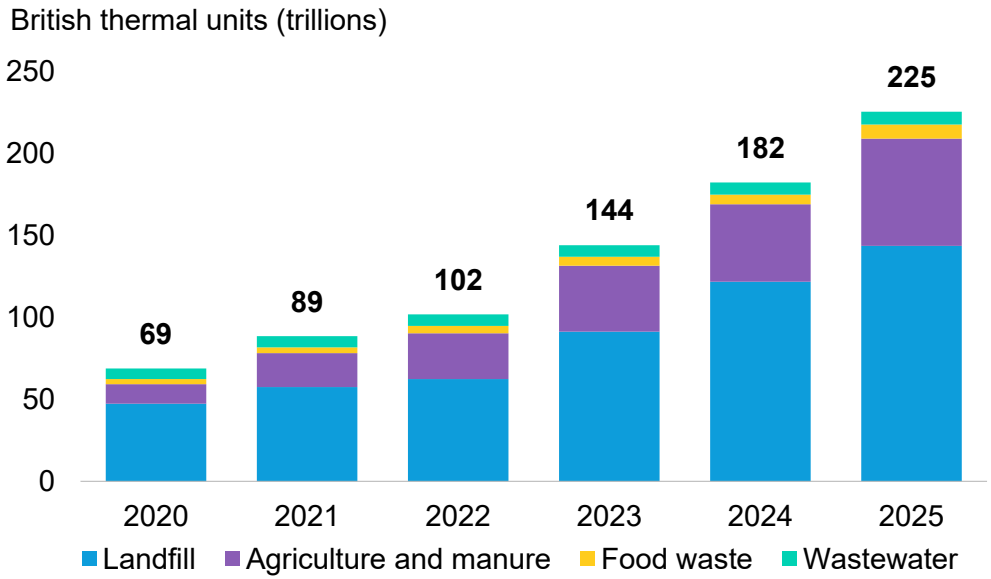


- There are 271,000 public charging connectors installed in the US at the end of 2025. Over a quarter are in California, followed distantly by New York, Florida and Texas. The US lags the rest of the developed world on buildout: China's network is at over 4 million connectors and Europe's over 1 million. Still, the US rollout is accelerating, with installations growing 26% year-on-year in 2025.
- The National EV Infrastructure (NEVI) Formula Program restarted in August 2025 after a court ruling struck down a nearly six-month halt in funding. At least 44 states submitted revised plans in September, and 38 had received approval by November, enabling access to funds just before the end of the year. Through 3Q 2025, only about $600 million of the $5 billion NEVI budget had been awarded to contractors by states, and even less has been obligated or spent. Costs are only reimbursed by the federal government when construction begins.
- The largest subsidized projects thus far have been in California, with Electrify America winning $6.5 million for 62 highway chargers and Zero6 Energy winning over $14 million to build 26 sites in the state.

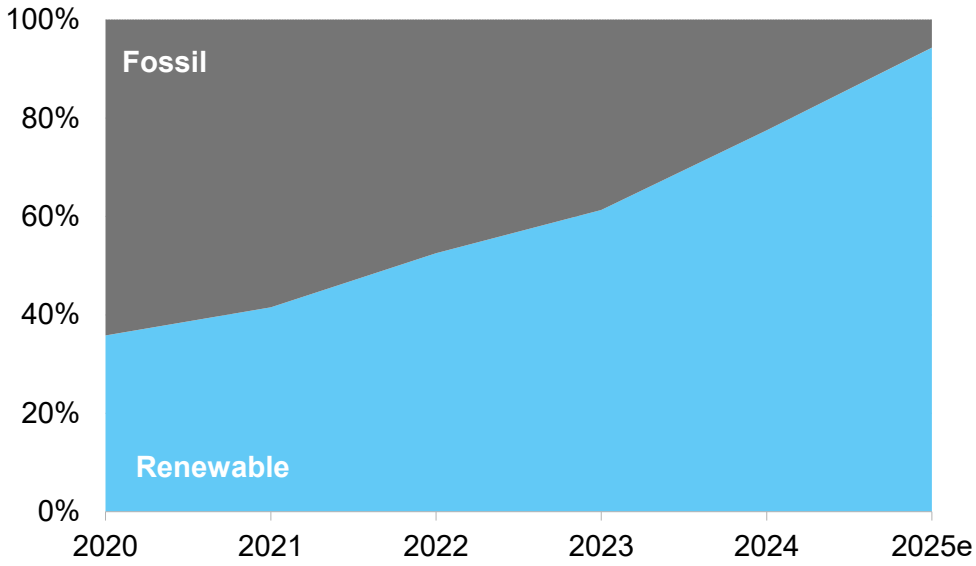
Source: BloombergNEF, Ecomovement, Federal Highway Administration, Joint Office of Energy and Transportation. Note: NEVI funding data as of November 2025. Funding deployment percentage reflects the share of NEVI Formula Program funds a state has obligated to contractors relative to its total apportioned amount.

Transportation: Renewable natural gas supply and vehicle demand

US RNG supply



US natural gas vehicle demand, by source

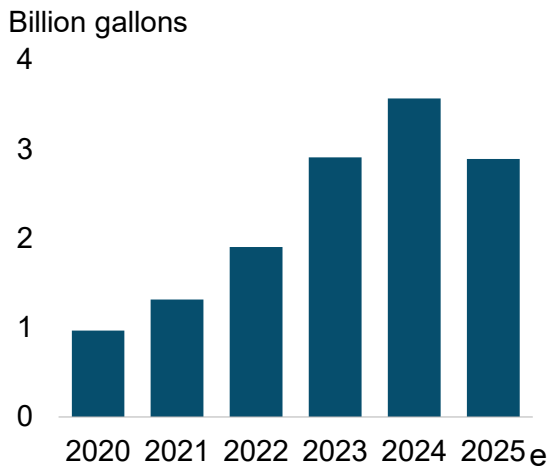


- Renewable natural gas (RNG) supply has grown swiftly over the past decade, driven by market-based incentives such as Renewable Fuel Standard (RFS) and Investment Tax Credits included in the IRA.
- The capacity of RNG in the US grew 24% year-on-year in 2025, led by additions from landfill gas projects and agriculture and manure. This growth was bolstered by the IRA, which extended Section 48 Investment Tax Credits (ITC) to RNG and biogas projects. The ITC offset the cost of new-build RNG facilities by 6-30% for projects that began construction prior to January 1, 2025.
- RNG continues to increase its share of the natural gas vehicle market, accounting for 94% of the fuel used by compressed natural gas and liquified natural gas (CNG/LNG) vehicles in 2025. This growth is driven by two factors: expanding RNG supply and declining overall demand for natural gas vehicles (NGV). BNEF estimates NGV fuel consumption based on the total number of NGV fueling stations available and average throughput per station. The total number of NGV fueling stations fell by 230 (14%), from 1,750 in 2019 to 1,465 in 2025 according to data compiled from the Alternative Fuels Data Center.

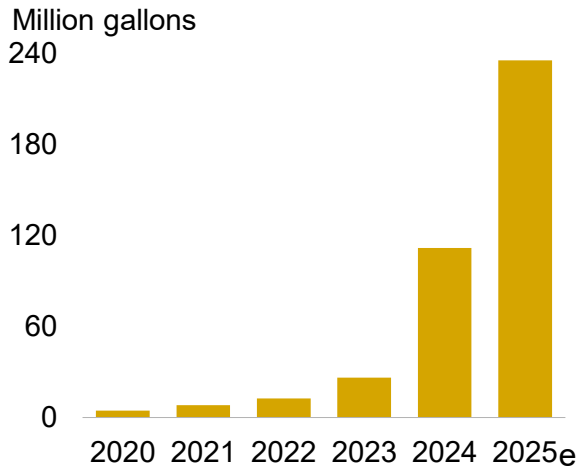
Source: BloombergNEF, American Biogas Council. Demand based on data provided by Environmental Protection Agency and Alternative Fuels Data Center. RNG demand for 2025 annualized based on data through September 2025.

Transportation: Renewable fuel supply and demand

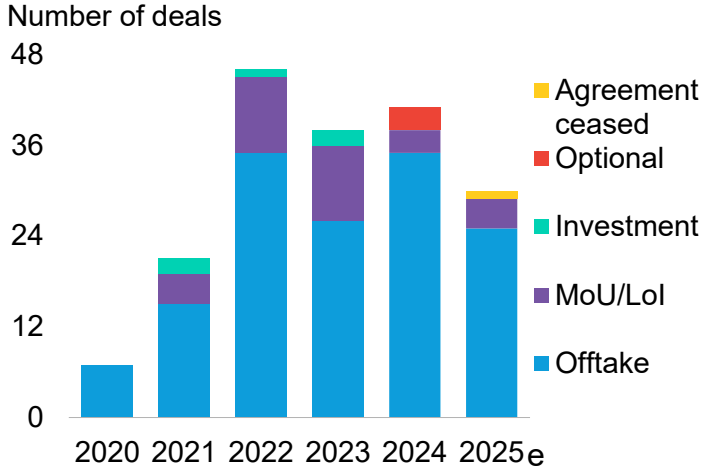
US renewable diesel supply



US SAF supply



Airlines SAF offtake agreements



- Renewable diesel supply is on track to fall 19% year-on-year in 2025, the first decline since supply started to grow in 2020. Imported renewable diesel, which historically made up over 10% of total supply, fell to nearly zero after the expiration of the 40A Blenders Tax Credit (BTC). The BTC's successor, the 45Z Clean Fuel Production Credit, only applies to domestically produced fuels. Domestic renewable diesel production fell by 6% year-on-year in the first three quarters as producer margins remained depressed by weak credit incentives and reduced tax credit values.
- Sustainable aviation fuel (SAF) remains a bright spot for renewable fuels, rising an estimated 111% in 2025 year on year. Domestic production rose a staggering 356% in the first three quarters of 2025 compared to the same period in 2024. Producers such as Phillips 66, Diamond Green Diesel – partially owned by Valero – have announced the completion of over 350 million gallons per year of SAF capacity in the past 18 months. The export opportunity driven by EU SAF mandates, coupled with US federal incentives such as the clean fuel production tax credit which was extended under the OBBBA, contribute to SAF growth. Increasing US domestic demand for jet fuel – 2.3 billion gallons per year over the next 10 years, according the Energy Information Administration (EIA) – also supports scaling cost-competitive US SAF production.
- Globally, airlines signed a total of 29 agreements to procure SAF from January to early December 2025, down 31% compared to the total in 2024. Since airlines cannot absorb the higher cost of SAF, they need to carefully balance purchases with demand from customers trying to offset scope 3 emissions.

Source: BloombergNEF, EPA, company press releases, International Civil Aviation Organization , US Securities and Exchange Commission. Note: SAF stands for sustainable aviation fuel, LoI stands for letter of intent, MoU stands memorandum of understanding. Renewable diesel and SAF supply data annualized based on data through September.

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