Clean Energy States Alliance

LOAD GROWTH

What States Are Doing to Accommodate Increasing Electric Demand

Ana Boyd, Research Fellow
Todd Olinsky-Paul, Senior Project Director
Clean Energy States Alliance

July 2025

About this Report

This report was prepared by Ana Boyd and Todd Olinsky-Paul of the Clean Energy States Alliance (CESA) at the request of CESA's member organizations. The report surveys the causes of electricity load growth—primarily data centers, new manufacturing, and electrification—and what the states are doing to meet the challenge.

About CESA

The Clean Energy States Alliance is a national, nonprofit coalition of public agencies and organizations working together to advance clean energy. CESA works with state leaders, federal agencies, industry representatives, and other stakeholders to develop clean energy programs and inclusive renewable energy markets. CESA members—mostly state agencies—include many of the most innovative, successful, and influential public funders of clean energy initiatives in the country. Learn more at www.cesa.org.

Disclaimer

Contents

Executive Summary

After many years of relatively flat electricity demand, the U.S. is now anticipating dramatic load growth, largely due to rapid deployment of data centers (including crypto mining), electrification, and large new industrial and manufacturing loads. Although load growth has quickly become a subject of concern in many states, there is significant geographic variation in its scale, timing, and sources. This is reflected in the variety of state actions to accommodate load growth.

The key drivers of load growth include:

- **Data Centers:** In 2023, around 80 percent of the national data center load was accounted for by 15 states: Virginia, Texas, California, Illinois, Oregon, Arizona, Iowa, Georgia, Washington, Pennsylvania, New York, New Jersey, Nebraska, North Dakota, and Nevada (ordered from highest to lowest load). More recent data center load forecasts suggest that significant growth will likely be concentrated in Virginia—where data centers already account for 25 percent of statewide electricity consumption—Georgia, Texas, and Pennsylvania. Load increases in Indiana, Ohio, and the Carolinas are also associated with data center load growth.
- **Manufacturing:** Federal investment in new clean energy industries, including computer chips and battery factories, along with other industry onshoring efforts, are driving load growth. The Midwest (PJM and MISO territory), Southeast, and West are expected to see the most new industrial load growth. The states that are expected to see the largest industrial load increases are the Carolinas, Georgia, Kentucky, Tennessee, Illinois, Indiana, Michigan, Ohio, Arizona, California, and Nevada.
- **Electrification:** Building and transportation electrification will also cause load growth. Electrification load growth will likely be more gradual and have greater impact toward the end of this decade and in the 2030s. However, some states including California, New York, and the New England states are already starting to see electrification load growth.

These various load growth drivers have different demand profiles. For example, data centers often operate around the clock and tend to be less flexible, while industrial loads and electrification have more daily variation with different levels of flexibility.

A big challenge facing states is uncertainty around load forecast projections. The future of artificial intelligence (AI) and crypto mining, changes in state policy around electrification and clean energy, and the impact of federal policies on domestic industry and manufacturing all contribute to uncertainty. Additionally, big data centers often scout multiple potential locations for potential development, thereby making it unclear to state regulators and utility planners if and where a particular data center will ultimately be built.

Prior to the recent sharp increase in the rate of load growth, states used a range of supply-side strategies to accommodate business-as-usual (BAU) load growth, including investments in low-cost renewables, storage, and some natural gas capacity alongside energy efficiency and

demand-side programs. Now faced with precipitous load growth, states are employing various strategies to meet the challenge. Most states—especially those with strong clean energy/climate targets—are continuing their existing renewable energy, efficiency, and demand response strategies; however, several states facing high near-term load growth are developing significant new gas capacity and delaying planned retirements of existing fossil-fuel generation plants. Many states are exploring expanded nuclear generation, and utilities are including these resources in their long-term plans.

Rising concern about the cost of meeting new large loads, especially from data centers, has led some state legislatures, regulators, and utilities to develop special large-load tariffs, promote data center efficiency, and limit cost shifts among different customer groups. Some states are also employing tariffs to create partnerships between new clean energy generators and large-load customers with corporate clean energy goals.

This report surveys and summarizes strategies states are employing to cope with significant new load growth. It does not cover all states but instead focuses on the states that are seeing the most load growth and altering their energy planning strategies accordingly. Table 1 below summarizes these strategies.

Load growth forecasts, especially related to data center project development, are rapidly evolving. This report is based on the best available information as of its publication.

Table 1: Overview of State Actions to Address Recent Load Growth[1]

State	New Gas Generation	Fossil-Fuel Retirement Delays*	New Nuclear Technology	Data Center Efficiency Incentives and New Green Tariffs	New Utility Tariffs or Special Requirements to Manage Data Center Risk and Cost Shifts	Notes and Links
Arizona	✓		✓			Arizona Public Service Company (APS) 2023 Integrated Resource Plan, published November 2023, includes new gas generation. APS press release, February 2025: Arizona Electric Utilities Team Up To Explore Adding Nuclear Generation.
California		✓		✓		Legislation would create data center efficiency requirements and incentivize clean energy usage. California has delayed gas plant closures over the past few years due to extreme weather events and reliability concerns.

[1] This table highlights states that are facing recent load growth from data centers, manufacturing, and electrification. It does not include information on demand response, energy efficiency, and renewable energy investment strategies that predate recent load growth spikes or stem primarily from state clean energy commitments.

State	New Gas Generation	Fossil-Fuel Retirement Delays*	New Nuclear Technology	Data Center Efficiency Incentives and New Green Tariffs	New Utility Tariffs or Special Requirements to Manage Data Center Risk and Cost Shifts	Notes and Links
Georgia	✓	✓			✓	Georgia Power 2023 Integrated Resource Plan Update, published October 2023, outlines gas capacity additions. Georgia Power 2025 Integrated Resource Plan, published January 2025, outlines retirement delays. Georgia Public Service Commission press release, January 2025: PSC Approves Rule to Allow New Power Usage Terms for Data Centers.
Indiana	✓	✓	✓		✓	NIPSCO 2024 Integrated Resource Plan, published December 2024, outlines plans to add more gas to meet hyperscale data center load. Indiana Michigan Power 2024 Integrated Resource Plan, published March 2025, includes plans to build small modular reactors. In February 2025, Indiana Utility Regulatory Commission approves settlement agreement creating large load tariff to reduce cost shifts. Duke Energy 2024 Indiana Integrated Resource Plan, published November 2024, includes retirement delays.
Illinois		✓				Vistra Corp 2024 news release, extending Baldwin plant retirement due to MISO reliability concerns.
Louisiana	✓		✓			Entergy Louisiana news release, December 2024: Entergy plans to build new gas generation and commits to exploring nuclear power in collaboration with Meta.
Maryland		✓			✓	Legislation passed in 2025 will require the utility commission to create special rates for large-load customers. FERC approves settlement agreement delaying closure at Talen Energy coal plant due to reliability concerns.
Michigan			✓			Legislation proposed in early 2025 would provide incentives for SMR development.
Nebraska	✓	✓				Nebraska Public Power District extended operations at North Omaha Station and plans to add new gas generation by 2027.

State	New Gas Generation	Fossil-Fuel Retirement Delays*	New Nuclear Technology	Data Center Efficiency Incentives and New Green Tariffs	New Utility Tariffs or Special Requirements to Manage Data Center Risk and Cost Shifts	Notes and Links
Nevada	✓				✓	NV Energy 2024 Integrated Resource Plan, approved in December 2024, includes new gas investments. The Public Utilities Commission of Nevada approves NV Energy's clean transition tariff in March 2025, allowing large customers to partner directly with emerging technology developers.
New York		✓	✓			The New York Independent System Operator opts to delay gas peaker plant closures. In January 2025, New York announced plan to develop Master Plan for Responsible Advanced Nuclear Development.
North Carolina	✓		✓	✓	✓	Duke Energy 2023 Carolinas Integrated Resource Plan Supplemental Planning Analysis includes new gas generation and discussion of advanced nuclear. North Carolina Utilities Commission order, July 2024: Commission approves Duke green tariff for large-load customers.
Ohio	✓				✓	In October 2024, AEP and other stakeholders filed a proposed settlement with the PUC for a large-load tariff. The Ohio Siting Board recently approved new gas plant construction.
Oregon					✓	In June 2025, House Bill 3546 passed, ensuring data centers cover fair share of energy infrastructure costs.
Pennsylvania	✓					In April 2025, developers announced plans to build new gas capacity.
Tennessee	✓		✓			Tennessee Valley Authority (TVA) 2025 Integrated Resource Plan, published September 2024, includes new gas generation. The state, TVA, and other stakeholders are looking to advance new nuclear technology
Texas	✓		✓		✓	Texas PUC in 2024 selects new gas projects. Legislation passed in June 2025, heavily invests in new nuclear technology. Recent legislation requires large-load customers to bear more of the costs of service and allows for mandatory load curtailment.

State	New Gas Generation	Fossil-Fuel Retirement Delays*	New Nuclear Technology	Data Center Efficiency Incentives and New Green Tariffs	New Utility Tariffs or Special Requirements to Manage Data Center Risk and Cost Shifts	Notes and Links
Virginia	✓	✓	✓	✓	✓	Multiple pieces of proposed legislation look to address data center cost shifts and other challenges, but they have not passed (e.g., HB 2101, SB 960, HB 1601, HB 2035. (legislative proposals to reduce cost shifts to other customer groups) SB 960, HB 1601, HB 2035. Dominion Energy 2024 Integrated Resource Plan, published October 2024, includes new gas generation, continued coal plant operations, and plans to explore SMRs.

Overview of Load Growth

Load Growth Drivers

After decades of relatively flat electricity demand, the U.S. is now experiencing significant electrical load growth,[2] with even more projected future growth, primarily driven by data centers, electrification, and new large industrial loads.[3] Recent estimates forecast a 15.8 percent increase in summer peak demand—the maximum load over a specified time period—by 2029 (relative to 2024).[4]

Data centers, driven by the rise in resource-intensive generative artificial intelligence (AI) models, are causing significant near-term electricity service and planning challenges.[5] A recent report by Lawrence Berkeley National Laboratory estimates that data center energy use could account for 6.7-12 percent of forecasted total national electricity consumption for 2028.[6] Data centers present unique grid challenges due to the volume of new operations, the scale of their power demand, and their typical around-the-clock operations.[7]

---

[2] The term "load growth" should primarily be understood to refer to increased peak demand. While overall volumetric electricity demand may increase due to new large loads and electrification of the transportation and building sectors, it is the increase in peak demand that is most concerning to energy planners, and therefore that is the focus of this report.

[3] John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf; *see* also North American Electric Reliability Corporation, "2024 Long-Term Reliability Assessment," December 2024, www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_Long%20Term%20Reliability%20Assessment_2024.pdf.

[4] John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf; *U.S. Energy Information Administration Glossary webpage*, EIA, assessed June 10, 2025 (definition of peak demand).

[5] Quentin Good et al., "Big Data Centers, Big Problems: The Surging Environmental and Consumer Costs of AI, Crypto and Big Data," *Environment America Research & Policy Center; U.S. PIRG Education Fund; Frontier* Group, January 2025, https://publicinterestnetwork.org/wp-content/uploads/2025/01/Big-data-centers-big-problems-January-2025.pdf; Arman Shehabi et al., "2024 United States Data Center Energy Usage Report," *Lawrence Berkeley National Laboratory*, December 2024, https://eta-publications.lbl.gov/sites/default/files/2024-12/lbnl-2024-united-states-data-center-energy-usage-report.pdf.

[6] Arman Shehabi et al., "2024 United States Data Center Energy Usage Report," *Lawrence Berkeley National Laboratory*, December 2024, https://eta-publications.lbl.gov/sites/default/files/2024-12/lbnl-2024-united-states-data-center-energy-usage-report.pdf.

[7] Quentin Good et al., "Big Data Centers, Big Problems: The Surging Environmental and Consumer Costs of AI, Crypto and Big Data," *Environment America Research & Policy Center; U.S. PIRG Education Fund; Frontier* Group, January 2025, https://publicinterestnetwork.org/wp-content/uploads/2025/01/Big-data-centers-big-problems-January-2025.pdf; Jeffrey Sward et al., "Get a Load of This: Regulatory Solution to Enable Better Forecasting of Large Loads,"

A rise in industry onshoring and manufacturing is also expected to contribute to near-term load growth in several parts of the country.[8] This phenomenon is largely related to federal policies such as tariffs on imports and grants for new manufacturing facilities in key sectors.

State plans to electrify the building and transportation sectors–often to meet climate goals–are a third driver of increasing electricity demand.[9] Some areas, like New England, New York, and California, are already seeing load growth from electrification; however, electrification-driven load growth is expected to be more gradual than load growth from other sources, with effects mostly being felt later this decade and in the 2030s.[10]

Hydrogen production could also drive future demand for electricity, but since it is not included in the most current load forecasts, it is not discussed in this report.

Geographic Variation

Load growth is not evenly distributed across the country; some regions anticipate large electricity demand increases while others project modest growth. Additionally, there is significant geographic variation associated with the three main load growth drivers that will affect system impacts and planning timelines.

Data Centers

Data center load growth will likely be concentrated in a few areas across the United States. EPRI noted that in 2023 fifteen states accounted for 80 percent of the national data center load growth: Virginia, Texas, California, Illinois, Oregon, Arizona, Iowa, Georgia, Washington, Pennsylvania, New York, New Jersey, Nebraska, North Dakota, and Nevada.[11] A more recent evaluation by power sector consulting firm Grid Strategies indicates future growth will be

---

RMI, February 2025, https://rmi.org/wp-content/uploads/dlm_uploads/2025/03/Get_a_load_of_this_Load_Forecasting.pdf.

[8] John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf; T Bruce Tsuchida et al., "Electricity Demand Growth and Forecasting in a Time of Change," *The Brattle Group*, May 2024, www.brattle.com/wp-content/uploads/2024/05/Electricity-Demand-Growth-and-Forecasting-in-a-Time-of-Change-1.pdf.

[9] *Id.*

[10] *See id.*

[11] EPRI, "Powering Intelligence: Analyzing Artificial Intelligence and Data Center Energy Consumption," May 28, 2024, https://www.epri.com/research/products/000000003002028905.

concentrated in Virginia, Georgia, Texas, and Pennsylvania.[12] Ohio, the Carolinas, and Indiana are also seeing significant data center driven load growth.[13]

Currently, Virginia is home to the largest cluster of data centers in the world, with an area in Northern Virginia referred to as Data Center Alley accounting for around one quarter of the electricity consumed in the state in 2023, and almost the same proportion of the national data center operational capacity.[14] PJM's 2024 forecast predicts 5.5 percent growth year over year in the transmission zone served by Dominion Energy, a Virginia-based electric utility.[15] Georgia is another state with concentrated data center development, and it is also facing near-term demand pressure from manufacturing.[16] In the past two years, Georgia's 2029 summer peak load forecast increased by 38 percent, with 85 percent of the projected growth from data centers.[17] Data centers are also driving significant local load forecast projections in Texas, according to grid operator the Electric Reliability Council of Texas (ERCOT).[18]

Manufacturing

The Midwest (PJM and MISO territory), Southeast, and West are expected to host the largest new industrial loads.[19] The Inflation Reduction Act, passed in 2022, spurred a lot of this manufacturing

---

[12] John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf.

[13] Zachary Skidmore, "AES Reports 900MW of New Data Center Load Growth across Ohio," *Data Center Dynamics*, November 1, 2024, http://www.datacenterdynamics.com/en/news/aes-reports-900mw-of-new-data-center-load-growth-across-ohio; Ethan Howland, "Indiana Regulators Approve 'Large Load' Interconnection Rules," *Utility Dive*, February 20, 2025, http://www.utilitydive.com/news/indiana-iurc-large-load-interconnection-data-center-aep-amazon-google/740452; Cathy Kunkel, "Data Centers Drive Buildout of Gas Power Plants and Pipelines in the Southeast," *IEEFA*, January 2025, https://ieefa.org/sites/default/files/2025-01/UPDATED-REVIEWED-Southeast%20Gas%20Infrastructure%20and%20Data%20Cente.pdf.

[14] Quentin Good et al., "Big Data Centers, Big Problems: The Surging Environmental and Consumer Costs of AI, Crypto and Big Data," *Environment America Research & Policy Center; U.S. PIRG Education Fund; Frontier* Group, January 2025, https://publicinterestnetwork.org/wp-content/uploads/2025/01/Big-data-centers-big-problems-January-2025.pdf; Kimberly A Sarte et al., "Data Centers in Virginia," *Joint Legislative Audit and Review Commission*, December 9, 2024, https://jlarc.virginia.gov/pdfs/reports/Rpt598.pdf.

[15] Kimberly A Sarte et al., "Data Centers in Virginia," *Joint Legislative Audit and Review Commission*, December 9, 2024, https://jlarc.virginia.gov/pdfs/reports/Rpt598.pdf.

[16] John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf.

[17] *Id.*

[18] "Data Centers and Cryptocurrency Mining in Texas Drive Strong Power Demand Growth," *U.S. Energy Information Administration*, October 3, 2024, http://www.eia.gov/todayinenergy/detail.php?id=63344.

[19] John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf.

growth with large investments in microchip and battery factories.[20] The states expected to see the largest industrial load increases are the Carolinas, Georgia, Kentucky, Tennessee, Illinois, Indiana, Michigan, Ohio, Arizona, California, and Nevada.[21]

Electrification

Load growth from electrification is largely driven by state decarbonization policies and efficiency programs and is therefore geographically specific. It will likely be more gradual than other forms of load growth and will mostly take place in the 2030s. However, electrification load growth is already contributing to higher peak demand in some states, including California, New York, and the New England states.[22]

Demand Profiles of Load Growth Drivers

In addition to geographic variation, the different load growth drivers have differing demand profiles that will affect how they impact the grid and how state and regional entities will need to plan to meet new loads. Data centers usually operate around the clock with limited flexibility, especially when multiple organizations share one facility.[23] Some data centers that are operated by a single company may have a bit more flexibility, but usually they operate pretty steadily across the day and throughout the year.[24] Crypto mining operations—a type of computational infrastructure that differs from a traditional data center—are more flexible and price sensitive, but there is a great deal of uncertainty around their load, causing forecasting challenges.[25]

---

[20] John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf; T Bruce Tsuchida et al., "Electricity Demand Growth and Forecasting in a Time of Change," *The Brattle Group*, May 2024, www.brattle.com/wp-content/uploads/2024/05/Electricity-Demand-Growth-and-Forecasting-in-a-Time-of-Change-1.pdf.

[21] John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf.

[22] John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf; T Bruce Tsuchida et al., "Electricity Demand Growth and Forecasting in a Time of Change," *The Brattle Group*, May 2024, www.brattle.com/wp-content/uploads/2024/05/Electricity-Demand-Growth-and-Forecasting-in-a-Time-of-Change-1.pdf; "Managing the Evolving Grid," *California ISO*, https://www.caiso.com/about/our-business/managing-the-evolving-grid (accessed June 18, 2025).

[23] Jeffrey Sward et al., "Get a Load of This: Regulatory Solution to Enable Better Forecasting of Large Loads," *RMI*, February 2025, https://rmi.org/wp-content/uploads/dlm_uploads/2025/03/Get_a_load_of_this_Load_Forecasting.pdf.

[24] *Id.*

[25] Jeffrey Sward et al., "Get a Load of This: Regulatory Solution to Enable Better Forecasting of Large Loads," *RMI*, February 2025, https://rmi.org/wp-content/uploads/dlm_uploads/2025/03/Get_a_load_of_this_Load_Forecasting.pdf; Arman Shehabi et al., "2024 United States Data Center Energy Usage Report," *Lawrence Berkeley National Laboratory*, December 2024,

Industrial loads often peak during the day, following typical work shifts. However, industrial electrification may provide future opportunities for greater load flexibility.[26] For example, process heat electrification may be used in manufacturing processes using electric boilers and heat pumps; and industrial scale energy storage could also contribute to electric load flexibility.

Residential and commercial electrification loads (e.g., from heat pumps) will tend to peak in the morning before people go to work and then again in the late afternoon/evening.[27] In addition to daily variation, building electrification may shift annual peaks in northern climates. For example, while New York plans to offset a lot of anticipated load growth with energy efficiency improvements, electrification will pose planning challenges as the state is projected to shift from a summer to a winter annual peak as people replace gas heat with electric heat pumps.[28] This trend is not unique to New York. By the mid-2030s, New England will likely have a winter peaking system.[29] Transportation electrification's load shape will also vary to some degree. Residential or commercial overnight charging will peak at night while public fast EV chargers will likely peak during the day.[30]

Load Forecast Uncertainty

Load forecast uncertainty causes major challenges for state policymakers, utilities, and ISO/RTOs.[31] For example, while data center load forecasts from government entities, utilities,

---

https://eta-publications.lbl.gov/sites/default/files/2024-12/lbnl-2024-united-states-data-center-energy-usage-report.pdf.

[26] Jeffrey Sward et al., "Get a Load of This: Regulatory Solution to Enable Better Forecasting of Large Loads," *RMI*, February 2025, https://rmi.org/wp-content/uploads/dlm_uploads/2025/03/Get_a_load_of_this_Load_Forecasting.pdf.

[27] *Id.*

[28] John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf.

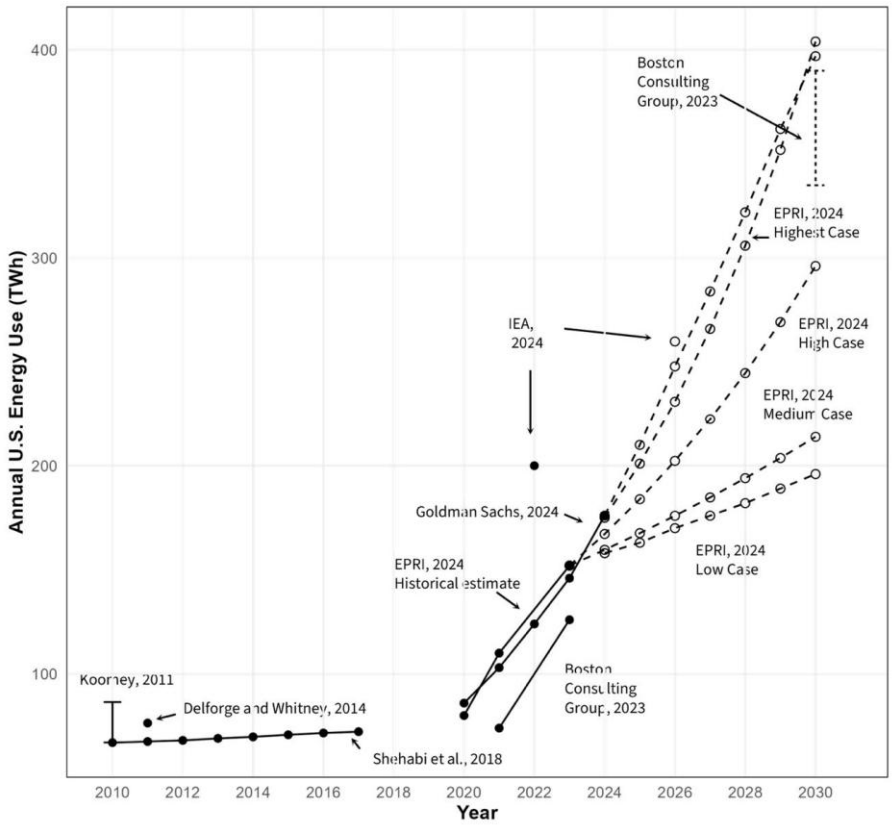
[29] North American Electric Reliability Corporation, "2024 Long-Term Reliability Assessment," December 2024, www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_Long%20Term%20Reliability%20Assessment_2024.pdf.

[30] Jeffrey Sward et al., "Get a Load of This: Regulatory Solution to Enable Better Forecasting of Large Loads," RMI, February 2025, https://rmi.org/wp-content/uploads/dlm_uploads/2025/03/Get_a_load_of_this_Load_Forecasting.pdf.

[31] *See* John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf; Jeffrey Sward et al., "Get a Load of This: Regulatory Solution to Enable Better Forecasting of Large Loads," *RMI*, February 2025, https://rmi.org/wp-content/uploads/dlm_uploads/2025/03/Get_a_load_of_this_Load_Forecasting.pdf.

and consulting firms all show large jumps in electric load in the coming years, there are significant differences between high- and low-growth scenarios and across sources as shown in Figure 1.[32]

Figure 1: Data Center Energy Use Forecasts[33]



Source: Lawrence Berkeley National Laboratory

Uncertainty about data center technology advancements and the future of generative AI models have a particularly large impact on forecasting uncertainty.[34] Additionally, hyperscale data centers—large-scale data centers built by companies deploying cloud-based services like Amazon, Google, or Microsoft[35] —often scout several different locations while in development,

---

[32] Arman Shehabi et al., "2024 United States Data Center Energy Usage Report," *Lawrence Berkeley National Laboratory*, December 2024, https://eta-publications.lbl.gov/sites/default/files/2024-12/lbnl-2024-united-states-data-center-energy-usage-report.pdf.

[33] *Id.*

[34] Arman Shehabi et al., "2024 United States Data Center Energy Usage Report," *Lawrence Berkeley National Laboratory*, December 2024, https://eta-publications.lbl.gov/sites/default/files/2024-12/lbnl-2024-united-states-data-center-energy-usage-report.pdf; EPRI, "Powering Intelligence: Analyzing Artificial Intelligence and Data Center Energy Consumption," May 28, 2024, https://www.epri.com/research/products/000000003002028905.

[35] *Id.*

meaning the same facility may be incorporated into multiple planning forecasts.[36] Additionally, with federal policy shifts, state policymakers may see changes in manufacturing growth and renewed interest in nonrenewable generation, along with reduced federal support for renewables and energy storage.

State Load Growth Strategies

To meet business-as-usual (BAU) load growth, most states have used a mix of strategies, including supply-side investments in low-cost renewable generation and some natural gas generation, as well as energy storage, energy efficiency programs, and demand response. To deal with significantly accelerated load growth, certain states are altering their strategies. Some states are now planning to delay coal plant retirements, while others are looking to invest in significant new gas generation capacity, often specifically citing the data center boom. Several states are also looking to expanded nuclear generation to provide firm capacity, with new nuclear capacity anticipated to come online in the 2030s. On the demand side, several states are looking to incentivize data center energy efficiency. Although many states continue to grow their renewable generation portfolios, often driven by declining costs and climate targets, accelerated load growth is generally not significantly altering those pre-existing state renewable development strategies.

Supply-Side Investments

Gas Generation Build-Out

Several states—even some with commitments to clean energy, such as renewable energy standards and greenhouse gas reduction targets—are looking to expand natural gas generation capacity to meet electricity load growth; and some utilities are returning to past fossil fuels development strategies, citing reliability concerns and need for additional capacity.[37] An analysis by RMI indicates that in Q1 of 2025, 94 gigawatts (GW) of new gas generation was planned to be in service by 2035, 34 GW more than what was planned at the end of 2023.[38] While renewable investments continue to grow, under current plans there will be 40 GW more gas developed than

---

[36] Jeff St. John, "Utilities are flying blind on data center demand. That's a big problem," *Canary Media*, February 25, 2025, https://www.canarymedia.com/articles/utilities/utilities-are-flying-blind-on-data-center-demand-thats-a-big-problem; Neil Kolwey and Howard Geller, "Data Centers: Power Needs and Clean Energy Challenges," *Southwest Energy Efficiency Project*, March 2025, http://www.swenergy.org/wp-content/uploads/SWEEP-data-center-report-2025_3_27.pdf.

[37] *See* Jeremy Fisher et al., "Demanding Better: How Growing Demand for Electricity Can Drive a Cleaner Grid," *Sierra Club*, September 2024, http://www.sierraclub.org/sites/default/files/2024-09/demandingbetterwebsept2024.pdf; Eric Gimon, Mike O'Boyle, and Michelle Solomon, "Meeting Growing Electricity Demand Without Gas," *Energy Innovation*, March 28, 2024, https://energyinnovation.org/report/meeting-electricity-demand-without-growing-gas.

[38] Jon Rea and Ryan Foelske, "The State of Utility Planning*, 2025 Q1*", *RMI*, April 15, 2025, https://rmi.org/the-state-of-utility-planning-2025-q1.

wind and solar by 2035; by comparison, these numbers were roughly even in 2023 integrated resource plans (IRP).[39]

Individual state plans further emphasize that the move to gas is driven by higher load growth projections. In October 2024, Dominion Energy released its 2024 Integrated Resource Plan, unveiling plans to add 5.9 GW of gas capacity over the 15-year planning period and citing both data centers and electrification as key load drivers.[40] In early March 2025, the company filed for approval to construct a 1 GW gas plant with the Virginia State Corporation Commission.[41] Duke Energy and Georgia Power are two other utilities in the Southeast that are investing in new natural gas generation capacity. Duke Energy has cited growing demand driven by data centers, manufacturing, and transportation electrification in the Carolinas.[42] North Carolina state regulators approved Duke's plan to add 3.6 GW of gas-fired generation in 2024.[43] And in light of load growth projections through winter 2030/2031 that are 17 times higher than earlier forecasts, Georgia Power received approval to build 1.4 GW of gas capacity, despite environmental groups and even Microsoft raising concerns with regulators about Georgia Power overestimating data center load and undervaluing renewables.[44]

Other large utilities, such as the Tennessee Valley Authority, Evergy (Kansas), NV Energy, and APS (Arizona) have also included new gas generation in their most recent IRPs to meet load

---

[39] *Id.*

[40] Dominion Energy, "Virginia Electric and Power Company 2024 Integrated Resource Plan," Virginia State Corporation Commission Case No. PUR-2024-00184, filed October 15, 2024, www.dominionenergy.com/about/our-company/irp.

[41] Dominion Energy, "Application of Virginia Electric and Power Company and Request For Limited Waiver," Virginia State Corporation Commission Case No. PUR-2025-0003, filed March 3, 2025, www.scc.virginia.gov/docketsearch/DOCS/845n01!.PDF; Zachary Skidmore, "Dominion Energy Seeks Approval for 1GW Virginia Gas Plant amid Data Center Boom," *Data Center Dynamics*, March 7, 2025, www.datacenterdynamics.com/en/news/dominion-energy-seeks-approval-for-1gw-virginia-gas-plant-amid-data-center-boom.

[42] *See* Duke Energy, "2023 Carolinas Resource Plan: Supplemental Planning Analysis," www.duke-energy.com/-/media/pdfs/our-company/carolinas-resource-plan/supplements/supplemental-planning-analysis.pdf?rev=f134d62ba6d645ccb3de2bc227a0d42d, accessed June 10, 2025; Cathy Kunkel, "Data Centers Drive Buildout of Gas Power Plants and Pipelines in the Southeast," *IEEFA*, January 2025, https://ieefa.org/resources/data-centers-drive-buildout-gas-power-plants-and-pipelines-southeast.

[43] "North Carolina Utilities Commission Issues Order on Carbon Plan," *North Carolina Utilities Commission*, November 1, 2024, https://www.ncuc.gov/documents/2024carbonplanpr.pdf.

[44] Georgia Power, "2023 Integrated Resource Plan Update," Georgia Public Service Commission Docket No. 55378, October 2023, www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/2023-irp-update-main-document.pdf; Diana DiGangi, "Georgia Power Receives Approval to Add 1.4 GW of Natural Gas Generation," *Utility Dive*, April 17, 2024, www.utilitydive.com/news/georgia-power-approval-plant-yates-irp/713404; Maeve Allsup, "Microsoft Says Georgia May Be Overestimating Data Center Load Growth," *Latitude Media*, April 12, 2024, www.latitudemedia.com/news/microsoft-says-georgia-may-be-overestimating-data-center-load-growth.

growth.[45] Similarly, Nebraska Public Power District is planning to add over 600 megawatts (MW) of gas capacity by 2027 to meet growing demand from data centers as well as agricultural and industrial loads.[46] In Indiana, Northern Indiana Public Service Company's (NIPSCO) IRP indicated that it will add more gas capacity to meet hyperscale data center load.[47]

State lawmakers are also moving to increase gas generation in some states. For example, legislators in Maryland recently passed a bill that sets up a process to fast-track new gas plant construction.[48] And as part of an "all of the above" approach to supply-side energy investments, Texas has identified 17 gas-fired generation projects for state-backed loans, although some have been delayed or denied due to supply chain issues.[49]

In parallel with these long-term utility planning proceedings, some utilities and developers are building gas generation facilities to serve specific data center sites. In late 2024, Entergy in Louisiana filed an application with the public service commission (PSC) for approval to build gas generation (2.2 GW) and transmission to mainly serve a Meta-owned data center.[50] Pennsylvania is also already seeing gas plant expansion with developers in the process of building a 4.5 GW

---

[45] Tennessee Valley Authority, "Integrated Resource Plan 2025 Volume I, September 2024, https://tva-azr-eastus-cdn-ep-tvawcm-prd.azureedge.net/cdn-tvawcma/docs/default-source/environment/environmental-stewardship/integrated-resource-plan/2025/draft-2025-irp-volume-1-092324.pdf?sfvrsn=26f01b64_1 (TVA lays out gas additions to maintain reliability and meet load growth); Amy Alonzo, "Ordered to Close Its Last Coal Plant, NV Energy Will Now Burn a Different Fossil Fuel," *The Nevada Independent*, February 9, 2025, https://thenevadaindependent.com/article/ordered-to-close-its-last-coal-plant-nv-energy-will-now-burn-a-different-fossil-fuel (NV Energy is growing its gas fleet citing increased demand from data centers.); Arizona Public Service Company, "2023 Integrated Resource Plan" November 2023, www.aps.com/-/media/APS/APSCOM-PDFs/About/Our-Company/Doing-business-with-us/Resource-Planning-and-Management/APS_IRP_2023_PUBLIC.pdf?la=en&sc_lang=en&hash=DF34B49033ED43FF0217FC2F93A0BBE6 (references data centers and other industries as sources of future load growth); Jeffrey Tomich, "Kansas Utility Eyes Gas Plants to Meet Rising Power Demand," *E&E News*, October 22, 2024, www.eenews.net/articles/kansas-utility-eyes-gas-plants-to-meet-rising-power-demand (Evergy planning to build two 705 MW gas plants to serve growing economy).

[46] "NPPD begins process to add new generation for future growth" *Nebraska Public Power District*, February 8, 2024, www.nppd.com/press-releases/nppd-begins-process-to-add-new-generation-for-future-growth.

[47] Northern Indiana Public Service Company, "2024 Integrated Resource Plan" December 9, 2024, www.nipsco.com/docs/librariesprovider11/rates-and-tariffs/irp/nipsco_2024-irp.pdf.

[48] Akielly Hu, "Maryland's Sweeping New Energy Legislation Is a Mixed Bag for Climate," *Canary Media*, April 10, 2025, www.canarymedia.com/articles/clean-energy/maryland-solar-gas-nuclear-legislation.

[49] Robert Walton, "Texas PUC Selects 17 Gas-Fired Projects Totaling Almost 10 GW for Possible Loans," *Utility Dive*, August 30, 2024, www.utilitydive.com/news/texas-regulators-select-17-gas-fired-projects-10-gw-TEF-loans/725740; Jason Plautz, "Want to Build a Gas Plant? Get in Line.," *E&E News*, April 22, 2025, www.eenews.net/articles/want-to-build-a-gas-plant-get-in-line.

[50] Darrell Proctor, "Entergy Louisiana Eyes 2.2 GW of New Gas-Fired Generation to Support Data Center Demand," *POWER Magazine*, November 19, 2024, www.powermag.com/entergy-louisiana-eyes-2-2-gw-of-new-gas-fired-generation-to-support-data-center-demand.

gas facility on the site of a retired coal plant to serve a data center campus.[51] A similar story is playing out in Ohio.[52]

Utilities Delaying Fossil Plant Retirements

Not only are states and utilities planning to build new gas generation, but several states are delaying planned retirements of existing coal and gas units due to load growth. Frontier Group, the research and policy development arm of Public Interest Network, estimates that 9,100 MW of fossil generation will have closure delays.[53] For example, with the planned addition of new transmission capacity, two West Virginia coal plants will likely be kept online to power data centers in Northern Virginia.[54] A similar scenario is playing out in Georgia, as Georgia Power now plans to extend the lives of two coal plants and another fossil plant[55] totaling over 4,000 MW through the 2030s due to load growth.[56] Additionally, regulators approved a deal between Georgia Power and Mississippi Power for generation from an aging Mississippi coal plant, delaying its retirement from 2028 to the mid-2030s.[57] A utility in Illinois recently delayed the retirement of a 1,185 MW coal plant until 2027 due to MISO reliability concerns.[58] And regional grid operator PJM

---

[51] Ethan D Howland, "Largest US Gas-Fired Power Plant Planned for Data Centers in Pennsylvania | Utility Dive," *Utility Dive*, April 3, 2025, www.utilitydive.com/news/homer-city-gas-fired-power-station-data-center-firstenergy/744332.

[52] Darrell Proctor, "More Natural Gas-Fired Plants Planned to Support Ohio Data Centers," *POWER Magazine*, March 25, 2025, www.powermag.com/more-natural-gas-fired-plants-planned-to-support-ohio-data-centers.

[53] Quentin Good et al., "Big Data Centers, Big Problems: The Surging Environmental and Consumer Costs of AI, Crypto and Big Data," *Environment America Research & Policy Center; U.S. PIRG Education Fund; Frontier* Group, January 2025, https://publicinterestnetwork.org/wp-content/uploads/2025/01/Big-data-centers-big-problems-January-2025.pdf.

[54] Antonio Olivo, "Internet Data Centers Are Fueling Drive to Old Power Source: Coal," *Washington Post*, April 17, 2024, www.washingtonpost.com/business/interactive/2024/data-centers-internet-power-source-coal.

[55] Plant Gaston, located in Alabama, Unit 1 operates on oil and the other units were converted from coal to gas with coal backup power. Georgia Power, 2025 Integrated Resource Plan, Georgia Public Service Commission Docket No. 56002, January 2025, www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/2025-Integrated-Resource-Plan.pdf.

[56] Georgia Power, 2025 Integrated Resource Plan, Georgia Public Service Commission Docket No. 56002, January 2025, www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/2025-Integrated-Resource-Plan.pdf; Sonal Patel, "Georgia Power to Keep Coal, Gas Power Plants Running Longer as Demand Climbs," *POWER Magazine*, February 5, 2025, www.powermag.com/georgia-power-to-keep-coal-gas-power-plants-running-longer-as-demand-climbs-2.

[57] Daniel Tait, "Southern Company Extends Life of Coal Plants to Power Data Centers, Appears to Abandon Net Zero Goal" *Energy and Policy Institute*, February 20, 2025, https://energyandpolicy.org/southern-company-extends-life-of-coal-plants-to-power-data-centers-appears-to-abandon-net-zero-goal/; Emily Jones, "Why Mississippi Coal Is Powering Georgia's Data Centers," *WABE*, August 27, 2024, www.wabe.org/why-mississippi-coal-is-powering-georgias-data-centers.

[58] "Vistra Connects Two Utility-Scale Solar Facilities to Grid and Extends Operations of Baldwin Power Plant in Response to Reliability Concerns in MISO," *Vistra Corp.*, December 17, 2024, https://investor.vistracorp.com/2024-

recently reached a deal with a coal-plant operator in Maryland to delay a plant closure by four years for similar reasons. Even New York, a state deeply committed to climate action, delayed the retirement of gas peaker plants in late 2023 due to reliability concerns and growing demand.[59]

The fossil fuel generation retirement delays cited above predate the recent federal administration change. It is anticipated that new federal policy priorities will reinforce this trend. For example, even before President Trump took office, Bloomberg reported that Duke Energy's CFO indicated the utility would likely reevaluate its coal generation plans if Trump followed through with loosening restrictions on pollution from coal plants.[60]

Fossil Development Threatening Clean Energy Targets

Some states that are now emphasizing natural gas electricity generation are doing so despite their own renewable energy standards and greenhouse gas emissions reduction targets. For example, North Carolina state regulators waived the requirement that Duke's IRP achieve the state's 70 percent emissions reduction target by 2030 while approving the utility's plan to add 3.6 GW of new gas-fired generation.[61] Similarly in Virginia, Dominion's fossil fuel investments are not in line with the Virginia Clean Economy Act (VCEA). Dominion indicated in its 2024 IRP filing that it will not meet VCEA renewable requirements for some years between 2024 and 2040, and its 2023 IRP indicated that Dominion does not expect to retire all carbon-emitting assets by 2045 as outlined in the law due to increasing load forecasts.[62] VCEA does include an avenue to seek an exemption from the requirements based on threats to reliability.[63]

12-17-Vistra-Connects-Two-Utility-Scale-Solar-Facilities-to-Grid-and-Extends-Operations-of-Baldwin-Power-Plant-in-Response-to-Reliability-Concerns-in-MISO.

[59] Robert Walton, "NYISO to Keep 4 NYC Peakers Running Past Planned 2025 Retirement to Maintain Reliability," *Utility Dive*, November 21, 2023, www.utilitydive.com/news/nyc-peakers-planned-2025-retirement-remain-online-reliability-must-run-nyiso/700417.

[60] Josh Saul, "Duke Energy to Revisit Coal Plans If Trump Axes Pollution Rules," *Bloomberg*, November 7, 2024, www.bloomberg.com/news/articles/2024-11-07/trump-plans-may-spur-duke-energy-to-reconsider-coal-plant-shift.

[61] Order Accepting Stipulation, Granting Partial Waiver of Commission Rule R8-60a(D)(4), and Providing Further Direction for Future Planning, *North Carolina Utilities Commission*, Docket No. E-100, SUB 190, November 1, 2024, https://starw1.ncuc.gov/NCUC/ViewFile.aspx?Id=cfc6d586-12e4-447f-a552-757d6e73c30e; "North Carolina Utilities Commission Issues Order on Carbon Plan," *North Carolina Utilities Commission*, November 1, 2024, https://www.ncuc.gov/documents/2024carbonplanpr.pdf.

[62] Kimberly A Sarte et al., "Data Centers in Virginia," *Joint Legislative Audit and Review Commission*, December 9, 2024, https://jlarc.virginia.gov/pdfs/reports/Rpt598.pdf.

[63] Diana DiGangi, "Dominion Energy Projects Adding up to 9 GW of Gas-Fired Capacity in Virginia to Bolster Reliability," *Utility Dive*, May 4, 2023, www.utilitydive.com/news/dominion-virginia-resource-plan-reliability-natural-gas-coal-renewables-youngkin/649377.

States Looking to Expanded Nuclear Generation

Many states are giving additional attention to nuclear power, seeking ways to ensure that new small modular reactors (SMR) are built, while data center owners are also trying to take advantage of existing or shuttered traditional nuclear capacity. SMRs are not yet operational in the U.S. but some states are looking to them to meet future demand.

An example is Virginia. In the 2022 Virginia Energy Plan, the governor announced the state would build an SMR within the next 10 years.[64] In 2024, VA Senate Bill 454 helped facilitate an SMR research and development process, by allowing Dominion to rate base project development costs for one SMR facility.[65] Similarly, state legislators in Indiana are advancing legislation to allow utilities to recover early-stage SMR project planning costs, arguing that nuclear power is needed to meet data center demand.[66] And in January 2025, Governor Hochul of New York announced a new process to develop a master plan for advanced nuclear development.[67] New York is looking to advanced nuclear power as a dispatchable clean resource to replace fossil plants and meet load growth.[68]

In some cases, states that had previously ruled out new nuclear generation are reconsidering that decision. For example, some California lawmakers have discussed relaxing the state's nuclear moratorium to pursue new nuclear technology.[69] Other states looking to create incentives and relax permitting to accelerate SMR deployment include Arizona, Michigan Tennessee, Texas, and Utah.[70]

---

[64] "Nuclear Energy: Virginia's Energy Safety Net," *Virginia Energy*, accessed June 19, 2025, https://energy.virginia.gov/renewable-energy/Nuclear.shtml#main.

[65] "Virginia Senate Bill 454," *LegiScan*, 2024, https://legiscan.com/VA/text/SB454/id/2989430.

[66] Kari Lydersen, "Indiana Utilities Want Ratepayers to Fork out for Small Nuclear Reactors," *Canary Media*, March 19, 2025, www.canarymedia.com/articles/nuclear/indiana-small-nuclear-reactor-bills-ratepayers; Rebecca Thiele, "The Public Gets One More Chance to Testify on Bill to Bolster Nuclear, Retain Coal on Customer Dime," *Indiana Public Radio*, March 28, 2025, https://indianapublicradio.org/news/2025/03/the-public-gets-one-more-chance-to-testify-on-bill-to-bolster-nuclear-retain-coal-on-customer-dime.

[67] "Advanced Nuclear Energy," *NYSERDA,* www.nyserda.ny.gov/All-Programs/Advanced-Nuclear-Energy (accessed June 19, 2025).

[68] "Blueprint for Consideration of Advanced Nuclear Energy Technologies," *NYSERDA*, January 2025, available at www.nyserda.ny.gov/All-Programs/Advanced-Nuclear-Energy.

[69] Alex Shultz, "Artificial Intelligence Is Bringing Nuclear Power Back from the Dead — Maybe Even in California," *CalMatters*, January 30, 2025, http://calmatters.org/economy/technology/2025/01/artificial-intelligence-is-bringing-nuclear-power-back-from-the-dead-maybe-even-in-california.

[70] Associated Press, "New Wave of Smaller, Cheaper Nuclear Reactors Sends US States Racing to Attract the Industry," *Power Engineering*, March 31, 2025, www.power-eng.com/nuclear/smrs/new-wave-of-smaller-cheaper-nuclear-reactors-sends-us-states-racing-to-attract-the-industry; Darrell Proctor, "Arizona Utilities Announce Effort to Add More In-State Nuclear Power," *POWER Magazine*, February 5, 2025, www.powermag.com/arizona-utilities-announce-effort-to-add-more-in-state-nuclear-power.

In addition to states, several utilities include SMRs in their long-term plans. Both of Virginia's large investor-owned utilities, Dominion and Appalachian Power, have indicated interest in SMRs in their resource plans. Specifically, Dominion said it will evaluate the cost and feasibility of SMRs and include them in its modeled portfolio, starting in the early- to mid-2030s.[71] In October 2024, Dominion announced it was working with Amazon on SMR development and cited the technology as essential to meeting demand growth.[72] In late 2024, Appalachian Power, which also sees SMRs as key to meeting future demand, identified a potential site for an SMR project.[73] In early 2025, the Tennessee Valley Authority, along with a group of utilities and industry partners, applied to the U.S. Department of Energy (DOE) for an $800 million grant for SMRs.[74] In Indiana, two utilities have incorporated SMRs into their resource plans; Indiana Michigan Power included SMRs in its preferred portfolio starting in the mid-2030s, while NIPSCO identified them as a future technology in its recent IRP. [75] Additionally in Louisiana, Entergy and Meta (owner of the large data center Entergy is planning to serve with new gas generation) have committed to exploring SMRs and other nuclear technologies.[76]

Beyond state policy and utility planning, large data center operators are looking to new and existing nuclear power, in addition to geothermal and long-duration storage, for firm clean capacity.[77] For example, Amazon has committed to investing in SMRs and Google plans to

---

[71] Dominion Energy, "Virginia Electric and Power Company 2024 Integrated Resource Plan," Virginia State Corporation Commission Case No. PUR-2024-00184, filed October 15, 2024, https://cdn-dominionenergy-prd-001.azureedge.net/-/media/content/global/irp/2024-irp-w_o-appendices.pdf?rev=a2d28df5b0c34b99a3b321faf59b1c53.

[72]"Dominion Energy and Amazon to Explore Advancement of Small Modular Reactor (SMR) Nuclear Development in Virginia," *Dominion Energy*, October 16, 2024, https://investors.dominionenergy.com/news/press-release-details/2024/Dominion-Energy-and-Amazon-to-explore-advancement-of-Small-Modular-Reactor-SMR-nuclear-development-in-Virginia/default.aspx.

[73] "Appalachian Power Explores Small Modular Reactors to Meet Future Energy Demand in Virginia," *Appalachian Power*, November 14, 2024, www.appalachianpower.com/company/news/view?releaseID=9865.

[74] "TVA, State and Industry Leaders Unite to Accelerate SMR Deployment," *Tennessee Valley Authority*, January 17, 2025, www.tva.com/news-media/releases/tva--state-and-industry-leaders-unite-to-accelerate-smr-deployment.

[75] Indiana Michigan Power, "Indiana Integrated Resource Planning Report," March 28, 2025, www.indianamichiganpower.com/lib/docs/community/projects/IM-irp/2025/IndMich_2024_IN_IRP_Report_032825.pdf; Northern Indiana Public Service Company, "2024 Integrated Resource Plan" December 9, 2024, www.nipsco.com/docs/librariesprovider11/rates-and-tariffs/irp/nipsco_2024-irp.pdf.

[76] "Entergy Louisiana to Power Meta's Data Center in Richland Parish," *Entergy*, December 5, 2024, www.entergynewsroom.com/news/entergy-louisiana-power-meta-s-data-center-in-richland-parish.

[77] Lori Bird, Andrew Light, and Ian Goldsmith, "US Clean Power Development Sees Record Progress, As Well As Stronger Headwinds," *World Resources Institute*, February 21, 2025, www.wri.org/insights/clean-energy-progress-united-states; Lisa Martine Jenkins, "Google's Accelerated Urgency for Clean, Firm Power," *Latitude Media*, May 24, 2024, www.latitudemedia.com/news/googles-accelerated-urgency-for-clean-firm-power.

purchase power from SMRs owned by Kairos Power.[78] In addition to exploring new nuclear technologies, data centers are looking to take advantage of existing and even shuttered nuclear capacity. For example, Microsoft made a deal with the owner of the shuttered Three Mile Island nuclear plant in Pennsylvania, under which the plant will restart to supply several data centers.[79] Similarly, Amazon has looked to directly connect to the Susquehanna plant in Pennsylvania to power a data center it is building next to the plant. While the Federal Regulatory Commission (FERC) rejected this request, it is clear that data center operators are interested in traditional nuclear capacity.[80]

Investing in Renewable Energy and Energy Storage

Renewable energy has been on the rise for many years, driven by state clean energy goals and declining costs, and recent years have seen a trend of leading renewable energy states adopting energy storage targets alongside RPS and 100 percent clean energy goals. Taken as a whole, the U.S. seems likely to continue growing its renewable and storage capacity.[81] In 2024, solar deployment was at a record high and battery storage installed capacity nearly doubled, from 17 GW in Q1 to almost 29 GW in Q4 2024.[82] Some states have been proactively planning to electrify the building and transportation sectors while investing in renewable energy and storage to meet aggressive climate goals for several years. For example, New York plans to deploy 30,000 MW of distributed and utility-scale renewable resources by 2030 and an additional 9,000 MW of offshore wind by 2035.[83] However, it also anticipates needing 20,000 MW of clean dispatchable

---

[78] Lori Bird, Andrew Light, and Ian Goldsmith, "US Clean Power Development Sees Record Progress, As Well As Stronger Headwinds," *World Resources Institute*, February 21, 2025, www.wri.org/insights/clean-energy-progress-united-states.

[79] C. Mandler, "Three Mile Island Nuclear Plant Will Reopen to Power Microsoft Data Centers," *NPR*, September 20, 2024,www.npr.org/2024/09/20/nx-s1-5120581/three-mile-island-nuclear-power-plant-microsoft-ai.

[80] "Data Center Owners Turn to Nuclear as Potential Electricity Source," *U.S. Energy Information Administration*, October 1, 2024, www.eia.gov/todayinenergy/detail.php?id=63304; Zachary Skidmore, "FERC Upholds Rejection of Proposed Interconnection Agreement between AWS Data Center and Pennsylvania Nuclear Plant," *Data Center Dynamics*, April 14, 2025, www.datacenterdynamics.com/en/news/ferc-upholds-rejection-of-proposed-interconnection-agreement-between-aws-data-center-and-pennsylvania-nuclear-plant.

[81] *See* "Solar, Battery Storage to Lead New U.S. Generating Capacity Additions in 2025," *U.S. Energy Information Administration*, February 24, 2025, www.eia.gov/todayinenergy/detail.php?id=64586; Marlene Motyka et al., "2025 Renewable Energy Industry Outlook," *Deloitte*, December 8, 2024, www.deloitte.com/us/en/insights/industry/renewable-energy/renewable-energy-industry-outlook.html; Lori Bird, Andrew Light, and Ian Goldsmith, "US Clean Power Development Sees Record Progress, As Well As Stronger Headwinds," *World Resources Institute*, February 21, 2025, www.wri.org/insights/clean-energy-progress-united-states.

[82] Lori Bird, Andrew Light, and Ian Goldsmith, "US Clean Power Development Sees Record Progress, As Well As Stronger Headwinds," *World Resources Institute*, February 21, 2025, www.wri.org/insights/clean-energy-progress-united-states; "Short-Term Energy Outlook," *U.S. Energy Information Administration*, June 2025, www.eia.gov/outlooks/steo/pdf/steo_full.pdf.

[83] "Renewable Energy," *NYSERDA*, www.nyserda.ny.gov/Impact-Renewable-Energy (accessed June 20, 2025).

power.[84] California has also recently made huge investments in energy storage to meet peak demand and address renewable energy variability.[85] The California ISO (CAISO) now operates over 11,000 MW of energy storage.[86]

Some states that plan to increase their gas generation capacity are also growing their renewable energy portfolios but have not significantly altered their renewable energy strategies in response to load growth. For example, Dominion's 2024 IRP indicates plans to add 21 GW of clean energy—including 4.5 GW of new battery storage—by 2039.[87] This represents an increase in its battery storage plans along with a continuation of renewable energy plans outlined in its previous IRP.[88] Georgia is another example of a state that has not significantly altered its renewable energy strategy in light of recent load growth. In its 2022 IRP, prior to the huge jump in load growth projections, Georgia Power almost doubled its planned renewable resources.[89] Georgia Power continued this trend in its more recent plans, with its renewable energy expansion plan outlining renewable resource additions by 2035.[90] However, renewables will only make up a small percentage of Georgia Power's energy needs over the next six years.[91] Texas, too, continues to make substantial investments in renewables and battery storage; however, procuring low-cost

---

[84] "Advanced Nuclear Energy," *NYSERDA*, www.nyserda.ny.gov/All-Programs/Advanced-Nuclear-Energy (accessed June 20, 2025).

[85] Dennis Wamsted and Seth Feaster, "The Energy Transition: 2019-24 and Beyond," *IEEFA*, January 30, 2025, https://ieefa.org/resources/energy-transition-2019-24-and-beyond.

[86] *Id.*

[87] Diana DiGangi, "Dominion Unveils Plans to Add 21 GW of Clean Energy, 5.9 GW of Gas Generation by 2039 | Utility Dive," *Utility Dive*, October 16, 2025, https://www.utilitydive.com/news/dominion-integrated-resource-plan-irp-renewables-natural-gas/729989/ (1.34 GW of the clean energy planned is from nuclear).

[88] Dominion Energy, "Virginia Electric and Power Company 2023 Integrated Resource Plan," Virginia State Corporation Commission Case No. PUR-2023-00066, filed May 1, 2023, www.scc.virginia.gov/docketsearch/DOCS/7rwl01!.PDF (planned wind capacity increases from around 3,040 MW to 3,460 MW and solar by around 1 GW between the 2023 and 2025 IRP).

[89] "Georgia Power Files Plan Preparing for Future Energy Landscape, Building upon Solid Foundation to Meet Needs of Customers and State," *Georgia Power*, February 12, 2021, www.georgiapower.com/news-hub/press-releases/georgia-power-files-plan-preparing-for-future-energy-landscape.html.

[90] Georgia Power, "2023 Integrated Resource Plan Update," Georgia Public Service Commission Docket No. 55378, October 2023, www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/2023-irp-update-main-document.pdf; Georgia Power, "2025 Integrated Resource Plan," Georgia Public Service Commission Docket No. 56002, January 2025, https://www.georgiapower.com/content/dam/georgia-power/pdfs/company-pdfs/2025-Integrated-Resource-Plan.pdf.

[91] "Grading Georgia Power's 2025 Energy Plan," *Sierra Club*, March 24, 2025, https://www.sierraclub.org/georgia/IRP2025.

renewable energy is not a new trend for the state. Renewable generation in Texas has almost tripled since 2015 and is playing a significant role in meeting recent demand increases. [92]

In some states, barriers to deploying renewable generation and energy storage may be hindering the ability of these resources to respond to accelerated load growth. These barriers include interconnection and siting delays, capacity accreditation considerations, and system reliability needs.[93] In its quarterly utility IRP planning review, RMI highlighted that the capacity accreditation value given to renewables, along with limits on wind and solar additions imposed as utility modeling constraints, have contributed to the rise in gas capacity additions.[94] As mentioned above, system reliability needs, amplified by load growth, are also driving interest in less variable, more dispatchable resources.[95]

Demand-Side Investment

Energy Efficiency

Virtually all states have some type of energy efficiency program, but their scale varies significantly from state to state.[96] State efficiency program expansion trends largely predate recent load increases and are often tied to climate goals and affordability initiatives. For example, states like New York include aggressive efficiency targets in their climate laws, enabling increased efficiency to offset a significant portion of their near-term load growth.[97]

---

[92] Dennis Wamsted and Seth Feaster, "The Energy Transition: 2019-24 and Beyond," *IEEFA*, January 30, 2025, https://ieefa.org/resources/energy-transition-2019-24-and-beyond.

[93] Jamie McDevitt-Galles et al., "Waiting in Queue: RMI's Solutions to the Gridlocked US Power Sector," *RMI*, September 4, 2024, https://rmi.org/waiting-in-queue-rmis-solutions-to-the-gridlocked-us-power-sector/; "Grid Connection Backlog Grows by 30% in 2023, Dominated by Requests for Solar, Wind, and Energy Storage," *Lawrence Berkeley National Laboratory*, April 10, 2024, https://emp.lbl.gov/news/grid-connection-backlog-grows-30-2023-dominated-requests-solar-wind-and-energy-storage; Lori Bird, Andrew Light, and Ian Goldsmith, "US Clean Power Development Sees Record Progress, As Well As Stronger Headwinds," *World Resources Institute*, February 21, 2025, www.wri.org/insights/clean-energy-progress-united-states; Jon Rea and Ryan Foelske, "The State of Utility Planning*, 2025 Q1*", *RMI*, April 15, 2025, https://rmi.org/the-state-of-utility-planning-2025-q1.

[94] Jon Rea and Ryan Foelske, "The State of Utility Planning*, 2025 Q1,*" *RMI*, April 15, 2025, https://rmi.org/the-state-of-utility-planning-2025-q1.

[95] *See* Quentin Good et al., "Big Data Centers, Big Problems: The Surging Environmental and Consumer Costs of AI, Crypto and Big Data," *Environment America Research & Policy Center; U.S. PIRG Education Fund; Frontier* Group, January 2025, https://publicinterestnetwork.org/wp-content/uploads/2025/01/Big-data-centers-big-problems-January-2025.pdf; Emily Jones, "With Energy Demand Surging, Utilities Fall Back on Their Old Standby: Fossil Fuels," *Grist*, March 29, 2024, https://grist.org/energy/high-power-demand-utilities-see-fossil-fuels-solution.

[96] *See* Mark Kresowik et al., "The 2025 State Energy Efficiency Scorecard," *ACEEE*, March 18, 2025, www.aceee.org/state-policy/scorecard.

[97] "Energy Efficiency and Building Decarbonization," *NYSERDA*, www.nyserda.ny.gov/Impact-Energy-Efficiency-and-Building-Decarbonization (accessed June 23, 2025); John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf.

A few states have introduced legislation to require, or provide subsidies for, data centers to meet energy efficiency standards. A recent bill in California would provide tax cuts to data center operators if 70 percent of their energy comes from zero emissions sources.[98] Another bill in that state would require data centers to report energy usage and the state energy commission to create efficiency standards for data centers.[99] Virginia lawmakers unsuccessfully proposed linking tax incentives to efficiency standards, and lawmakers in Texas are considering similar steps.[100] While these efforts demonstrate that states are concerned about data center energy use, additional research is needed on the effectiveness of different data center efficiency improvements, how to model them, and to what degree efficiency gains could lead to increased usage.[101]

Demand Response to Address Load Growth

Similar to efficiency programs, many states have existing demand response programs, but with significant variation in level of development.[102] There has not been a significant change in strategy to specifically address recent load growth around data centers to date.[103] However, by expanding demand response efforts, states can significantly reduce peak demand. Thus, demand response

---

[98] Khari Johnson, "Crackdown on Power-Guzzling Data Centers May Soon Come Online in California," *CalMatters*, February 18, 2025, http://calmatters.org/economy/technology/2025/02/data-center-crackdown-to-protect-california-electricity-rates. Cal. State. Leg. S.B. 57. Reg. Sess. 2025-2026 (2025), https://calmatters.digitaldemocracy.org/bills/ca_202520260sb57.

[99] Cal. State. Leg. A.B. 222, Reg. Sess. 2025-2026 (2025), https://calmatters.digitaldemocracy.org/bills/ca_202520260ab222.

[100] Va. Gen. Assemb. H.B. 2578, Reg. Sess. 2025 (2025), https://lis.virginia.gov/bill-details/20251/HB2578; Khari Johnson, "Crackdown on Power-Guzzling Data Centers May Soon Come Online in California," *CalMatters*, February 18, 2025, http://calmatters.org/economy/technology/2025/02/data-center-crackdown-to-protect-california-electricity-rates.

[101] *See* "AI Revolution: Meeting Massive AI Infrastructure Demands," *Barclays*, January 16, 2025, www.ib.barclays/content/dam/barclaysmicrosites/ibpublic/documents/our-insights/Powering_AI_Impact_Series/ImpactSeries_13_brochure.pdf; John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf.

[102] *See* "2024 Assessment of Demand Response and Advanced Metering," *Federal Energy Regulatory Commission*, December 2024, www.ferc.gov/sites/default/files/2024-11/Annual Assessment of Demand Response_1119_1400.pdf; Ryan Hledik et al., "The National Potential for Load Flexibility: Value and Market Potential Through 2030," *The Brattle Group*, June 2019, www.brattle.com/wp-content/uploads/2021/05/16639_national_potential_for_load_flexibility_-_final.pdf.

[103] *See e.g.* Neil Kolwey and Howard Geller, "Data Centers: Power Needs and Clean Energy Challenges," *Southwest Energy Efficiency Project*, March 2025, http://www.swenergy.org/wp-content/uploads/SWEEP-data-center-report-2025_3_27.pdf; Sara Baldwin, "It's Time to Stop Fretting about Load Growth and Get Serious about Demand-Side Solutions," *Utility Dive*, August 6, 2024, www.utilitydive.com/news/stop-fretting-about-load-growth-and-get-serious-about-demand/722701.

presents an opportunity for states to serve new load while reducing the need for new supply-side additions.[104]

Some states like California, Massachusetts, and Oregon are leveraging demand response to reduce peak load, although these activities seem to have varying motivations. California has focused on demand flexibility initiatives to balance electricity supply and demand with a growing percentage of renewable generation.[105] As of Fall 2024, California had enrolled over 515 MW of capacity in load management programs, with a load shift goal of 7,000 MW by 2030.[106] Massachusetts has a clean peak energy standard to reduce demand during peak periods and has invested over $4.5 million in a peak demand management grant program.[107] Both California and Massachusetts seem to be motivated primarily by reliability and/or clean energy goals. Portland Gas & Electric in Oregon, anticipating demand increases from electrification, is investing in demand response programs as part of a larger plan to meet capacity needs and decarbonization targets.[108]

New York is another state that is evaluating the potential of grid flexibility to meet future demand. New York recently commissioned a report from the Brattle Group to explore the topic,

---

[104] Eric Gimon, Mike O'Boyle, and Michelle Solomon, "Meeting Growing Electricity Demand Without Gas," *Energy Innovation*, March 28, 2024, https://energyinnovation.org/report/meeting-electricity-demand-without-growing-gas/; Samuel Newell, "The US Is Facing Unprecedented Load Growth. Here's How We Ensure Resource Adequacy.," *Utility Dive*, April 17, 2025, www.utilitydive.com/news/load-growth-challenges-supply-demand-brattle/745302; Sara Baldwin, "It's Time to Stop Fretting about Load Growth and Get Serious about Demand-Side Solutions," *Utility Dive*, August 6, 2024, www.utilitydive.com/news/stop-fretting-about-load-growth-and-get-serious-about-demand/722701.

[105] "Load Flexibility," *California Energy Commission*, https://www.energy.ca.gov/programs-and-topics/topics/load-flexibility (accessed June 23, 2025).

[106] "California's Demand Side Grid Support Program Grows to 500 Megawatts of Capacity," California Energy Commission, California Energy Commission, October 15, 2024, https://www.energy.ca.gov/news/2024-10/californias-demand-side-grid-support-program-grows-500-megawatts-capacity; Robert Walton, "California Enrolls 515 MW in Load Management Program Featuring 200 MW VPP," *Utility Dive*, October 16, 2024; Kavya Balaraman, "California's 7 GW Load Shift Goal Is 'Starting Gun' for Dramatic Expansion in Flexible Demand," *Utility Dive*, June 6, 2023, www.utilitydive.com/news/california-7-gw-load-shift-goal-demand-response/652135 and www.utilitydive.com/news/california-enrolls-500-mw-demand-side-grid-support-program/729966; Kavya Balaraman, "California's 7 GW Load Shift Goal Is 'Starting Gun' for Dramatic Expansion in Flexible Demand," *Utility Dive*, June 6, 2023, www.utilitydive.com/news/california-7-gw-load-shift-goal-demand-response/652135.

[107] "Clean Peak Energy Standard History of Program Development," *Massachusetts Department of Energy Resources*, www.mass.gov/info-details/clean-peak-energy-standard-history-of-program-development (accessed June 23, 2025); "Peak Demand Management Grant Program," *Massachusetts Department of Energy Resources*, www.mass.gov/info-details/peak-demand-management-grant-program (accessed June 23, 2025).

[108] "Clean Energy and Integrated Resource Planning," *Portland General Electric*, https://portlandgeneral.com/about/who-we-are/resource-planning/combined-cep-and-irp (accessed June 23, 2025); *see also* "PGE Customer Actions Resulted in the Largest Electricity Demand-Shift in Company History during Multi-Day Heat Wave," *Portland General Electric*, July 11, 2024, https://portlandgeneral.com/news/2024-07-customer-actions-resulted-in-largest-electricity-demand-shift.

considering state climate goals and increased electrification.[109] The state's definition of grid flexibility includes shifting either demand or supply to meet power system and local distribution needs, and the study evaluates many behind-the meter solutions.[110]

Transmission Investments

In addition to the transmission investments related to specific fossil fuel expansion projects discussed above, some states and RTO/ISOs are now looking to invest in transmission to meet increased demand after a decade-long transmission investment decline.[111] For example, MISO approved $21.8 billion for long-range transmission investments, ERCOT in Texas approved $14 billion in September 2024, and Southwest Power Pool approved over $7 billion.[112] CAISO also approved $6 billion for transmission investments in its 2023-2024 plan and increased the proposed investments in its 2024-2025 plan approved in May 2025, including an additional $4.8 billion in investments across 31 projects driven by load growth.[113] Bonneville Power Administration in the Pacific Northwest proposed $3 billion in transmission investments to address load growth.[114]

---

[109] Ryan Hledik et al., "New York's Grid Flexibility Potential - Volume I: Summary Report," *The Brattle Group*, January 2025, www.brattle.com/wp-content/uploads/2025/02/New-Yorks-Grid-Flexibility-Potential-Volume-I-Summary-Report.pdf.

[110] *Id.*

[111] North American Electric Reliability Corporation, "2024 Long-Term Reliability Assessment," December 2024, www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_Long%20Term%20Reliability%20Assessment_2024.pdf; John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf.

[112] John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf; "Long Range Transmission Planning," *MISO*, www.misoenergy.org/planning/long-range-transmission-planning (accessed June 23, 2025); Robert Walton, "SPP OKs $7.7B Transmission Plan Targeting 'Generational Challenges' with Power Supply and Demand," *Utility Dive*, October 30, 2024, www.utilitydive.com/news/spp-board-approves-transmission-expansion/731449.

[113] "ISO Board of Governors Approves 2024-2025 Transmission Plan," *California ISO*, May 22, 2025, www.caiso.com/about/news/news-releases/iso-board-of-governors-approves-2024-2025-transmission-plan; Paul Gerke, "California's New Gold Rush? 31 Transmission Projects Worth $4.8B Approved to Meet Electric Load Growth," *Factor This™*, May 27, 2025, www.renewableenergyworld.com/power-grid/transmission/californias-new-gold-rush-31-transmission-projects-worth-4-8b-approved-to-meet-electric-load-growth.

[114] John D. Wilson, Zach Zimmerman, and Rob Gramlich, "Strategic Industries Surging: Driving US Power Demand," *Grid Strategies*, December 2024, https://gridstrategiesllc.com/wp-content/uploads/National-Load-Growth-Report-2024.pdf.

This type of large-scale transmission investment, especially for high voltage transmission lines, will be needed to meet decarbonization goals and load growth, according to experts.[115] Even before recent load growth spikes, DOE estimated that transmission mileage would likely need to triple by the 2050s to accommodate a net zero-carbon grid.[116]

State Action to Limit Ratepayer Impacts and Increase Clean Generation

Several states are proposing legislation and developing special tariffs to address concerns that the costs of new grid infrastructure to support data center power needs may fall on other customer groups. They recognize that serving new data center loads can necessitate significant system additions and upgrades, but also that there is often uncertainty about whether forecasted loads will actually materialize.

While large-load customer tariffs are not a new phenomenon, some state regulators are approving new tariffs for large industrial loads to prevent costs from falling on other customer groups, and in some cases to protect utilities and ratepayers from shouldering the costs of load growth uncertainty around new data center and other large-industrial loads.[117] In January 2025, the Georgia PSC approved new power usage terms, including for longer contract terms and allowing for customers using over 100 MW to be charged for upstream generation, transmission, and distribution costs related to their projects beyond standard terms and conditions.[118] In February 2025, Indiana regulators approved a new large customer tariff developed through a settlement agreement between the investor-owned utility and several other parties, including large tech companies.[119] The new tariff requires large industrial customers (over 70 MW or 150 MW aggregated across a company) to pay for grid upgrades to serve their facilities and prevent

---

[115] *See e.g.*, Nathan Shreve, Zachary Zimmerman, and Rob Gramlich, "Fewer New Miles: The US Transmission Grid in the 2020s" (Americans for a Clean Energy Grid and Grid Strategies, July 2024), https://cleanenergygrid.org/wp-content/uploads/2024/07/GS_ACEG-Fewer-New-Miles-Report-July-2024.pdf.

[116] "Queued Up… But in Need of Transmission," U.S. Department of Energy, accessed June 23, 2025, www.energy.gov/policy/queued-need-transmission.

[117] Stacy Sherwood, "Review of Large Load Tariffs to Identify Safeguards and Protections for Existing," *Energy Futures Group*, January 28, 2025, https://energyfuturesgroup.com/wp-content/uploads/2025/01/Review-of-Large-Load-Tariffs-to-Identify-Safeguards-and-Protections-for-Existing-Ratepayers-Report-Final.pdf.

[118] "PSC Approves Rule to Allow New Power Usage Terms for Data Centers, *Georgia Public Service Commission*, January 23, 2025, https://psc.ga.gov/site/assets/files/8617/media_advisory_data_centers_rule_1-23-2025.pdf; Scott Clavenna, "The Rules around Data Center Cost Allocation Are Getting Clearer," *Latitude Media*, February 26, 2025, www.latitudemedia.com/news/the-rules-around-data-center-cost-allocation-are-getting-clearer.

[119] Ethan Howland, "Indiana Regulators Approve 'Large Load' Interconnection Rules," *Utility Dive*, February 20, 2025, www.utilitydive.com/news/indiana-iurc-large-load-interconnection-data-center-aep-amazon-google/740452.

these costs from falling on other customer groups.[120] However, the exact cost allocations will be determined in future regulatory proceedings.[121] The settlement also includes assurances related to downsizing and exit fees to minimize risks.[122]

A similar process is underway in Ohio. Investor-owned utility AEP is proposing a tariff for new large data centers that would require them to pay for a minimum of 85% of their projected energy use, whether or not they actually use the energy, to cover the cost of new infrastructure needed to serve these customers.[123] As of April 2025, the AEP tariff is still being reviewed by state regulators. California lawmakers introduced a bill in January 2025 that would direct the state utility commission to create a special tariff for large users like data centers to avoid cost shifts to other customer groups.[124] Duke Energy in North and South Carolina is adding a minimum-take clause—making customers pay for a specified amount of power whether or not they use it—and requiring upfront payments for infrastructure investments.[125] Tariff reform is also being considered in Arizona and Virginia.[126]

Generation

In addition to utility and regulatory actions, some state lawmakers are proposing legislation to address cost allocation issues related to data center load growth, ranging from requiring investigations to explicitly prohibiting data center costs from falling on other customer groups.

---

[120] *Id.*

[121] *Id.*

[122] Ethan Howland, "Indiana Regulators Approve 'Large Load' Interconnection Rules," *Utility Dive*, February 20, 2025, www.utilitydive.com/news/indiana-iurc-large-load-interconnection-data-center-aep-amazon-google/740452; Stacy Sherwood, "Review of Large Load Tariffs to Identify Safeguards and Protections for Existing," *Energy Futures Group*, January 28, 2025, https://energyfuturesgroup.com/wp-content/uploads/2025/01/Review-of-Large-Load-Tariffs-to-Identify-Safeguards-and-Protections-for-Existing-Ratepayers-Report-Final.pdf.

[123] "AEP Ohio, PUCO Staff, Ohio Consumers' Counsel, Ohio Energy Group and Others Agree on How to Address Growing Data Center Power Needs," *American Electric Power*, October 23, 2024, www.aep.com/news/stories/view/9829; Sonal Patel, "AEP Ohio Proposes New Utility Tariff for Data Centers to Offset Infrastructure Costs," *POWER Magazine*, October 24, 2024, www.powermag.com/aep-ohio-proposes-new-utility-tariff-for-data-centers-to-offset-infrastructure-costs.

[124] Cal. Leg. SB-57. Reg. Sess. 2025-2026 (2025). https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202520260SB57#99INT.

[125] Stacy Sherwood, "Review of Large Load Tariffs to Identify Safeguards and Protections for Existing," *Energy Futures Group*, January 28, 2025, https://energyfuturesgroup.com/wp-content/uploads/2025/01/Review-of-Large-Load-Tariffs-to-Identify-Safeguards-and-Protections-for-Existing-Ratepayers-Report-Final.pdf.

[126] Ethan Howland, "Rising Data Center Loads Pose Grid Reliability, Residential Cost Risks: APS Executive," *Utility Dive*, November 11, 2024, www.utilitydive.com/news/data-center-grid-reliability-residential-cost-aps-load-growth/732480; Ivy Main, "Will Special Rate Classes Protect Va. Residents from the Costs of Serving Data Centers?," *Virginia Mercury*, April 25, 2025, https://virginiamercury.com/2025/04/25/will-special-rate-classes-protect-va-residents-from-the-costs-of-serving-data-centers.

In Virginia, home to the highest concentration of data centers in the country, lawmakers have introduced many bills over the past few years—17 in the 2024 session alone—to address rapid data center load growth.[127] For example, a bill introduced in early 2025 would have directed the State Corporation Commission to open proceedings to specifically evaluate cost allocations among different electric utility customer groups to ensure other groups are not subsidizing data center service.[128] It would have temporarily halted projects specifically benefiting data centers until the completion of the investigation.[129] Depending on the results of the investigation, it would have required the commission to promulgate rules to minimize and eliminate unreasonable subsidization.[130] The senate companion bill also explicitly looked to ensure fair energy cost distribution and protect customers from bill increases linked to data center costs.[131] Both bills failed to make it out of committee.[132] Another proposed Virginia bill, which would have explicitly prohibited utilities from collecting from other customers to cover costs related to electric distribution construction or extensions to serve data centers, also failed to make it out of committee.[133]

To date, the legislative efforts in Virginia have been largely unsuccessful.[134] This is due in part to industry opposition,[135] and in part to the Virginia Joint Legislative Audit and Review Commission

---

[127] *See* Jeffrey Tomich and Jason Plautz, "State Lawmakers Grapple with Energy Demand for Data Centers," *E&E News by POLITICO*, March 3, 2025, www.eenews.net/articles/state-lawmakers-grapple-with-energy-demand-for-data-centers.

[128] Va. Gen. Assemb. H.B. 2101, Reg. Sess. 2025 (2025), https://lis.virginia.gov/bill-details/20251/HB2101.

[129] Scott Clavenna, "The Rules around Data Center Cost Allocation Are Getting Clearer," *Latitude Media*, February 26, 2025, www.latitudemedia.com/news/the-rules-around-data-center-cost-allocation-are-getting-clearer.

[130] Va. Gen. Assemb. H.B. 2101, Reg. Sess. 2025 (2025), https://legiscan.com/VA/bill/HB2101/2025.

[131] Scott Clavenna, "The Rules around Data Center Cost Allocation Are Getting Clearer," *Latitude Media*, February 26, 2025, www.latitudemedia.com/news/the-rules-around-data-center-cost-allocation-are-getting-clearer.

[132] Va. Gen. Assemb. S.B. 960, Reg. Sess. 2025 (2025), https://legiscan.com/VA/bill/SB960/2025; Va. Gen. Assemb. H.B. 2101, Reg. Sess. 2025 (2025), https://legiscan.com/VA/bill/HB2101/2025.

[133] Va. Gen. Assemb. S.B. 1243. Reg. Sess. 2025 (2025), https://legiscan.com/VA/bill/SB1243/2025.

[134] *E.g.*, Va. Gen. Assemb. S.B. 1243, Reg. Sess. 2025 (2025), https://legiscan.com/VA/bill/SB1243/2025; Va. Gen. Assemb. S.B. 960, Reg. Sess. 2025 (2025), https://legiscan.com/VA/bill/SB960/2025; Va. Gen. Assemb. H.B. 2101, Reg. Sess. 2025 (2025), https://legiscan.com/VA/bill/HB2101/2025.

[135] *See* Jeffrey Tomich and Jason Plautz, "State Lawmakers Grapple with Energy Demand for Data Centers," *E&E News by POLITICO*, March 3, 2025, www.eenews.net/articles/state-lawmakers-grapple-with-energy-demand-for-data-centers; Tad Dickens, "A Bipartisan Group of General Assembly Members Introduced about 20 Bills to Deal with Data Centers. Only 4 Survived.," *Cardinal News*, March 7, 2025, https://cardinalnews.org/2025/03/07/a-bipartisan-group-of-general-assembly-members-introduced-about-20-bills-to-deal-with-data-centers-only-4-survived.

report on the impacts of unconstrained data center growth.[136] Released in December 2024, the study concluded that data centers are currently paying their fair share, but warned of future environmental and cost impacts if demand does triple as projected and the state's generation and transmission infrastructure struggles to keep pace.[137]

Lawmakers in several other states are also looking to find ways to protect ratepayers from cost impacts associated with accommodating demand from new data centers. In Maryland, the legislature passed a bill with special new requirements for large-load customers (e.g., data centers).[138] It directs the Maryland Public Service Commission to develop a new rate for these customers, ensures other customer groups do not subsidize large-load service costs, and includes penalties and reimbursement requirements if a qualifying large-load customer delays or cancels a project. Oregon and Georgia lawmakers also proposed legislation to shield customers from data center service costs.[139] The legislation in Georgia failed, but Oregon's was successful.[140] Texas lawmakers recently passed a bill that would prevent duplicate interconnection queue requests, require large load customers to pay retail transmission charges, require proof of financial commitment from these customers, and give the grid operator more

---

[136] Ivy Main, "Facing Data Center Sprawl and an Energy Crisis, Virginia Lawmakers Leap into Action. Just Kidding.," *Virginia Mercury*, February 10, 2025, https://virginiamercury.com/2025/02/10/facing-data-center-sprawl-and-an-energy-crisis-virginia-lawmakers-leap-into-action-just-kidding/; Kimberly A Sarte et al., "Data Centers in Virginia," *Joint Legislative Audit and Review Commission*, December 9, 2024, https://jlarc.virginia.gov/pdfs/reports/Rpt598.pdf.

[137] Kimberly A Sarte et al., "Data Centers in Virginia," *Joint Legislative Audit and Review Commission*, December 9, 2024, https://jlarc.virginia.gov/pdfs/reports/Rpt598.pdf; Kush Patel et al., "Virginia Data Center Study: Electric Infrastructure and Customer Rate Impacts," *Energy and Environmental Economics, Inc.*, December 2024, https://jlarc.virginia.gov/pdfs/presentations/JLARC%20Virginia%20Data%20Center%20Study_FINAL_12-09-2024.pdf.

[138] Md. Gen. Assemb. S.B. 937. Reg. Sess. 2025 (2025). https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/sb0937?ys=2025RS; "Maryland Lowers Energy Bills and Builds Its Clean Energy Future with New Laws," *Earthjustice*, April 10, 2025, https://earthjustice.org/press/2025/maryland-lowers-energy-bills-and-builds-its-clean-energy-future-with-new-laws.

[139] Ore. State Leg. H.B. 3546. Reg. Sess. 2025 (2025), https://olis.oregonlegislature.gov/liz/2025R1/Measures/Overview/HB3546; Mike Rogoway, "Oregon Lawmakers Craft Bill to Shield Consumers from the Cost of Powering Data Centers," *Oregon Live*, January 11, 2025, www.oregonlive.com/silicon-forest/2025/01/oregon-lawmakers-craft-bill-to-shield-consumers-from-the-cost-of-powering-data-centers.html; Jeffrey Tomich and Jason Plautz, "State Lawmakers Grapple with Energy Demand for Data Centers," *E&E News by POLITICO*, March 3, 2025, www.eenews.net/articles/state-lawmakers-grapple-with-energy-demand-for-data-centers.

[140] Ore. State Leg. H.B. 3546. Reg. Sess. 2025 (2025), https://olis.oregonlegislature.gov/liz/2025R1/Measures/Overview/HB3546; Ga. State Leg. S.B. 34. Reg. Sess. 2025 (2025), https://legiscan.com/VA/bill/SB1243/2025.

authority to curtail loads from data centers and some other large power users during firm load shed events.[141]

In a bid to both limit ratepayer impacts and increase the contribution of renewable generation, utilities in some states are adopting new special tariffs to facilitate partnerships between large-load customers (e.g., data centers) and new clean energy projects. These tariffs aim to meet new large loads cleanly and flexibly, without imposing higher costs on other customers, while ensuring that the new clean energy serving data centers is additive and not diverted away from other users.[142] This type of initiative takes advantage of the clean energy targets adopted by some large-load customers.[143] In Nevada, the NV Energy Clean Energy Transition Tariff allows customers with an annual average hourly load above 5 MW to pay a premium to receive power from emerging clean technologies.[144] The customer can work directly with the utility and the power developer on long–term agreements to fund new technologies.[145] Google pushed for this new tariff to partner with a geothermal developer. In the Carolinas, Duke Energy developed

---

[141] Tex. Leg. S.B. 6, Sess. 89 (2025), https://capitol.texas.gov/BillLookup/History.aspx?LegSess=89R&Bill=SB6; Brian Martucci, "Texas Law Gives Grid Operator Power to Disconnect Data Centers during Crisis," *Utility Dive*, June 25, 2025, https://www.utilitydive.com/news/texas-law-gives-grid-operator-power-to-disconnect-data-centers-during-crisi/751587/. Scott Clavenna, "The Rules around Data Center Cost Allocation Are Getting Clearer," *Latitude Media*, February 26, 2025, http://www.latitudemedia.com/news/the-rules-around-data-center-cost-allocation-are-getting-clearer.

[142] *See* Isabelle Riu et al., "Load Growth Is Here to Stay, but Are Data Centers?: Strategically Managing the Challenges and Opportunities of Load Growth" *Energy and Environmental Economics, Inc.*, July 2024, www.ethree.com/wp-content/uploads/2024/07/E3-White-Paper-2024-Load-Growth-Is-Here-to-Stay-but-Are-Data-Centers-2.pdf; Stacy Sherwood, "Review of Large Load Tariffs to Identify Safeguards and Protections for Existing," *Energy Futures Group*, January 28, 2025, https://energyfuturesgroup.com/wp-content/uploads/2025/01/Review-of-Large-Load-Tariffs-to-Identify-Safeguards-and-Protections-for-Existing-Ratepayers-Report-Final.pdf ; Jackson Morris, "Data Centers Gobbling Up Existing Nukes Threatens Grid Decarb Goals," *Natural Resources Defense Council*, July 11, 2024, . www.nrdc.org/bio/jackson-morris/data-centers-gobbling-existing-nukes-threatens-grid-decarb-goals-0.

[143] Molly Robertson and Karen Palmer, "The Hype on Hyperscalers: Data Centers and Growing Electricity Demand," Resources for the Future, March 24, 2025, https://www.resources.org/common-resources/the-hype-on-hyperscalers-data-centers-and-growing-electricity-demand/.; Lisa Martine Jenkins, "Google's Accelerated Urgency for Clean, Firm Power," *Latitude Media*, May 24, 2024, www.latitudemedia.com/news/googles-accelerated-urgency-for-clean-firm-power.

[144] Order in Docket Nos. 24-05022 and 24-05023, Public Utilities Commission of Nevada, March 11, 2025, https://ob.nv.gov/puc/api/Document/AS9sZsEc9BTA4PXbBoI8b1n4jpwocPAa8vaiajNcenHy2e6Vq4CGHa6z2k6XDacCJgam8J8YerNbkkUkTLxDWKU%3D/?OverlayMode=View; Ann Collier and Justin Lindemann, "Innovative Utility Tariffs Pave the Way for Flexible, Carbon-Free Data Centers," *Smart Electric Power Alliance*, February 21, 2025, https://sepapower.org/knowledge/innovative-utility-tariffs-pave-the-way-for-flexible-carbon-free-data-centers.

[145] *See* Lisa Martine Jenkins, "Can Google's Clean Transition Tariff Remake Utility Incentives?," *Latitude Media*, June 18, 2024, www.latitudemedia.com/news/the-clean-transition-tariff-is-googles-play-to-remake-utility-incentives; Molly Robertson and Karen Palmer, "The Hype on Hyperscalers: Data Centers and Growing Electricity Demand," *Resources for the Future*, March 24, 2025, www.resources.org/common-resources/the-hype-on-hyperscalers-data-centers-and-growing-electricity-demand.

Accelerating Clean Energy Tariffs that create financing options to drive new clean technology development, more on-site generation for large customers, and individualized clean energy portfolios for commercial and industrial customers.[146] There are other utilities that already have green tariffs that allow customers to purchase renewable energy or renewable energy credits, but many of them predate recent load growth increases.[147]

Conclusion

Recent large load growth projections are significantly impacting state energy strategies in many parts of the U.S. This change comes at a time when many states are working to decarbonize the electricity sector, including increasing renewable generation and storage, and retiring fossil resources. For several states outlined in this report, load growth is causing a renewed interest in fossil fuel generation, specifically in delaying legacy generation retirements and building new gas capacity. This may jeopardize states' ability to realize clean energy goals and increase stranded asset risk.[148]

To address this shift, some energy experts and advocacy groups have begun working on how states and utilities can integrate new loads while continuing a transition to clean energy.[149] For

---

[146] Stacy Sherwood, "Review of Large Load Tariffs to Identify Safeguards and Protections for Existing," *Energy Futures Group*, January 28, 2025, https://energyfuturesgroup.com/wp-content/uploads/2025/01/Review-of-Large-Load-Tariffs-to-Identify-Safeguards-and-Protections-for-Existing-Ratepayers-Report-Final.pdf; "Responding to Growing Demand, Duke Energy, Amazon, Google, Microsoft and Nucor Execute Agreements to Accelerate Clean Energy Options," *Duke Energy*, May 29, 2024, https://news.duke-energy.com/releases/responding-to-growing-demand-duke-energy-amazon-google-microsoft-and-nucor-execute-agreements-to-accelerate-clean-energy-options.

[147] Celeste Wanner, "U.S. Utility Green Tariff Report," *Clean Energy Buyers Association*, January 2023, https://cebuyers.org/wp-content/uploads/2023/04/Final-CEBA_Green-Tariff-Report.pdf.

[148] *See* Eric Gimon, Mike O'Boyle, and Michelle Solomon, "Meeting Growing Electricity Demand Without Gas," *Energy Innovation*, March 28, 2024, https://energyinnovation.org/report/meeting-electricity-demand-without-growing-gas/; Jeremy Fisher et al., "Demanding Better: How Growing Demand for Electricity Can Drive a Cleaner Grid," *Sierra Club*, September 2024, http://www.sierraclub.org/sites/default/files/2024-09/demandingbetterwebsept2024.pdf.

[149] Many energy experts are already starting to explore these topics. *See* e.g., Eric Gimon, Mike O'Boyle, and Michelle Solomon, "Meeting Growing Electricity Demand Without Gas," *Energy Innovation*, March 28, 2024, https://energyinnovation.org/report/meeting-electricity-demand-without-growing-gas/; Jeremy Fisher et al., "Demanding Better: How Growing Demand for Electricity Can Drive a Cleaner Grid," *Sierra Club*, September 2024, http://www.sierraclub.org/sites/default/files/2024-09/demandingbetterwebsept2024.pdf; Tyler H. Norris et al., "Rethinking Load Growth: Assessing the Potential for Integration of Large Flexible Loads in US Power Systems" *Nicholas Institute for Energy, Environment & Sustainability at Duke University*, February 2025, https://nicholasinstitute.duke.edu/publications/rethinking-load-growth; Jamie McDevitt-Galles et al., "Waiting in Queue: RMI's Solutions to the Gridlocked US Power Sector," *RMI*, September 4, 2024, https://rmi.org/waiting-in-queue-rmis-solutions-to-the-gridlocked-us-power-sector/; Arman Shehabi et al., "2024 United States Data Center Energy Usage Report," *Lawrence Berkeley National Laboratory*, December 2024, https://eta-publications.lbl.gov/sites/default/files/2024-12/lbnl-2024-united-states-data-center-energy-usage-report.pdf; Jeffrey Sward et al., "Get a Load of This: Regulatory Solution to Enable Better Forecasting of Large Loads," *RMI*,

example, improved understanding of the potential for data center load flexibility could help utilities better integrate data center loads. New demand response and virtual power plant program models could increase the contribution of these distributed resources. Solutions to renewable energy and energy storage interconnection barriers and siting challenges could accelerate the scale-up of new clean energy resources, thereby reducing the need for new and legacy fossil fuel generation capacity. Advances in transmission planning, especially high-voltage transmission that is needed to integrate increased renewable energy capacity, could allow clean generation to serve new loads. And improved forecasting, which is central to utility planning, could reduce uncertainty and help to avoid suboptimal investments. More work is needed to advance these ideas and to formulate best practices, which could then inform state energy policy and regulation.

February 2025, https://rmi.org/wp-content/uploads/dlm_uploads/2025/03/Get_a_load_of_this_Load_Forecasting.pdf.




Clean Energy States Alliance

Clean Energy States Alliance
50 State Street, Suite 1
Montpelier, VT 05602
802.223.2554
cesa@cleanegroup.org
www.cesa.org

The Clean Energy States Alliance (CESA) is a national, nonprofit coalition of public agencies and organizations working together to advance clean energy. CESA members—mostly state agencies—include many of the most innovative, successful, and influential public funders of clean energy initiatives in the country.

CESA works with state leaders, federal agencies, industry representatives, and other stakeholders to develop and promote clean energy technologies and markets. It supports effective state and local policies, programs, and innovation in the clean energy sector, with emphasis on renewable energy, power generation, financing strategies, and economic development. CESA facilitates information sharing, provides technical assistance, coordinates multi-state collaborative projects, and communicates the positions and achievements of its members.

www.cesa.org