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STATES OF POWER DECARBONIZATION

Q2 2025 Quarterly Report
Executive Summary



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The [NC Clean Energy Technology Center](#) is a UNC System-chartered Public Service Center administered by the College of Engineering at North Carolina State University. Its mission is to advance a sustainable energy economy by educating, demonstrating and providing support for clean energy technologies, practices, and policies. The Center provides service to the businesses and citizens of North Carolina and beyond relating to the development and adoption of clean energy technologies. Through its programs and activities, the Center envisions and seeks to promote the development and use of clean energy in ways that stimulate a sustainable economy while reducing dependence on foreign sources of energy and mitigating the environmental impacts of fossil fuel use.

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PREFERRED CITATION

North Carolina Clean Energy Technology Center, *The 50 States of Power Decarbonization: Q2 2025 Quarterly Report*, August 2025.

COVER DESIGN CREDIT

Cover design by Amira Ferjani and Justin Lindemann

COVER PHOTO CREDIT

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FULL REPORT AND OTHER 50 STATES REPORTS

The full Q1 2023 50 States of Power Decarbonization report may be downloaded [here](#). In addition to *The 50 States of Power Decarbonization*, the NC Clean Energy Technology Center publishes additional quarterly reports called *The 50 States of Solar*, *The 50 States of Grid Modernization*, and *The 50 States of Electric Vehicles*. These reports may be purchased [here](#). Executive summaries and older editions of these reports are available for download [here](#).

ABOUT THE REPORT

WHAT IS POWER DECARBONIZATION?

Decarbonization is an expansive term generally referring to the reduction of carbon dioxide emissions. Decarbonization can be discussed in the context of any emitting sector – electric power, buildings, industrial processes, transportation, agriculture, or the economy as a whole. This report focuses specifically on decarbonization of the electric power sector, which may include economy-wide decarbonization actions that necessarily encompass the electric power sector.

PURPOSE

The purpose of this report is to provide timely, accurate, and unbiased updates to a broad audience of state lawmakers and regulators, state agencies, utilities, the clean energy industry, and other energy stakeholders, about how states are choosing to study, adopt, implement, amend, or discontinue policies associated with power decarbonization and how utilities are planning for and implementing future generation resource additions and retirements. This report catalogues proposed and approved executive, legislative, and regulatory changes affecting electric power decarbonization during the most recent quarter, as well as actions related to investor-owned utility resource plans and generation capacity changes.

The 50 States of Power Decarbonization report series provides regular quarterly updates and annual summaries of electric power decarbonization policy updates and utility resource planning, keeping stakeholders informed and up to date.

APPROACH

The authors identified relevant policy changes and resource planning updates through state utility commission docket searches, legislative bill searches, popular press, and direct communications with industry stakeholders and regulators.

Questions Addressed

This report addresses several questions about U.S. electric power sector decarbonization, including:

- What targets are states setting for clean/renewable electricity generation or the reduction of greenhouse gas emissions from the power sector?
- How are states reforming statutes and regulations governing utility generation resource planning, procurement, and retirement?

- What electric generation capacity additions and retirements are utilities planning over the near-term and long-term?
- What specific electric generation capacity additions are utilities seeking to implement in the near-term through direct development or procurement processes? What resources are utilities requesting approval to retire in the near-term?

Actions Included

This report focuses on cataloguing and describing important proposed and adopted policy changes related to electric power sector decarbonization.

In general, this report considers an “action” to be a relevant (1) legislative bill that has passed at least one chamber, (2) an open or recently decided regulatory docket or rulemaking proceeding, (3) an executive order or significant state agency initiative, (4) a recently published integrated resource plan, or (5) a competitive procurement under development or underway for electric generation capacity. Primarily, statewide actions and those related to investor-owned utilities are included in this report. An appendix of relevant bills that have been introduced, but not yet passed a chamber, is provided at the end of the report. Specifically, actions tracked in this issue include:

Studies and Investigations

State- or utility-led efforts to study issues related to electric power decarbonization, including decarbonization pathways, cost impacts, and other specific topics.

Clean Energy Targets

New state clean energy standards, renewable portfolio standards, or technology-specific capacity targets, or changes to existing targets. Changes to implementation rules, such as eligible technologies and facility sizes, covered entities, and alternative compliance payment rates are also included.

Emission Targets and Carbon Policies

New state greenhouse gas emission reduction targets or modifications to existing targets. Changes to implementation rules for emission reduction targets are also included, as well as state or regional carbon pricing policies, such as carbon taxes or cap-and-trade programs.

Planning and Procurement Rules

Changes to rules governing the utility integrated resource planning process, as well as rules governing utility procurement of electric generation resources or retirement of existing utility-owned generation facilities.

Large Load Customer Treatment

New tariffs or rules, or modifications to existing tariffs or rules, governing data center and other new large load customer interconnection, rate structures, and contract terms, as well as options for resource procurement and on-site generation.

Utility Integrated Resource Plans

Integrated resource plans recently filed by investor-owned utilities and actively under review by regulators, as well as utility efforts to develop an integrated resource plan in advance of filing the plan with regulators.

Generation Capacity Changes

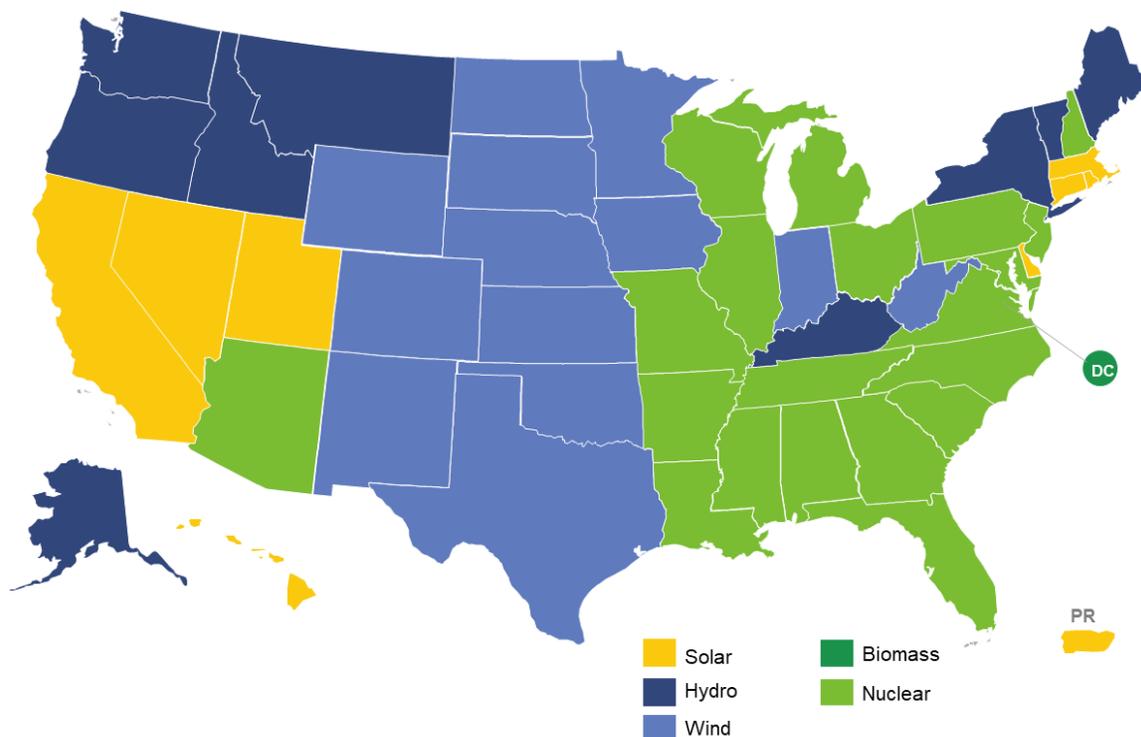
Utility-initiated requests to build, acquire, convert, or retire generation facilities, as well as utility green tariffs for large customers and state- or utility-led competitive procurements for electric generation resources (excluding utility requests for approval of individual power purchase agreements and competitive procurements for unbundled renewable energy certificates).

Actions Excluded

This report excludes actions that are specifically related to decarbonization of buildings, industrial processes, transportation, and agriculture. The report authors recognize that there are numerous important policy and regulatory issues related to clean energy project development that are highly relevant to overall electric power sector decarbonization. In order to maintain a well-defined scope of content, the report excludes actions specifically related to transmission and distribution planning, interconnection rules, and permitting and siting rules. Distribution system planning efforts are covered in the 50 States of Grid Modernization quarterly report, as well as a multitude of policies pertaining specifically to energy storage. Actions specific to distributed generation and community solar are covered in the 50 States of Solar quarterly report, and actions related to transportation electrification are covered in the 50 States of Electric Vehicles quarterly report. As noted above, utility requests for approval of individual power purchase agreements and competitive procurements for unbundled renewable energy certificates are excluded from this report.

However, most U.S. states and the country as a whole still have a long way to go to achieve these goals. Natural gas (43.3%) and coal (15.1%) remain two of the nation’s dominant electric generation resources, and either natural gas, coal, or oil makes up the largest share of electricity generation in 36 states (See Figure 1).[‡] Despite the current dominance of fossil fuels, clean energy is becoming a mainstay in the nation’s energy mix, particularly as costs decline and states acquire cleaner resources to meet climate and other environmental objectives.

Figure 2. Largest Contributing Clean Resource to State Electric Generation Mix (2024)



Data Source: U.S. Energy Information Administration – Electric Power Monthly, Net Generation by State by Type of Producer by Energy Source (Jan. – Dec. 2024).

Nationwide, clean energy resources are currently led by nuclear (18.2%), followed by wind (10.5%), hydropower (5.6%), and solar (5.1%).[§] Across the country, these resource mixes vary greatly, with different resources leading each state’s clean electricity generation; currently, most states’ clean energy portfolios are led by either nuclear or wind energy (see Figure 2). The overall contribution of clean energy sources to states’ electricity generation also varies widely, ranging from 5% to 99% in 2024 (see Figure 3).

Power decarbonization involves a wide range of potential pathways and technological solutions, allowing decision-makers to pursue a variety of combinations that, in theory, lead to the same

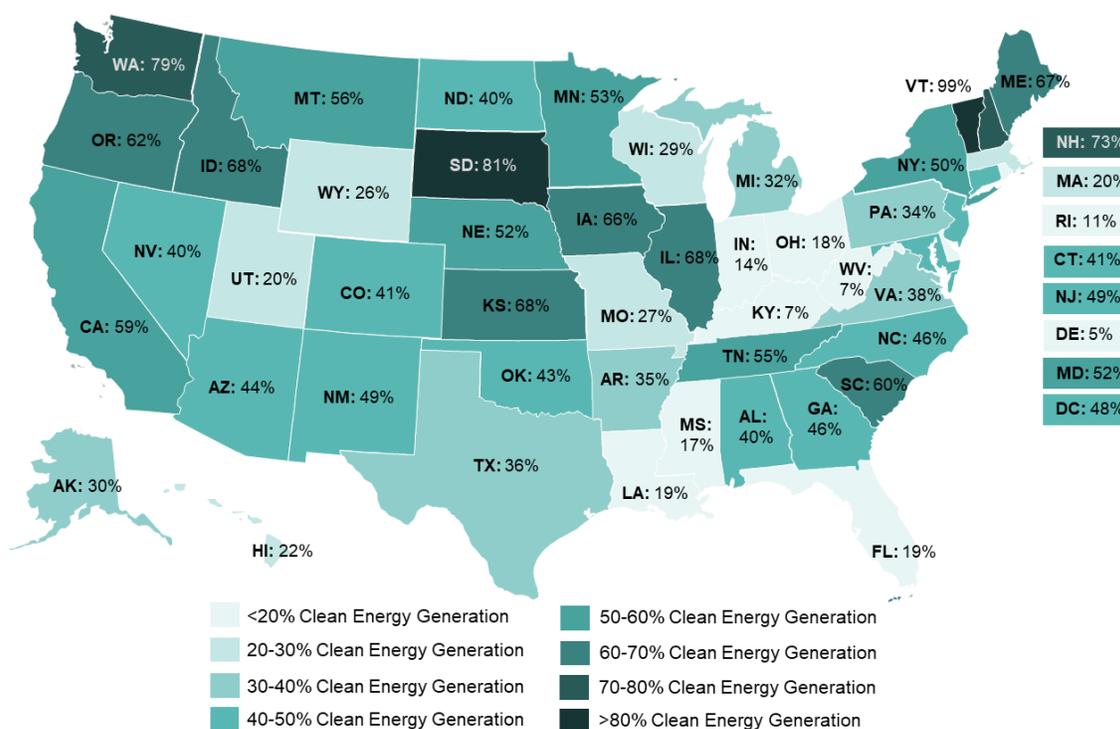
[‡] U.S. EIA, Electric Power Monthly, Net Generation by State by Type of Producer by Energy Source (Jan. – Dec. 2024). <https://www.eia.gov/electricity/data/state/>.

[§] U.S. EIA, Electric Power Monthly, Net Generation by State by Type of Producer by Energy Source (Jan. – Dec. 2024). <https://www.eia.gov/electricity/data/state/>.

end goal. However, the cost of each pathway can vary dramatically, and challenges like global supply chains, transmission access, interconnection queues, and local permitting can impact the actual feasibility and timeline of each pathway. The timescale for implementation is a critical consideration for meeting climate goals, while cost is also highly important to minimize adverse economic impacts on individuals and businesses, particularly low-income households.

Another major factor influencing U.S. power decarbonization is the uncertainty around future availability of federal Inflation Reduction Act incentives for clean energy development. Furthermore, rapid growth in data center and other ultra large loads presents new challenges for power sector decarbonization, with potential delays in fossil fuel plant retirements and additional new natural gas generation capacity being contemplated.

Figure 3. Percentage of Clean Electricity Generated by State (2024)



Data Source: U.S. Energy Information Administration – Electric Power Monthly, Net Generation by State by Type of Producer by Energy Source (Jan. – Dec. 2024). Map represents percent of total MWh generated in each state from clean energy sources (biomass, geothermal, hydroelectric, nuclear, solar, and wind).

Although there is much work to be done from where we currently stand to achieve state and utility power decarbonization goals, the future is looking bright. Power decarbonization is being actively considered by policymakers and regulators in nearly every state in the nation, and clean energy resources are dominating most states’ planned electric generation capacity additions in both the near-term and long-term. Meanwhile, states are working to create regulatory structures that will support the achievement of power decarbonization goals in the most fair and efficient ways.

EXECUTIVE SUMMARY

Q2 2025 POWER DECARBONIZATION ACTION

In the second quarter of 2025, 48 states and Puerto Rico took a total of 393 actions related to electric power decarbonization, resource planning, and large load customer treatment. Table 1 provides a summary of state and utility actions on these topics. Of the 393 actions tracked, the most common were related to electric generation capacity changes (130), planning and procurement rules (61), and utility integrated resource plans (54).

Table 1. Q2 2025 Summary of Grid Modernization Actions

Type of Action	# of Actions	% by Type	# of States
Electric Generation Capacity Changes	130	33%	36 + PR
Planning and Procurement Rules	61	16%	31
Utility Integrated Resource Plans	54	14%	27 + PR
Large Load Customer Treatment	52	13%	30
Studies and Investigations	42	11%	21
Clean Energy Targets	39	10%	17 + PR
Emissions Targets & Carbon Policies	15	4%	11
Total	393	100%	48 States + PR

Note: The "# of States/ Districts" total is not the sum of the rows because some states have multiple actions. Percentages are rounded and may not add up to 100%.

TOP 5 POWER DECARBONIZATION ACTIONS OF Q2 2025

Five of the quarter's top policy developments are highlighted below.

Minnesota and Missouri Legislators Adopt Tariff Requirement for Large Customers

Minnesota and Missouri legislators both enacted bills this quarter requiring utilities to develop tariffs for large load customers. Minnesota's tariffs must apply to a to-be-developed Very Large Customer class, while Missouri's tariffs must apply to customers with a peak demand of 100 MW or more (50 MW for smaller utilities). Both states are to implement requirements to avoid cost-shifting to other customers.

Arkansas and Ohio Policymakers Restrict Electric Generation Retirements

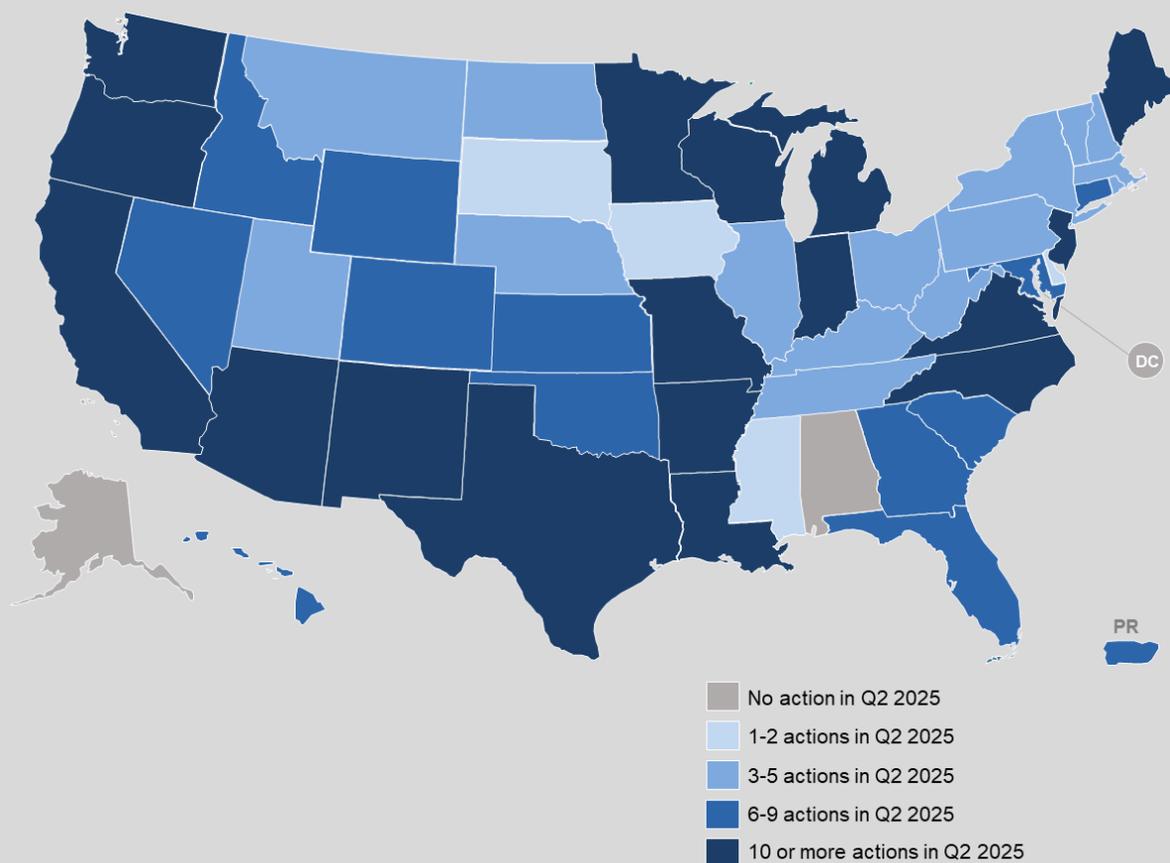
Policymakers in both Arkansas and Ohio implemented new restrictions on electric generation retirements during the quarter. Arkansas now requires utilities to receive approval to retire dispatchable electric generation, and utilities must replace the facilities with equal amounts of new

dispatchable electric generation. Ohio, meanwhile, is prohibiting utilities from closing generating plants they own or operate, while also prohibiting non-utility entities from closing baseload facilities that use non-renewable resources.

Maine Establishes Clean Energy Target, Amends Renewables Requirements

Maine policymakers revised the renewable energy standard from 100% Class 1/1A renewable to 90% Class 1/1A renewable and 10% Class III clean by 2040. The new Class III clean resources category includes technologies eligible for Class 1 and 1A along with nuclear, hydropower, and generation with de minimis emissions. The legislation also extended Class 1A targets from 40% by 2030 to 50% by 2040.

Figure 4. Q2 2025 Action on Power Decarbonization and Resource Planning



Connecticut Lawmakers Lower Renewable Portfolio Standard, Expand Emissions Targets

Connecticut lawmakers passed two bills – S.B. 4 and H.B. 5004 – during Q2 2025, amending state decarbonization targets. S.B. 4 decreased the Class I resources targets for the state’s

renewable portfolio standard, with the 2030 target now 29% instead of 40%; however, H.B. 5004 establishes a new economy-wide greenhouse gas (GHG) emission reduction target of 65% below 2001 levels in 2040 to go along with the GHG-free electricity target, and increases the economy-wide 2050 target from 80% to 100%. The Governor signed both bills into law in July 2025.

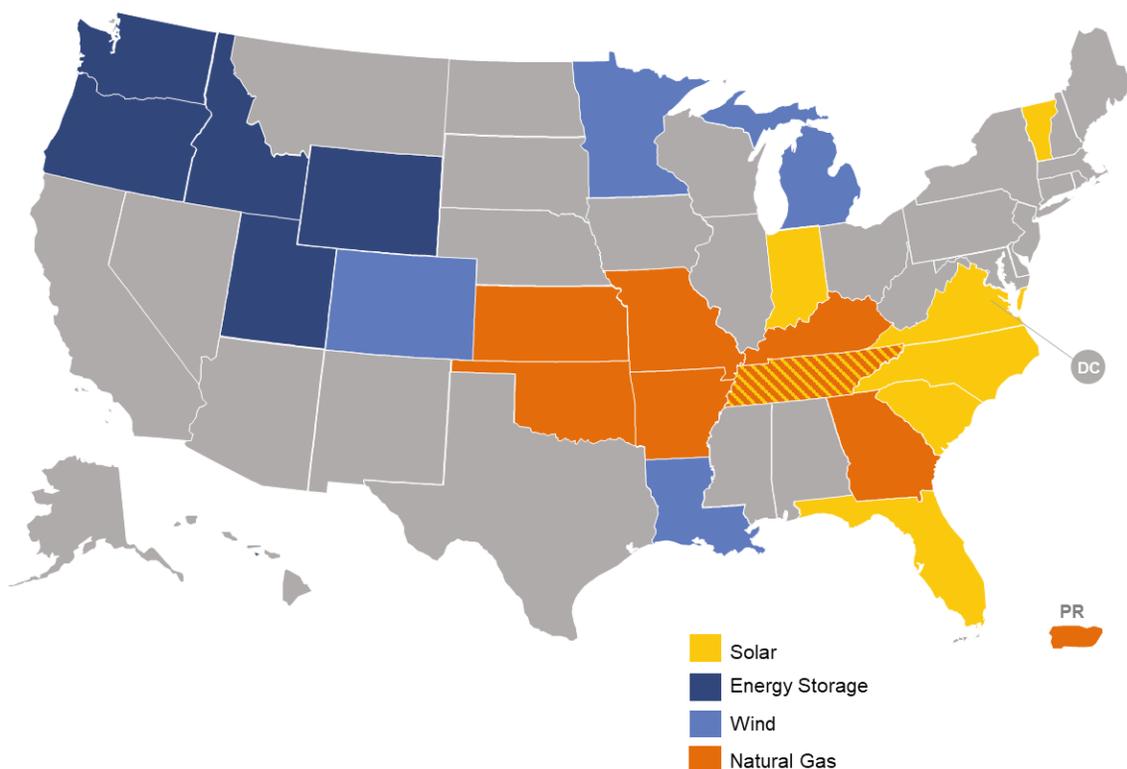
Indiana Governor Prohibits Agency-Led Climate Policies

The Governor of Indiana signed an executive order in April 2025 prohibiting state agencies from developing state plans, pricing mechanisms, or other policies for greenhouse gases (GHGs) without prior authorization from the General Assembly and the Governor; they also cannot incorporate a social cost of GHGs into analyses, rulemakings, permitting, enforcement, or other state activities. Agencies must also review and, if necessary, rescind existing climate plans that do not align with the executive order.

POWER DECARBONIZATION: LOOKING AHEAD

Although coal and natural gas currently account for the majority of U.S. electricity generation, solar and wind are making up the largest planned generation capacity additions for most utilities. Among integrated resource plans (IRPs) recently filed or under review by regulators in Q2 2025, planned capacity additions totaled 118,262 for solar, 98,317 MW for natural gas, 50,117 MW for wind, and 47,258 MW for storage, while planned coal retirements totaled 44,286 MW.

Figure 5. Q2 2025 Utility IRP Action, by Largest Planned Resource Addition



TOP POWER DECARBONIZATION TRENDS OF Q2 2025

Lawmakers Impose Conditions on Electric Generation Facility Retirements

Lawmakers in several states are imposing certain conditions on, or outright prohibiting, the retirement of electric generation facilities, with these conditions often relating to ensuring the availability of replacement generation. Arkansas will require regulatory approval and replacement facilities for utilities to shut down dispatchable electric generation, while Ohio now prevents closure of electric generating facilities owned by utilities and baseload facilities using non-renewable sources owned by other entities. The Arizona Legislature passed a bill prohibiting regulators from approving electric generation retirement unless there is a new firm facility to replace it, but the Governor vetoed the bill. However, the legislature did adopt a memorial urging regulators to reconsider their previous decision approving the retirements of existing coal plants. Missouri will now require utilities to replace closing plants with an equivalent amount of reliable generation.

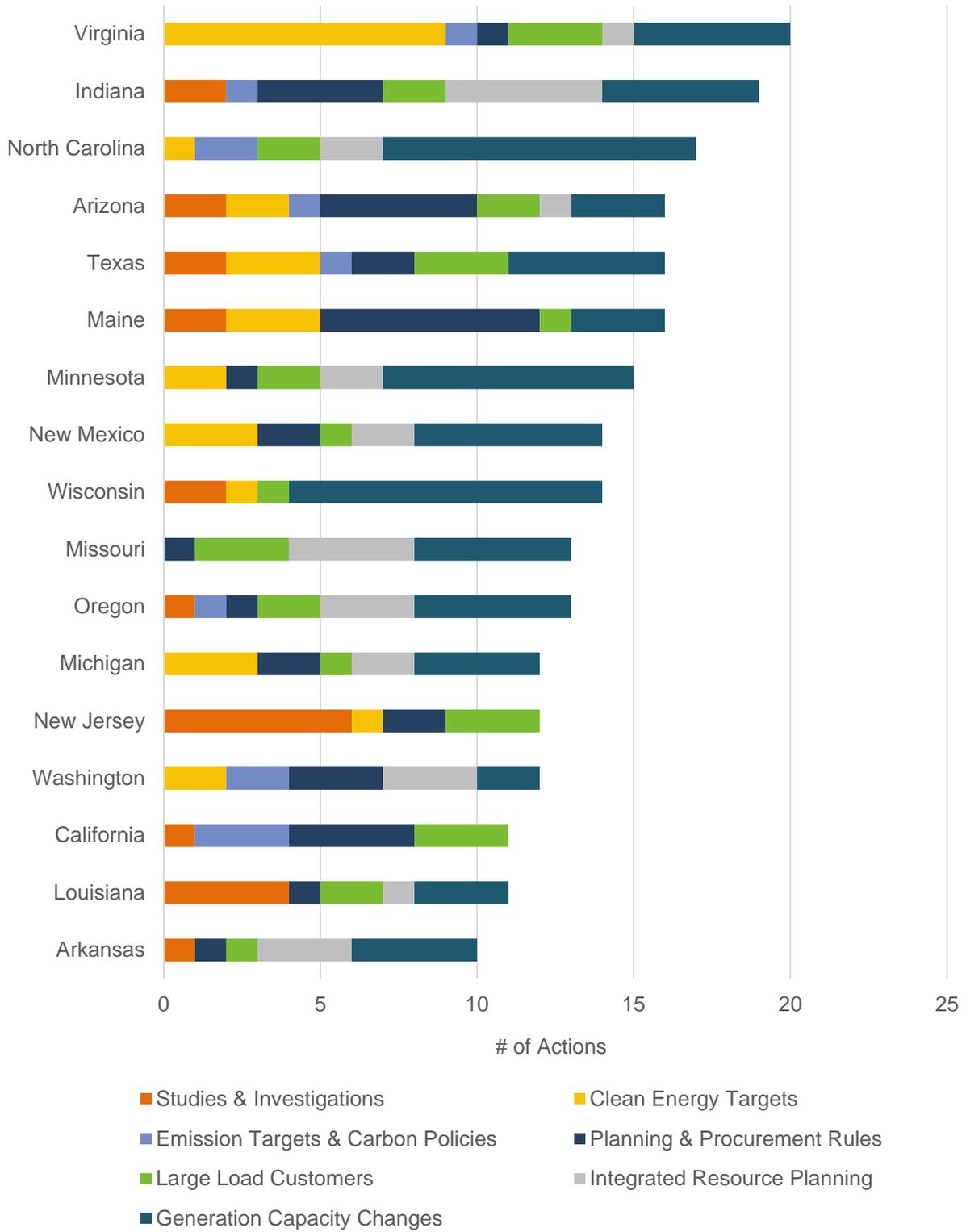
States Research Effect of Large Load Customers on the Grid

States are researching the effects of large load customers on the electric grid, with both legislators and regulators seeking greater understanding of the impact of large customers, like data centers. The Louisiana Senate adopted a resolution establishing a task force to study energy self-generation and industrial microgrids, including the interconnection of generators and industrial loads to the grid. Duke Energy released a report on large load customer additions, describing how it determines which projects will come to fruition; the report spurred the North Carolina Utilities Commission to investigate large electric load additions, starting with a technical conference in October 2025. The Pennsylvania Public Utility Commission held a hearing in April 2025 to examine how data centers will impact the state's electric grid, and New Jersey lawmakers passed a bill directing regulators to study the same, which the Governor signed in early Q3 2025. North Dakota will undertake a similar study, with the addition of examining the effect on the regulatory structure and economic development of the state, not just the grid.

Legislatures Spur Investigations into Advanced Nuclear and Geothermal

State legislatures are spurring investigations into advanced nuclear and geothermal, looking for alternative ways to clean and diversify their electric generation outside of more "traditional" clean resources in the U.S. The Hawaii State Legislature adopted multiple resolutions establishing two working groups to study the policy landscapes and feasibility of geothermal and advanced nuclear energy in the state. The Governor of Maine signed a bill ordering the Energy Office to evaluate the feasibility of geothermal power plants at brownfields or state-owned properties. Oklahoma lawmakers ordered the Corporation Commission to study the technical and legal feasibility of promoting nuclear energy, including small modular and microreactors, while South Carolina expanded its Nuclear Advisory Council to develop a strategic plan for nuclear generation and ordered utilities to explore the potential of fusion and advanced nuclear. Meanwhile, Texas legislators established the Texas Advanced Nuclear Office to promote the development of advanced nuclear reactors, including a report on necessary regulatory functions.

Figure 6. Most Active States of Q2 2025



FULL REPORT PRICING DETAILS

Full editions of the 50 States of Power Decarbonization are available for purchase [here](#) at a cost of \$500 for a single issue and \$1,500 for an annual subscription. A 20% subscription discount is available to non-profit, government, and education customers. An annual subscription to the 50 States of Power Decarbonization report can be added on to any other DSIRE Insight subscription (see options below) at a cost of \$1,200.

Complimentary copies are available for policymakers and regulators (limited to federal and state legislators and staffers, utility commissioners, utility commission staff, state consumer advocate office staff, and state energy office staff). [Contact us](#) to receive a complimentary copy of the most recent report.

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