GTI ENERGY

RAISE

Reliable Affordable Infrastructure for Secure Energy

October 2026

Regional Emerging Fuel Pathways for a Reliable and Resilient U.S. Energy Future

REGIONAL POLICY PROFILES AND NATIONAL LANDSCAPE ASSESSMENT



Table of Contents

Acknowledgements ii
Legal Notice iii
Glossary v
Executive Summary 1
Introduction 3
Policy & Regulatory Landscape Review 4
Recent Federal Policy Drivers 6
Regional Policy Profiles 8
East Coast Policy Profile 9
Midwest Policy Profile 15
Gulf Coast Policy Profile 22
Rocky Mountain Policy Profile 28
West Coast Policy Profile 34
National Policy & Regulatory Landscape Assessment 40
Natural Gas Infrastructure and Industry 46
Emerging Fuels and Decarbonization Pathways 48
Reliability, Resilience, and System Planning 50
Workforce Development 52
Implications & Opportunities 54
Infrastructure Modernization and Investment 54
Reliability Planning, Resource Adequacy, and Demand Growth 55
Gas-Electric Coordination 56
Affordability in Energy System Planning 57
Emerging Fuel Governance and Institutional Readiness 58
Workforce and Implementation Capacity 59

Policy Conclusions 59

Acknowledgements

GTI Energy designed the Resilient Affordable Infrastructure for Secure Energy (RAISE) collaborative to map the most valuable opportunities for leveraging gas infrastructure in current and future energy systems, including the potential for integrating lower-emission fuels. By mapping these opportunities, RAISE provides a holistic understanding of the natural gas infrastructure system and actionable recommendations on the research, technology development, partnerships and investments required to upgrade and evolve the country's vast network of gas pipelines and storage systems.

Contributors:
Dylan Chandler
May Kwan
Zane McDonald

Legal Notice

This report was prepared by GTI Energy.
None of GTI Energy, the members of GTI Energy, the funders of the project giving rise to this report, GTI Energy's contractors, nor any person acting on behalf of any of them (collectively "RAISE Users"):

a. *Makes any warranty or representation, express or implied with respect to the accuracy, completeness, or usefulness of the information contained in this report, or that the use of any information, apparatus, method, or process disclosed in this report may not infringe privately-owned rights. Conclusions and analysis of results by GTI Energy represent GTI Energy's opinion based on inferences from measurements and empirical relationships, which inferences and assumptions are not infallible, and with respect to which competent specialists may differ. Accordingly, you are hereby advised that the information contained in this report may be outdated or include omissions, inaccuracies or other errors. All information is provided (to the fullest extent of the law) on an 'as seen' basis and GTI Energy hereby expressly disclaims, and makes no representations, guarantees, or warranties of any kind, express or implied, with respect to this report, including the information, content and materials of this report.*
b. *Assumes any liability with respect to the use of, or for any and all damages resulting from the use of, any information, apparatus, method, or process disclosed in this report; any other use of, or reliance on, this report by you (and your company) is at your (and your company's) sole risk. TO THE FULLEST EXTENT PERMITTED BY LAW, NEITHER GTI ENERGY NOR ANY OF THE OTHER RAISE PARTICIPANTS, WILL BE LIABLE FOR DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE USE OF THIS REPORT OR THE INFORMATION, CONTENT AND MATERIALS INCLUDED ON THIS REPORT. THIS IS A COMPREHENSIVE LIMITATION OF LIABILITY THAT APPLIES TO ALL DAMAGES OF ANY KIND, INCLUDING (WITHOUT LIMITATION) COMPENSATORY, DIRECT, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF DATA, INCOME OR PROFIT, LOSS OF OR DAMAGE TO PROPERTY AND CLAIMS OF THIRD PARTIES, WHETHER OR NOT GTI ENERGY WAS ADVISED OF SUCH DAMAGES. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, THE AGGREGATE LIABILITY TO YOU (AND YOUR COMPANY), IF ANY, WHETHER UNDER CONTRACT, TORT, STATUTE, OR OTHERWISE, SHALL NOT EXCEED THE AMOUNT OF FIFTY US DOLLARS ($50.00 USD). THE FOREGOING LIMITATIONS WILL APPLY EVEN IF THE REMEDY STATED HEREIN FAILS OF ITS ESSENTIAL PURPOSE.*

c. *GTI Energy reserves the right to make changes to this report without notice.*

Glossary

Term	Definition
Carbon Capture and Storage (CCS)	A process that captures carbon dioxide from industrial or energy-related sources and stores it in geologic or other suitable formations.
Carbon Capture, Utilization, and Storage (CCUS)	A set of technologies and processes used to capture carbon dioxide from industrial or energy-related sources for use, transport, or long-term storage.
Department of Energy (DOE)	Federal agency responsible for national energy policy, energy research, technology development, and related funding programs.
Emerging Fuels	Lower-carbon fuel pathways evaluated in the RAISE National Case Study, including hydrogen and renewable natural gas, that may support energy system diversification, emissions reduction, and infrastructure adaptation.
Energy Information Administration (EIA)	Federal statistical agency within DOE that collects, analyzes, and publishes energy data and information.
Federal Energy Regulatory Commission (FERC)	Federal agency that regulates interstate electricity markets, natural gas pipelines, hydropower projects, and related energy infrastructure.
Hydrogen (H_2)	An emerging fuel that can be produced through multiple pathways and used in applications such as industrial processes, power generation, storage, transportation, and blending with natural gas.
Natural Gas Combined Cycle (NGCC)	A power generation technology in which a gas turbine generates electricity and waste heat is used to produce steam that drives a second turbine for additional electricity generation.

North American Electric Reliability Corporation (NERC)	Organization responsible for developing and enforcing reliability standards for the North American bulk power system.
Petroleum Administration for Defense Districts (PADD)	Regional groupings of the 50 U.S. states and the District of Columbia used to assess petroleum supply and distribution. PADDs support analysis of regional petroleum product availability and movements throughout the U.S.
U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA)	Federal agency responsible for pipeline safety, hazardous materials transportation safety, and related infrastructure regulations.
Promoting Innovation in Pipeline Efficiency and Safety (PIPES) Act	Federal pipeline safety legislation used to reauthorize and update pipeline safety programs and related infrastructure oversight.
Renewable Natural Gas (RNG)	Pipeline-quality methane produced from organic waste sources such as landfills, wastewater treatment facilities, and agricultural waste streams.
Underground Injection Control (UIC) Program	A regulatory program governing underground injection wells, including Class VI wells used for geologic carbon dioxide storage.

Executive Summary

The RAISE National Case Study examines how emerging fuel pathways may contribute to a reliable, resilient, and affordable U.S. energy future under varied technical, economic, market, and policy conditions. As one component of that effort, this report evaluates the policy and regulatory landscape shaping natural gas infrastructure, hydrogen, renewable natural gas (RNG), carbon management, reliability planning, affordability considerations, and workforce development across the five U.S. Petroleum Administration for Defense Districts (PADDs) regions (East Coast, Midwest, Gulf Coast, Rocky Mountain, and West Coast).

The research reflects information available through the first half of 2026 and was organized using a common framework designed to support consistent comparison across regions. Regional policy profiles were developed for each of the five regions, synthesizing state legislation, regulatory proceedings, energy planning activities, and programmatic initiatives relevant to emerging fuels and infrastructure development. Findings from these regional profiles were then incorporated into a national assessment supported by a series of comparative matrices. Together, the profiles and matrices provide a structured review of policy activity, regulatory approaches, implementation readiness, and strategic priorities across regions, allowing similarities and differences to be evaluated using a consistent set of metrics.

The national assessment indicates that the U.S. is not moving toward a single policy pathway for future energy system development. Instead, states and regions are pursuing a range of approaches shaped by infrastructure assets, resource availability, economic priorities, regulatory structures, reliability considerations, and climate or emissions objectives. At the same time, several themes appear across most regions. Reliability, resilience, and affordability remain relevant considerations in energy planning and infrastructure decision-making, infrastructure modernization continues to receive broad policy attention, and emerging fuels are increasingly being evaluated as potential tools for system flexibility, emissions reduction, economic development, and long-term infrastructure adaptation. Across these differing approaches, affordability is treated as a cross-cutting consideration that includes customer and system costs, infrastructure

investment and utilization, cost allocation, resource optionality, and the costs of both maintaining existing systems and transitioning toward new resources.

These findings suggest that the U.S. energy policy landscape is becoming increasingly complex, integrated, and regionally differentiated. Across all five regions, policy activity is increasingly focused on ensuring that energy systems remain reliable, adaptable, affordable, and prepared for changing infrastructure and demand needs. Although regions continue to pursue different strategies that reflect local conditions and priorities, common areas of focus include strengthening infrastructure, improving coordination across energy systems, evaluating customer and system costs, and building the institutional and workforce capabilities needed to support long-term implementation. As energy systems continue to evolve, policy and regulatory frameworks will remain contributing factors in shaping how infrastructure and emerging technologies are planned, financed, permitted, operated, and adapted to meet future energy needs while managing affordability, reliability, and long-term customer impacts.

Introduction

The U.S. energy landscape is undergoing changes as states, utilities, infrastructure operators, and policymakers respond to evolving challenges related to reliability, resilience, affordability, emissions reduction, and growing energy demand. At the same time, emerging fuels such as hydrogen (H_2) and renewable natural gas (RNG) are receiving increased attention as potential pathways to support energy system diversification, strengthen infrastructure flexibility, and reduce greenhouse gas emissions while leveraging existing energy assets.

The RAISE National Case Study examines how emerging fuel pathways may contribute to a reliable and resilient energy future across different regions of the U.S. As part of that broader effort, this report evaluates the policy and regulatory landscape influencing natural gas infrastructure, emerging fuels, system planning, and workforce development. Policy and regulatory frameworks play a role in shaping infrastructure investment, operational planning, technology deployment, and long-term energy system development, making them a complement to the technical and economic analyses conducted elsewhere in the case study.

This report is not intended to identify a single "best" policy pathway or prescribe a uniform approach to energy system development. Rather, it provides a structured snapshot of how different regions are addressing common challenges through legislation, regulation, planning processes, and programmatic initiatives. The analysis is organized around four topic areas: Natural Gas Infrastructure & Industry; Emerging Fuels & Decarbonization Pathways; Reliability, Resilience & System Planning; and Workforce Development. Together, these topic areas provide a framework for understanding how policy is influencing energy systems across the country.

Drawing from policy profiles developed for the five regions, the report highlights both areas of convergence and points of divergence in state and regional approaches. While regions continue to pursue distinct energy strategies that reflect local priorities, resources, infrastructure and market conditions, common themes emerge throughout the analysis. Reliability and resilience remain key policy drivers, infrastructure modernization continues to receive broad support, workforce development is gaining prominence, and interest in hydrogen, RNG, and carbon management technologies

continues to expand. Examining these trends within a common framework provides context for understanding the range of pathways being pursued to support reliable, resilient, and adaptable energy systems across the U.S.

Policy & Regulatory Landscape Review

Policy and regulatory frameworks play a role in shaping how infrastructure systems develop, how emerging fuels are integrated, and how reliability and resilience are maintained. This review examines the policy environment influencing natural gas systems and emerging fuel pathways across the U.S. It is grounded in an assessment of state-level legislation, regulatory proceedings, and planning frameworks that define how energy policy is implemented across the five regions. These state actions are complemented by a targeted review of recent federal developments, which provide additional context for the broader policy environment.

A framework was developed to provide a consistent basis for analyzing policy and regulatory activity across all states and regions. This framework supports structured comparison across the regional policy profiles that follow by applying the same organizing logic to each state review and regional synthesis (Figure 1). The research is organized around four core topic areas, each representing a primary dimension of the policy landscape influencing natural gas systems and broader energy system development. Within each topic, a set of defined subtopics was applied across all states to allow for more detailed comparison and identification of regional and national patterns.

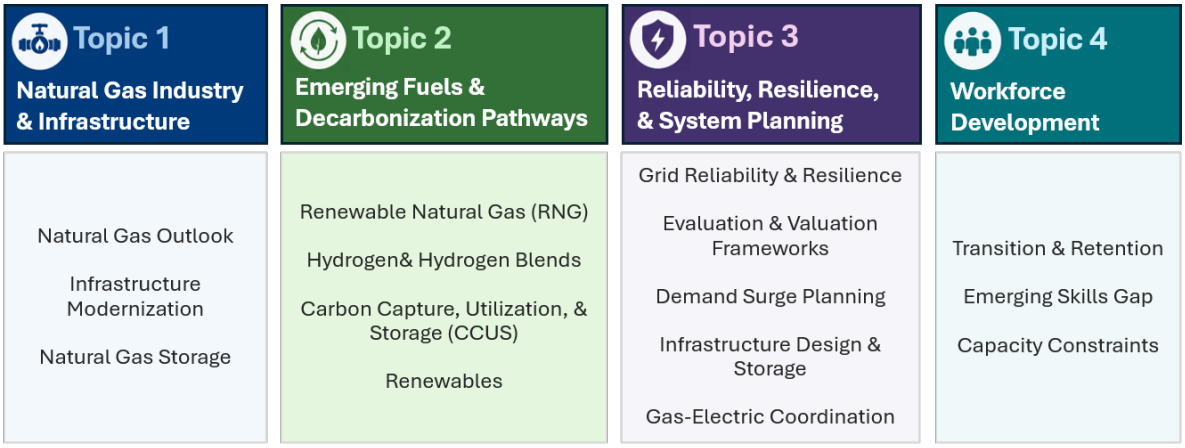


Figure 1: Policy and regulatory research framework topics and subtopics

Topic 1: Natural Gas Infrastructure & Industry focuses on policies affecting the role, condition, and management of existing natural gas systems. This includes state actions related to the future role of natural gas, infrastructure maintenance and modernization, and natural gas storage. The review captures how states address pipeline replacement, system integrity, storage capacity, and long-term infrastructure planning within evolving energy policy frameworks.

Topic 2: Emerging Fuels & Decarbonization Pathways examines policies related to lower-carbon energy resources and technologies. This includes RNG, hydrogen and hydrogen blends, CCUS, and broader renewable energy development. The review documents state-level legislation, regulatory actions, and programs associated with the production, integration, and use of these resources, particularly where they intersect with existing natural gas infrastructure.

Topic 3: Reliability, Resilience & System Planning addresses policies and frameworks related to maintaining reliable energy service under changing system conditions. This includes actions related to infrastructure resilience, extreme weather preparedness, demand growth, resource adequacy, and gas-electric coordination. The review also captures state-level approaches to evaluating and planning for system performance under stress conditions, including planning processes, regulatory proceedings, and reliability assessments.

Topic 4: Workforce Development focuses on policies and programs related to workforce readiness within the energy sector. This includes workforce training initiatives, education and credentialing programs, and efforts to align skills development with changing industry needs. The review considers workforce activities associated with natural gas systems as well as emerging technologies such as hydrogen, RNG, and CCUS.

The research framework also provides the organizational basis for the RAISE National Policy Database. The policy database serves as the foundation for both the regional policy profiles and the national landscape assessment. In addition to documenting individual policy actions, the database supports comparative regional analysis through a set of policy activity matrices. These matrices provide a structured view of how policy

activity is distributed across topics and subtopics, helping identify regional concentrations of activity and broader national patterns. The matrices are intended as analytical tools for comparing policy emphasis and policy activity characteristics across regions. Detailed descriptions of matrix construction, weighting approaches, attribution rules, and calculation methodology are available within the interactive policy database.

Recent Federal Policy Drivers

Recent federal actions in 2025 and 2026 have contributed to a changing policy environment for natural gas infrastructure, system reliability, and emerging energy technologies. These actions span executive orders, legislation, regulatory updates, funding programs, and reliability standards. Together, they provide context for how federal priorities and programs are evolving across energy infrastructure, fuel systems, and system planning.

A continued area of federal activity has been domestic energy production and infrastructure development. Executive Orders 14154, "Unleashing American Energy," and 14156, "Declaring a National Energy Emergency," issued in January 2025, established a federal direction focused on energy affordability, reliability, and supply security. These orders directed federal agencies to reduce regulatory barriers, accelerate permitting processes, and prioritize infrastructure projects identified as relevant to national energy and economic objectives.

Pipeline safety and infrastructure modernization remain ongoing federal priorities. Congress is considering reauthorization of pipeline safety programs through the Promoting Innovation in Pipeline Efficiency and Safety (PIPES) Act of 2025, which would extend and update federal safety programs and support modernization activities. At the same time, U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) continues to administer the Natural Gas Distribution Infrastructure Safety and Modernization (NGDISM) Grant Program, which provides funding to replace aging and leak-prone distribution infrastructure. These efforts focus on maintaining the safety and integrity of existing pipeline systems while supporting replacement of older materials such as cast iron and bare steel.

Federal regulatory agencies have also implemented changes related to infrastructure permitting and approval processes. In June 2025, Federal Energy Regulatory

Commission (FERC) introduced measures intended to streamline interstate natural gas pipeline approvals, including adjustments to certification processes and timelines. In parallel, federal policymakers have considered proposals to establish siting frameworks for hydrogen and carbon dioxide (CO_2) pipelines, reflecting ongoing discussions about how permitting processes apply to emerging infrastructure types.

Federal programs and policy initiatives continue to support the development of emerging fuels and carbon management technologies. Proposed legislation such as the Renewable Natural Gas Incentive Act of 2025 would provide financial incentives to support RNG deployment. The Department of Energy (DOE)'s Regional Clean Hydrogen Hubs Program is advancing hydrogen production, transportation, and end-use projects across multiple regions. Federal research and strategy documents also continue to examine opportunities for integrating hydrogen and other alternative fuels into existing energy systems, including natural gas infrastructure.

CCUS has also remained a focus of federal policy activity. Updates to the federal 45Q tax credit continue to support carbon capture project development. In addition, PHMSA has proposed updates to CO_2 pipeline safety regulations, addressing areas such as design, operation, and emergency response for CO_2 pipeline systems. These efforts are part of broader federal actions related to CO_2 transportation and storage infrastructure.

Federal reliability standards and planning initiatives have evolved in response to recent extreme weather events. FERC has approved the North American Electric Reliability Corporation's Extreme Cold Weather Preparedness standard (EOP-012-3), which establishes requirements related to generator winterization, fuel planning, and preparedness for cold-weather conditions. Federal agencies and reliability organizations have also continued to publish assessments identifying system performance during high-demand events and extreme conditions.

In addition to operational standards, federal agencies have advanced initiatives related to long-term system planning and resilience. The DOE has supported the development of planning approaches that incorporate a range of risks, including extreme weather, fuel supply disruptions, and infrastructure interdependencies. Federal and multi-state efforts have also focused on developing methodologies for assessing system resilience and incorporating those considerations into planning and investment processes.

Workforce development has been identified in multiple federal reports and initiatives as a component of infrastructure and energy system investment. Federal programs and policy discussions have highlighted workforce needs related to pipeline modernization, emerging fuels, carbon management, and energy system operations. These efforts include training, workforce development programs, and coordination with industry and educational institutions.

Regional Policy Profiles

The regional policy profiles that follow synthesize state-level findings into a structured regional assessment of policy and regulatory activity across the five PADD regions. Each profile draws from the underlying state reviews to identify common themes, distinguishing policy approaches, and region-specific trends across the four research topic areas. These profiles form the basis for the national policy and regulatory landscape assessment by showing how state-level actions come together into broader regional patterns.

East Coast Policy Profile

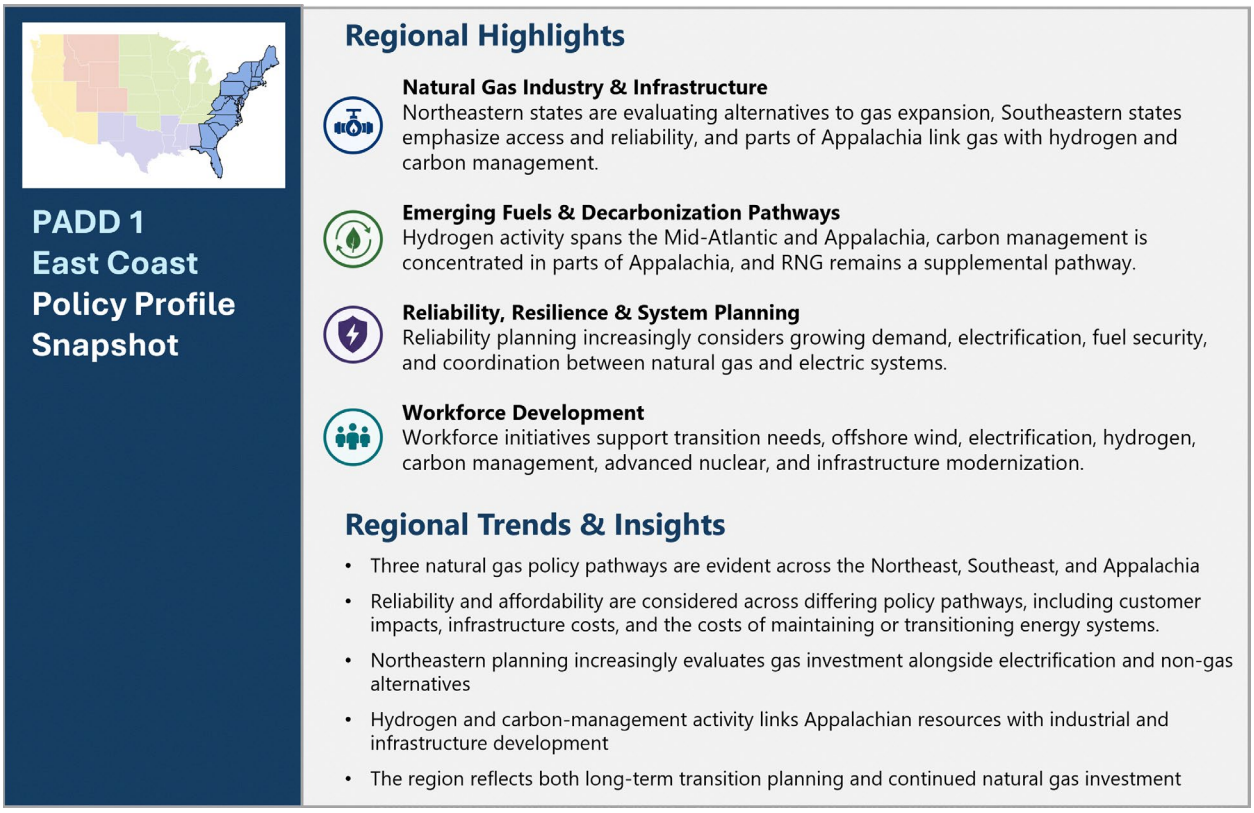


Figure 2: East Coast regional policy profile snapshot

Trends & Insights

- The East Coast is characterized by multiple policy pathways, including electrification-focused strategies, continued natural gas development, and initiatives linking natural gas systems with hydrogen and carbon management.
- Reliability and affordability remain the most consistent drivers of policy and infrastructure decisions across the region, influencing resource planning, system modernization, resilience investments, and technology deployment.
- Hydrogen is emerging as a significant area of regional policy interest, while carbon management is becoming a more prominent strategy within portions of Appalachia.
- Existing infrastructure is increasingly being considered to support future energy system development through applications such as RNG, hydrogen, carbon management, and energy storage.

- Demand growth, electrification, industrial development, and workforce availability are becoming increasingly relevant considerations in long-term energy system planning across the region.

Natural Gas Infrastructure & Industry

The East Coast has a diverse natural gas policy environment, with states pursuing markedly different visions for the future role of natural gas within broader energy systems. In the Northeast and portions of the Mid-Atlantic, policymakers are increasingly implementing measures intended to reduce long-term reliance on conventional natural gas through electrification, clean heat programs, and utility planning reforms. New York's All-Electric Buildings Law, Gas System Planning Order (Case 20-G-0131), and Utility Thermal Energy Network and Jobs Act; Massachusetts' Future of Gas Final Order (D.P.U. 20-80); Vermont's Act 18 of 2023, which directed development of a proposed Clean Heat Standard that was ultimately not adopted; and Rhode Island's Clean Heat RI program collectively reflect a growing emphasis on alternative thermal infrastructure, building decarbonization, and long-term emissions reduction planning. These policies generally do not eliminate natural gas in the near term but increasingly require utilities and regulators to evaluate alternatives to traditional system expansion. In contrast, many Southeastern states continue to view natural gas as a reliability and economic development resource. Florida's HB 919, Georgia's HB 150, and North Carolina's Session Law 2023-58 (HB 130) preserve consumer access to energy services by limiting local restrictions based on fuel or energy source. South Carolina's Energy Security Act (Act 41 of 2025) and Georgia's 2025 Integrated Resource Plan further reinforce the role of natural gas in supporting electricity generation and resource adequacy. Pennsylvania and West Virginia represent a third policy pathway that links continued natural gas development to hydrogen production, carbon management, and industrial competitiveness through Pennsylvania's Act 87 of 2024, the Appalachian Regional Clean Hydrogen Hub (ARCH2), and West Virginia's Class VI Underground Injection Control primacy authority. Delaware's participation in the Mid-Atlantic Clean Hydrogen Hub (MACH2) reflects a related hydrogen development pathway elsewhere in the Mid-Atlantic.

Despite differing views of natural gas demand, infrastructure modernization remains a common priority across the region. Maryland's STRIDE Program, Pennsylvania's DSIC

mechanism, Massachusetts' Gas System Enhancement Plan framework, and Virginia's SAVE Act continue to support replacement or improvement of eligible infrastructure and recovery of approved costs. However, states increasingly differ in how modernization investments are evaluated. In transition-oriented jurisdictions, infrastructure replacement is often assessed alongside electrification, thermal energy networks, and non-pipeline alternatives, while more gas-supportive states continue to emphasize safety, resiliency, service reliability, and economic development. Affordability considerations increasingly extend beyond near-term energy prices to questions about infrastructure investment, cost recovery, system utilization, and the allocation of transition costs. In some states, policymakers emphasize preserving access to natural gas and other energy options, while regulators in several transition-oriented jurisdictions are examining whether continued gas system expansion or modernization could increase long-term ratepayer exposure as demand patterns change.

Natural gas storage and subsurface resource governance remain components of the region's infrastructure policy landscape. Pennsylvania regulates underground gas storage wells through permitting, construction, operation, testing, reporting, and plugging requirements, while New York maintains a statutory framework for underground gas storage. Pennsylvania's Act 87 of 2024 and West Virginia's Class VI primacy authority also illustrate how subsurface policy frameworks are being extended to carbon management. Together, these policies illustrate how subsurface governance continues to support established gas storage functions while also being extended to emerging carbon management applications, even as state-level energy objectives diverge.

Emerging Fuels & Decarbonization Pathways

Emerging fuels and lower-carbon energy pathways are becoming increasingly relevant components of East Coast energy policy, although states vary significantly in their preferred approaches. RNG continues to gain traction as a means of reducing emissions while leveraging existing gas infrastructure. New Hampshire's authorization for utility RNG procurement proposals, Florida's HB 7073 (2024), South Carolina's Act 225 of 2026, and North Carolina's funding for a swine-farm digester pilot involving biogas or RNG production demonstrate a range of policy mechanisms supporting renewable gas procurement, equipment, and project development. Across much of the region, RNG is

being pursued as a supplemental decarbonization strategy that can complement electrification, efficiency, and other emissions reduction measures.

Hydrogen policy activity is present across much of the East Coast, but its scale and maturity vary significantly by state and initiative. MACH2, ARCH2, the Southwest Virginia Hydrogen Hub Planning Grant Program, Connecticut's Public Act 23-156, Florida's Hydrogen Vehicle Fueling Infrastructure Evaluation, Pennsylvania's Regional Clean Hydrogen Hub Tax Credit, and West Virginia's now-expired Hydrogen Power Task Force reflect growing interest in hydrogen production, infrastructure, transportation, potential uses, and workforce development. However, outside of federally supported hub activity, many state-level hydrogen policies remain focused on planning, study, incentives, coordination, or early-stage enabling conditions rather than deployment at scale. As a result, hydrogen represents an area of emerging regional interest rather than a fully established point of regional cohesion, with continued challenges related to cost, infrastructure readiness, market development, permitting, and end-use demand likely to shape the pace of future deployment.

CCUS has become a particularly relevant strategy within Pennsylvania and West Virginia. Pennsylvania's Act 87 of 2024 established a framework governing carbon storage development, while West Virginia's Class VI UIC primacy authority provides the state with primary enforcement authority for Class VI wells used for geologic carbon dioxide sequestration. Additional interest in carbon management is reflected in Virginia's Power Innovation Fund, which includes carbon capture among the innovative energy technologies eligible for support. Collectively, these efforts reflect interest in carbon management as both an emissions reduction strategy and an economic development opportunity.

Renewable energy deployment continues throughout the region, particularly through offshore wind, solar generation, energy storage, and transmission planning. New Jersey's offshore wind target, Maryland's Promoting Offshore Wind Energy Resources Act, New York's Climate Leadership and Community Protection Act, and the Virginia Clean Economy Act are examples of state-level clean energy policy. At the same time, several states are examining advanced nuclear technologies, energy storage, hydrogen-capable resources, and other dispatchable options to support long-term reliability,

reflecting a growing focus on balanced energy portfolios rather than reliance on any single technology pathway.

Reliability, Resilience & System Planning

Reliability and resilience continue to shape energy policy decisions across the East Coast regardless of broader climate or energy objectives. States throughout the region are responding to challenges associated with extreme weather, resource adequacy, fuel security, electrification, and growing demand through a combination of infrastructure investment, resilience planning, and long-term system evaluation. New York's NY Prize Community Microgrid Competition and Clean Energy Standard proceeding, Maryland's Grid Reliability and Inclusive Distribution Act provisions and PC44 proceeding, Georgia's 2025 Integrated Resource Plan, and South Carolina's Energy Security Act highlight the role reliability considerations play in infrastructure and resource planning efforts.

States are also increasingly reassessing how energy infrastructure investments are evaluated. In jurisdictions such as New York, Massachusetts, Maryland, and Rhode Island, regulators are placing greater emphasis on resilience benefits, long-term utilization, climate objectives, and non-pipeline alternatives when evaluating proposed investments. Conversely, many Southeastern and Appalachian states continue to prioritize resource adequacy, dispatchability, economic development, and fuel security within infrastructure planning processes. These differing evaluation frameworks are creating a more diverse regional planning environment while still reflecting a common concern regarding long-term reliability and affordability. Affordability is frequently considered alongside reliability in East Coast resource planning. Natural gas, dispatchable generation, efficiency, electrification, storage, demand response, and non-infrastructure alternatives are evaluated through differing combinations of least-cost, cost-effectiveness, customer-impact, fuel-risk, and resource adequacy criteria. Across these approaches, policymakers are balancing the cost of maintaining dependable existing systems against the investment, conversion, and infrastructure costs associated with alternative pathways.

Demand growth and changing load patterns are becoming more visible in state planning processes. Georgia's 2025 Integrated Resource Plan, North Carolina's Carbon Plan and Integrated Resource Plan, and South Carolina's Ten-Year State Energy

Assessment and Action Plan address projected demand, resource adequacy, infrastructure needs, storage, and long-term system performance. These trends are increasing the importance of long-term resource planning, storage deployment, system flexibility, and infrastructure coordination as states evaluate changing resource mixes and future energy needs.

Growing interdependence between natural gas and electric systems is also elevating the importance of coordinated planning. South Carolina's Ten-Year State Energy Assessment and Action Plan requires consideration of electric and natural gas adequacy, reliability, infrastructure, and cost, while the Canadys Station Project authorization links gas-fired generation with related electric transmission development. These measures reflect increasing recognition that future reliability depends on effective coordination among electric utilities, natural gas providers, generators, and system operators. As electrification, economic growth, and new energy technologies continue to reshape demand patterns, coordinated reliability planning across infrastructure systems is likely to become increasingly relevant throughout the region.

Workforce Development

Workforce development is becoming an increasingly relevant factor across the East Coast energy sector. States are expanding workforce initiatives related to infrastructure modernization, offshore wind development, electrification, hydrogen, carbon management, and advanced nuclear technologies. Some initiatives focus on transition and retention: New York's Utility Thermal Energy Network and Jobs Act includes workforce provisions; Massachusetts' D.P.U. 20-80 addresses workforce considerations in the context of gas-system transition; Maryland's Climate Solutions Now Act includes workforce-transition requirements; Vermont's climate policy framework requires consideration of a just transition.

Other policies address emerging skills through education and technology-specific training. Virginia's Nuclear Education Grant Fund and Connecticut's Green Jobs Corps framework support workforce preparation for advanced nuclear, clean energy, and other evolving technical fields. Virginia's Power Innovation Fund also supports nuclear workforce development alongside research and development of innovative energy technologies.

States are also using grants, apprenticeships, internships, and workforce-pipeline programs to address capacity constraints. Maine's Clean Energy Partnership, Massachusetts' Equity Workforce Training grants, New York's Clean Energy Internship Program, New Hampshire's registered electrician apprenticeship and Virginia's SPARK pilot provide different mechanisms for expanding access to training and work-based learning. As utilities and policymakers pursue increasingly complex energy and infrastructure objectives, workforce capacity is becoming a strategic consideration alongside technology deployment and capital investment.

Midwest Policy Profile



Figure 3: Midwest regional policy profile snapshot

Trends & Insights

- The Midwest reflects two broad energy policy pathways: a transition-oriented pathway in Illinois, Michigan, and Minnesota, and a fuel-choice and reliability-focused pathway across many other states, with substantial variation within both groups.

- Infrastructure modernization remains a recurring area of regional policy activity, with multiple states supporting pipeline replacement, safety improvements, and recovery of approved infrastructure costs.
- Affordability and reliability are closely linked across these differing strategies, with states evaluating the costs of maintaining existing resources, developing new infrastructure, preserving energy options, and transitioning toward alternative energy pathways.
- CCUS is one of the region's more active emerging policy areas, although state approaches differ and pipeline siting and landowner protections remain contested in some states.
- Hydrogen is receiving growing but uneven state-level attention through planning, production incentives, infrastructure regulation, and broader energy-innovation frameworks.
- Reliability, extreme weather preparedness, demand growth, and workforce availability are increasingly shaping long-term energy infrastructure and resource planning decisions across the region.

Natural Gas Infrastructure & Industry

The Midwest contains substantially different natural gas policy approaches. Illinois, Michigan, and Minnesota are increasingly evaluating the long-term role of natural gas within broader clean energy requirements and planning frameworks. The Illinois Commerce Commission's Future of Gas proceeding and Minnesota's gas system planning investigation directly address future gas system policy, while Illinois' Climate and Equitable Jobs Act, Michigan's Public Act 235 of 2023, and Minnesota's carbon-free electricity standard establish the broader policy context. These measures do not eliminate natural gas in the near term but increasingly place future gas system decisions alongside broader energy system objectives.

By contrast, several Midwestern states have adopted policies that preserve customer access to natural gas or limit local restrictions based on energy source. Indiana's HEA 1191, Iowa's HF 555, Kansas' SB 24, Kentucky's KRS 65.575, Missouri's HB 734, South Dakota's fuel gas preemption laws, and Tennessee's Freedom to Cook Act illustrate this tendency. Indiana's SEA 178, Ohio's HB 507, and Tennessee's Natural Gas Innovation Act also place natural gas within broader eligibility or investment frameworks. Wisconsin

maintains clean energy and renewable resource policies but has not enacted the fuel choice proposals reviewed here.

Despite differing views of natural gas demand, infrastructure modernization remains a recurring area of regional policy activity. Indiana's Transmission, Distribution, and Storage System Improvement Charge, Kansas' Gas System Reliability Surcharge, Missouri's Infrastructure System Replacement Surcharge, Kentucky's KRS 278.509, Minnesota's Gas Utility Infrastructure Cost Rider, and Iowa's capital infrastructure adjustment mechanism support recovery of approved replacement or improvement costs. Michigan's gas safety standards, Ohio's Gas Pipeline Safety Program, South Dakota's Pipeline Safety Program, and Wisconsin's gas safety standards provide additional examples of state oversight. Even in transition-oriented states, modernization remains a priority, although infrastructure investments increasingly face scrutiny regarding affordability, long-term utilization, and alignment with future energy plans.

Affordability considerations influence differing approaches to the future role of natural gas across the Midwest. Several states preserve customer access to natural gas and other energy sources, maintaining fuel optionality as reliability, demand, and cost conditions evolve. In more transition-oriented jurisdictions, policymakers and regulators are also examining whether continued gas system investment, changing utilization, and alternative resource development could affect long-term customer costs. Natural gas is therefore positioned both as an existing energy option with potential choice and reliability value and as an infrastructure system whose future costs are receiving greater scrutiny.

Natural gas storage remains a relevant infrastructure resource throughout the region, although it is generally treated as an operational and safety matter rather than a major recent policy focus. Illinois' Underground Natural Gas Storage Safety Act, North Dakota's underground gas storage law, Iowa's pipeline and storage code, Kansas' porosity storage regulation, Kentucky's reservoir protection requirements, and Missouri's underground storage statutes establish differing approaches to storage governance and safe operation. Separate carbon storage frameworks in several states also demonstrate growing policy attention to subsurface infrastructure, although these emerging applications should be distinguished from natural gas storage facilities.

Emerging Fuels & Decarbonization Pathways

Emerging fuels and decarbonization technologies are becoming increasingly relevant throughout the Midwest, although states differ in both policy ambition and deployment maturity. RNG has gained traction through utility programs, innovation frameworks, infrastructure rules, financing, and voluntary participation rather than binding mandates. Minnesota's and Tennessee's Natural Gas Innovation Acts, Missouri's Renewable Natural Gas Program, Iowa's gathering line requirements and infrastructure financing, Wisconsin's pilot investigation, South Dakota's interconnection tariff proceeding, and Oklahoma Natural Gas' voluntary pilot demonstrate varied approaches. These approaches highlight growing interest in integrating lower-carbon gaseous fuels into existing utility and pipeline systems.

Hydrogen is receiving growing but uneven policy attention across the Midwest. Illinois uses a tax credit and task force to address hydrogen use and planning, Oklahoma established a production goal after convening a temporary infrastructure task force, Iowa completed a renewable hydrogen analysis, Nebraska established a Hydrogen Hub Industry Work Group, and South Dakota adopted hydrogen pipeline requirements. Minnesota and Tennessee also include hydrogen within broader natural gas innovation frameworks. Although most policies remain focused on planning, incentives, studies, or infrastructure readiness, these actions indicate interest across different state policy environments.

North Dakota has a comparatively developed CCUS policy environment through its carbon storage and pore space framework, Class VI primacy, lignite research support, and project development initiatives. Illinois' SAFE CCS Act and Indiana's carbon sequestration statutes provide additional state frameworks, while Kansas, Kentucky, Minnesota, Nebraska, and Missouri use tax, pipeline, financing, study, or regulatory mechanisms. Activity in Iowa and South Dakota also reflects continuing debate over pipeline siting, eminent domain, easements, landowner protections, and safety. Together, these developments highlight both expanding state governance and continued variation in approaches over carbon management infrastructure.

Renewable energy policy varies widely. Illinois' Climate and Equitable Jobs Act, Michigan's 2023 clean energy legislation, and Minnesota's carbon-free electricity

standard establish clean energy requirements, while other states rely on legacy standards, voluntary goals, incentives, or market development. Advanced nuclear is also receiving renewed but uneven attention. Indiana has established a framework for considering small modular reactors, Wisconsin repealed restrictions on approval of new nuclear facilities, and Kentucky revised its nuclear certification framework and created a state nuclear energy development authority. These actions indicate growing interest in firm clean energy options, but they do not represent a uniform regional strategy.

Reliability, Resilience & System Planning

Reliability and resilience remain key cross-cutting policy considerations throughout the Midwest. Extreme weather, industrial energy demand, growing electric loads, transmission constraints, and gas-electric interdependencies have reinforced the importance of resource adequacy and system planning. States are responding through integrated resource planning, statutory service requirements, reliability studies, generation-retirement reviews, and infrastructure investment. Michigan's Statewide Energy Assessment, Minnesota's reliability provisions, Indiana's HEA 1520, Kentucky's SB 349, Nebraska's coordinated power supply requirement, and Missouri's coal standby capacity provision reflect differing approaches to long-term reliability.

States are also adopting more structured approaches to evaluating reliability and future system needs. Michigan's Statewide Energy Assessment evaluates supply, infrastructure, reliability risks, and planning needs, while Minnesota's gas system planning investigation addresses long-term investments, customer impacts, and alternatives. Indiana requires reliability evaluation and reporting under HEA 1520 and integrated resource planning, Illinois has completed extreme weather and resource adequacy studies, and Ohio requires long-term utility forecasts. Although the approaches vary, reliability considerations are increasingly incorporated into utility planning, infrastructure investment decisions, and resource adequacy assessments.

Demand growth and extreme conditions are becoming more visible in state planning. Illinois' extreme weather inquiry and resource adequacy studies address preparedness and projected demand, while Indiana's expedited framework addresses qualifying load growth. Ohio's long-term forecast requirements, Kentucky's generation retirement review standards, and Illinois' gas design day planning requirements provide additional

examples. These initiatives emphasize capacity adequacy, infrastructure requirements, system flexibility, costs, and the availability of replacement or dispatchable resources.

Affordability is frequently considered alongside reliability in Midwest resource planning. Policies supporting dispatchable generation, fuel diversity, infrastructure investment, efficiency, and alternative resources reflect differing approaches to maintaining reliable service at reasonable cost. Natural gas remains part of this calculation in many states because of its existing infrastructure and role in dispatchable generation, while other jurisdictions are evaluating whether alternative resources or changing gas-system utilization could provide more cost-effective long-term pathways.

Gas-electric coordination remains one of the region's least formalized policy areas. Some states address electric and natural gas system needs through separate planning, reliability, procurement, and infrastructure review frameworks, while most rely on utility operations, regional transmission organizations, and existing coordination mechanisms rather than dedicated state planning requirements. As demand patterns and resource portfolios evolve, coordination between natural gas and electric systems is likely to become increasingly relevant.

Workforce Development

Workforce development is becoming a factor for future energy deployment throughout the Midwest. Growing interest in hydrogen, CCUS, RNG, advanced nuclear, pipeline modernization, and grid resilience is creating demand for specialized technical skills. States differ widely in how directly they connect workforce policy to energy policy, but concerns regarding transition, emerging skills, and implementation capacity are becoming increasingly visible.

Transition and retention needs are addressed most directly in Illinois, Michigan, and Minnesota. Illinois' Displaced Energy Workers Bill of Rights provides transition assistance and worker protections. Michigan's Community and Worker Economic Transition Act establishes planning and assistance functions for affected workers and communities, and Minnesota's Energy Transition Office and Community Energy Transition Grants coordinate assistance related to energy facility changes and plant closures. Broader retraining and economic diversification programs in Kansas and Kentucky address related workforce and community needs.

Other initiatives focus on emerging technical skills. Illinois' Hydrogen Economy Task Force examines hydrogen workforce needs. The Iowa Energy Center supports energy sector training and technology development, and Kentucky's nuclear energy authority addresses related workforce opportunities. More broadly available training and credential programs in Indiana and Kansas may also support energy sector skill development, although their eligibility extends beyond energy occupations.

Workforce capacity is addressed through training networks, employer partnerships, scholarships, and job creation programs. Illinois' Clean Jobs Workforce Network provides an energy-specific training and employment model, while the Missouri Energy Workforce Consortium coordinates employers, educators, and labor partners around recruitment and workforce-pipeline needs. Iowa's Industrial New Jobs Training Program, Kansas' Industrial Training Program, Kentucky's Work Ready programs, and Wisconsin's clean energy planning use broader education and workforce development systems. As deployment of hydrogen, carbon management, advanced nuclear, and infrastructure modernization expands, workforce availability may increasingly affect implementation.

Gulf Coast Policy Profile



Figure 4: Gulf Coast regional policy profile snapshot

Trends & Insights

- The Gulf Coast remains strongly supportive of natural gas, but two broad policy pathways are evident: an infrastructure- and reliability-focused approach across Texas, Louisiana, Alabama, Arkansas, and Mississippi, and a more transition-oriented approach in New Mexico.
- Reliability, resilience, energy security, and affordability continue to drive infrastructure and energy policy decisions throughout the region, regardless of differences in emissions or renewable energy objectives.
- Hydrogen is receiving growing but uneven state-level attention through regulatory planning, incentives, task forces, infrastructure governance, and broader economic development initiatives.
- CCUS is one of the region's more developed emerging policy areas, with multiple states establishing legal, regulatory, permitting, funding, and long-term stewardship frameworks.

- Existing infrastructure and subsurface capabilities are increasingly considered alongside hydrogen, CCUS, storage, and other emerging energy applications.
- Workforce development, industrial growth, and rising energy demand are becoming increasingly relevant considerations in long-term energy system planning across the region.

Natural Gas Infrastructure & Industry

The Gulf Coast remains strongly supportive of natural gas, which continues to play a role in economic development, industrial competitiveness, electric reliability, and energy security, although policy mechanisms vary among states. Texas' Fuel Choice Act, Louisiana's Act 46, Arkansas' Energy Source Non-Discrimination Act, and Mississippi's All Fuels Act limit local restrictions based on energy source, while Louisiana's Act 462 incorporates natural gas generation into a broader energy security framework. Texas also supports eligible generation and reliability investment through the Texas Energy Fund. Alabama's policy activity is more directly reflected in pipeline safety, modernization, and storage oversight. New Mexico stands apart through the Energy Transition Act, Executive Order 2019-003, and Clean Transportation Fuel Standards Act, which place energy investment within a broader framework emphasizing emissions reduction, renewable energy deployment, and lower-carbon fuels.

Infrastructure modernization remains a common priority across the region regardless of broader energy policy differences. Texas' Gas Reliability Infrastructure Program supports cost recovery for eligible replacement and reliability investments, while HB 4384 allows specified costs associated with qualifying gas utility facilities placed in service to be deferred for later review and recovery. Louisiana's approved pipeline replacement rider provides another direct infrastructure investment mechanism. Pipeline safety programs or updated requirements in Alabama, Arkansas, Louisiana, Mississippi, New Mexico, and Texas demonstrate continued attention to safety, integrity, compliance, and replacement needs. Across the region, modernization efforts primarily focus on reliability, safety, system integrity, and operational performance rather than climate-driven infrastructure replacement.

Underground storage is governed through established state frameworks across the Gulf Coast. Alabama regulates storage in reservoirs and solution-mined cavities, while Louisiana, Mississippi, New Mexico, and Texas maintain laws or rules governing

underground natural gas storage. Arkansas' Act 140 of 2023 extends its underground storage framework to specified gases beyond natural gas, including hydrogen, carbon oxides, ammonia, nitrogen, and noble gases. Separate carbon storage laws in several states further demonstrate growing policy attention to subsurface infrastructure, although those applications should be distinguished from conventional natural gas storage. Together, these developments reinforce the Gulf Coast's position as a center for natural gas infrastructure, storage, and energy system development.

Emerging Fuels & Decarbonization Pathways

Emerging fuels and decarbonization technologies are becoming increasingly relevant throughout the Gulf Coast, although states generally favor approaches that build upon existing infrastructure and industrial strengths. RNG remains a relatively secondary policy priority compared to hydrogen and carbon management. New Mexico's clean transportation fuel standard and alternative fuel framework may provide broader pathways for lower-carbon transportation fuels, while Texas maintains natural gas vehicle incentives and related emissions reduction programs. However, the policies reviewed do not establish widespread RNG procurement requirements, utility blending mandates, or dedicated state RNG programs across the region.

Hydrogen is receiving growing but uneven attention across the Gulf Coast. Texas' HB 2847 created the Hydrogen Production Policy Council to study industry development and recommend approaches to regulating production, pipelines, and storage, while state grants support qualifying hydrogen infrastructure, vehicles, and equipment. Louisiana's Clean Hydrogen Task Force examines production, connective and storage infrastructure, and end uses. Arkansas' Act 140 extends underground storage authority to hydrogen and other specified gases, and New Mexico's Executive Order 2022-013 directs coordinated state support for a clean hydrogen economy. These actions indicate state interest, but policy mechanisms and maturity levels vary substantially.

CCUS has become one of the Gulf Coast's more developed emerging policy areas. Louisiana, Texas, Alabama, Arkansas, Mississippi, and New Mexico have established frameworks addressing geologic storage, regulatory authority, transport, pore space ownership, funding, permitting, or long-term stewardship. Louisiana's geologic sequestration law and trust fund, Texas' HB 1284 and Class VI primacy, Alabama's 2024

underground carbon dioxide storage framework, Arkansas' 2025 sequestration law, Mississippi's sequestration statutes, and New Mexico's HB 458 illustrate the range of approaches. Across much of the region, CCUS is viewed not only as an emissions reduction strategy but also as a tool for industrial competitiveness, economic development, and long-term utilization of energy infrastructure.

Renewable energy policies vary across the Gulf Coast. New Mexico continues to pursue a clean energy pathway through the Energy Transition Act and Community Solar Act, while Texas maintains a voluntary renewable energy credit program. Arkansas has revised its net metering framework, while other states rely more heavily on fuel diversity, affordability, natural gas, reliability, or broader energy policy strategies than on expansive renewable mandates. Across the region, renewables are increasingly incorporated into broader energy strategies alongside natural gas, hydrogen, carbon management, storage, and advanced energy technologies.

Reliability, Resilience & System Planning

Reliability, resilience, and energy security remain foundational policy drivers throughout the Gulf Coast. Extreme weather, industrial demand, and system growth have reinforced the importance of maintaining reliable energy infrastructure. Texas adopted an extensive set of measures following Winter Storm Uri, including SB 3, the Texas Energy Reliability Council, weatherization requirements for electric and natural gas facilities, critical supply chain mapping, an ERCOT reliability standard, and additional generation and reserve mechanisms. Other states use energy assurance planning, integrated resource planning, infrastructure investment, pipeline safety, storage policies, and broader state energy strategies to address reliability and preparedness.

States are also using more structured evaluation and planning processes. Texas' ERCOT reliability standard, seasonal resource adequacy assessments, and transmission planning requirements evaluate reliability needs, available resources, and system investments. New Mexico's integrated resource planning statute and commission rules require utilities to evaluate resource options for meeting future system needs. Arkansas' Energy Assurance Plan assesses energy sector risks and state preparedness, while Mississippi's energy policy guides consideration of energy development and use. Across the region,

policymakers are evaluating investments through the lenses of reliability, affordability, infrastructure resilience, and future energy demand.

Demand growth and infrastructure needs are becoming more visible in state policy. Arkansas' Generating Arkansas Jobs Act supports new generation investment, Mississippi's Power Play Initiative focuses on production and infrastructure development, and Texas' seasonal resource adequacy assessments, Energy Fund, and reserve mechanisms address future system needs. New Mexico's integrated resource planning framework and Arkansas' battery storage incentives provide additional examples of states evaluating generation, storage, infrastructure, and resource options under changing system conditions.

Affordability is frequently considered alongside reliability in Gulf Coast resource planning. Louisiana and Arkansas directly connect affordable energy with dispatchability and resource adequacy, while Texas's post-Winter Storm Uri framework emphasizes weatherization, gas-electric coordination, additional dispatchable generation, and system resilience. New Mexico approaches the affordability-reliability balance through least-cost resource planning, grid modernization, renewable resources, storage, and alternative resource evaluation. Across these strategies, policymakers are balancing the costs of reliability investment against the potential costs and risks associated with inadequate supply, infrastructure constraints, and changing resource mixes.

Growing interdependence between natural gas and electric systems is also shaping long-term planning. Explicit gas-electric coordination is most developed in Texas, where the Texas Energy Reliability Council and Electricity Supply Chain Security and Mapping Committee coordinate agencies and energy sector participants around reliability, emergency response, and critical infrastructure. Texas' 2021 emergency gas curtailment order also illustrates the relationship between gas delivery priorities and electric generation during system stress. Arkansas' Energy Assurance Plan addresses coordination more broadly through state preparedness and response planning. Elsewhere, related considerations appear indirectly through resource planning, storage governance, reliability requirements, and emergency preparedness policies.

Workforce Development

Workforce development is becoming an increasingly relevant factor across the Gulf Coast energy sector. States are expanding or adapting workforce initiatives related to energy transition, hydrogen, advanced nuclear, energy efficiency, infrastructure modernization, and other technical fields. These initiatives address transition and retention, emerging skills, and workforce capacity in different ways.

Transition and retention policies are most visible in New Mexico. The Energy Transition Act includes transition mechanisms for affected workers and communities, while the Sustainable Economy Task Force coordinates planning and recommendations for economic and workforce transition. Texas' advanced nuclear workforce program also requires attention to labor supply gaps and talent retention within that emerging industry.

Other initiatives address emerging technical skills through training, education, and workforce readiness efforts. Louisiana's H2Workforce Initiative supports hydrogen-related workforce development, and its offshore wind workforce readiness study examines workforce and training needs. New Mexico's TREC Program prepares residential contractors for energy efficiency, electrification, and clean energy improvements. Texas' advanced nuclear workforce program supports education, training pathways, and curriculum development, while the TRUE Grant Program and Skills Development Fund support rapid or employer-partnered training. Arkansas' Advanced Energy Apprenticeship provides an additional apprenticeship-based model.

States are also using broader initiatives to address workforce capacity. New Mexico's 2024 workforce initiative focuses on worker supply and job training capacity, Mississippi's energy planning process includes workforce capacity considerations, and the Texas advanced nuclear program specifically addresses skilled labor demand. Louisiana's workforce readiness study and Arkansas' apprenticeship program provide additional mechanisms for assessing needs and expanding training pathways. Across the region, workforce availability is increasingly viewed as a factor influencing implementation of conventional and emerging energy technologies.

Rocky Mountain Policy Profile



Figure 5: Rocky Mountain regional policy profile snapshot

Trends & Insights

- The Rocky Mountain Region is increasingly characterized by two broad natural gas policy paths: Colorado's managed-transition model and the fuel choice, reliability-focused approaches adopted by Idaho, Montana, Utah, and Wyoming.
- Reliability, affordability, and energy security remain important across these differing pathways, with states evaluating customer costs, resource adequacy, existing infrastructure, dispatchability, and the costs of maintaining or transitioning energy systems.
- Hydrogen is receiving growing but uneven regional policy attention, supported for reasons ranging from decarbonization and utility planning to economic development and resource utilization.
- CCUS is becoming one of the region's more institutionally developed emerging policy areas, with multiple states addressing ownership, liability, permitting, and long-term stewardship issues.

- Existing energy infrastructure is increasingly being considered to support lower-carbon fuels, hydrogen, carbon management, and emerging technologies.
- Advanced nuclear energy, workforce development, and long-term resilience planning are becoming increasingly relevant components of future regional energy strategies.

Natural Gas Infrastructure & Industry

The Rocky Mountain Region contains two broad approaches to natural gas policy. Colorado has adopted a climate-oriented framework that seeks to reduce emissions associated with natural gas while maintaining system reliability. Key policies include HB 19-1261 (Climate Action Plan to Reduce Pollution), SB 21-264 (Clean Heat Plans), and SB 23-291, which eliminated utility incentives for new gas line extensions. Together, these policies are reshaping gas utility planning around emissions reduction, energy efficiency, renewable fuels, and beneficial electrification rather than continued system expansion.

Idaho, Montana, Utah, and Wyoming have generally taken a different approach, adopting policies that preserve customer access to energy services and limit local restrictions based on fuel or energy source. Examples include Idaho's HB 106, Montana's SB 208 and SB 228, Utah's HB 17, and Wyoming's SF 152. Several states have reinforced this position through broader energy policies emphasizing dispatchable generation, affordability, and energy security. Utah's State Energy Policy and HB 422 supporting rural gas infrastructure expansion, Montana's HB 284, and Wyoming's dispatchable resource policies all highlight the continuing role of reliable energy resources in future energy planning.

Affordability considerations influence differing approaches to the future role of natural gas across the Rocky Mountain Region. Utah includes natural gas within a diverse portfolio intended to balance affordability, reliability, dispatchability, and growing demand, while Idaho, Montana, and Wyoming preserve access to natural gas and other energy services. Colorado evaluates gas infrastructure through clean heat planning, customer cost protections, line extension economics, fuel price risk, and alternatives to continued system expansion. Natural gas is therefore positioned both as an existing energy option with potential choice, infrastructure, and reliability value and as a system whose future investment and utilization may influence customer costs.

Despite these differences, infrastructure modernization remains an area of regional alignment. Colorado has implemented a comparatively structured modernization framework through Gas Infrastructure Planning Rules, pipeline integrity cost recovery, pipeline safety rules, and direction to develop advanced leak detection technology rules. Elsewhere, modernization is driven primarily through conventional pipeline safety programs and utility integrity management activities. Idaho's pipeline safety authority and utility integrity management activities, together with pipeline safety programs in Montana, Utah, and Wyoming, demonstrate continued investment in safe and reliable gas infrastructure.

Natural gas storage receives comparatively minor direct policy attention, but it remains a relevant component of regional reliability planning. Colorado's SB 23-285 expanded state regulatory authority over intrastate underground natural gas storage, with implementing rulemaking underway. Idaho, Montana, Utah, and Wyoming have few comparable measures focused specifically on conventional natural gas storage. Across the region, storage remains a comparatively limited area of explicit state policy.

Emerging Fuels & Decarbonization Pathways

Emerging fuels and decarbonization technologies are becoming increasingly relevant throughout the Rocky Mountain Region, although states vary considerably in their motivations and deployment strategies. RNG remains a relatively early-stage policy area. Colorado has incorporated RNG directly into compliance pathways under SB 21-264. Utah's RNG Transportation Service Tariff provides a framework for transporting RNG through the utility distribution system to company-owned natural gas vehicle stations, while Wyoming has supported an RNG and carbon storage project through the Cowboy Clean Fuels project. Montana provides tax treatment for qualifying non-fossil and biomass energy property, while Idaho has limited direct state policy activity focused specifically on RNG.

Hydrogen is receiving growing but uneven attention across the region. Colorado's HB 23-1281 established utility regulatory authority and reporting requirements for clean hydrogen projects, while a transportation and storage study and published roadmap address additional planning needs. Utah created a Hydrogen Advisory Council through SB 62, while Montana's HB 170 supports green hydrogen development through tax

treatment, grant eligibility, siting treatment, and related rulemaking authority. Wyoming's Hydrogen Roadmap identifies state priorities and recommended actions. Idaho has taken a more preliminary approach by including hydrogen within the state's broader clean energy framework under HB 96.

Wyoming has one of the region's more developed CCUS frameworks through HB 89, SF 47, Class VI primacy, and long-term liability and stewardship provisions for CO_2 storage. Utah has implemented a carbon storage framework through Title 40, Chapter 11 and HB 452, while Montana's sequestration statutes and Colorado's HB 24-1346 establish additional regulatory pathways for carbon storage development. Idaho's Carbon Sequestration Advisory Committee provides a more limited advisory structure. Across much of the region, policymakers are addressing pore space ownership, liability, permitting, administration, and long-term stewardship issues.

Renewable energy policy varies substantially by state. Colorado incorporates renewable deployment into its broader climate strategy through renewable energy standards, Clean Energy Plans, and distribution system planning. Idaho and Utah provide tax or tariff mechanisms supporting qualifying renewable resources, while Montana repealed its renewable portfolio standard. At the same time, advanced nuclear energy is emerging as a regional theme. Utah's HB 249 establishes institutions and planning mechanisms for nuclear development, Wyoming's HB 131 revises requirements and tax treatment for advanced nuclear facilities, and Montana's HB 273 revises approval requirements relevant to future nuclear projects. Across the region, renewables are increasingly discussed alongside nuclear, hydrogen, transmission expansion, and dispatchable resources rather than as standalone solutions.

Reliability, Resilience & System Planning

Reliability, resilience, and energy security remain key policy drivers across the Rocky Mountain Region. States face common challenges including winter peak demand, wildfire risk, rural infrastructure, long-distance transmission systems, supply disruptions, and growing electricity demand. Colorado's Electric Grid Resilience and Reliability Roadmap, Idaho's State Energy Security Plan, Montana's State Energy Security Plan, Utah's State Strategic Energy Plan and Operation Gigawatt, and Wyoming's reliability-focused policies demonstrate the importance of long-term resilience planning. Wildfire

preparedness is also reflected in Idaho's utility standard of care and Montana's utility wildfire mitigation planning requirements.

States also differ in how they evaluate infrastructure and resource decisions. Colorado stands apart through HB 21-1238, which incorporates the social costs of carbon and methane into gas demand side management evaluations, together with electric-resource, gas utility, and distribution system planning requirements. Utah uses action plan and commission review procedures for significant resource decisions, while Wyoming's HB 200 links resource evaluation to dispatchable low-carbon requirements. Idaho and Montana address evaluation more broadly through energy security planning. Affordability is frequently considered alongside reliability in Rocky Mountain resource planning. Utah emphasizes adequate, reliable, dispatchable, and affordable resources within a diverse portfolio, while Wyoming evaluates the customer cost and reliability consequences of retiring existing dispatchable generation. Colorado approaches the affordability-reliability balance through clean heat cost caps, demand side management valuation, infrastructure alternatives, and customer protections. Despite these differences, states consistently prioritize affordability, reliability, fuel security, and system performance under stress.

Demand growth is also becoming increasingly relevant, particularly in Utah through Operation Gigawatt, which seeks substantial energy production and transmission growth over a ten-year period. Colorado's distribution system and resource planning requirements address peak demand, load forecasts, infrastructure investment, and system risks. Idaho and Montana consider infrastructure interdependencies and emergency preparedness through state energy security planning, while Wyoming's siting and dispatchable-resource policies address large energy facilities and reliable resource development.

Gas-electric coordination remains relatively informal throughout the region. Most states rely on utility planning processes, emergency management activities, energy security plans, and operational coordination rather than formal statutory planning mandates. Idaho's and Montana's state energy security plans address energy system interdependencies and coordinated preparedness, while Utah's resolution encouraging an interstate energy compact reflects interest in broader regional energy coordination. As energy systems evolve, gas-electric coordination may become increasingly relevant.

Workforce Development

Workforce development is becoming an increasingly relevant factor across the Rocky Mountain Region. States that differ significantly on energy policy nonetheless recognize the need for skilled workers capable of supporting hydrogen development, carbon management, advanced nuclear technologies, infrastructure modernization, grid resilience, and emerging energy systems. Workforce strategies generally reflect each state's broader energy priorities.

Transition and retention policies are most developed in Colorado, where the Office of Just Transition supports workers and communities affected by energy sector change and HB 23-1074 required a study of workforce transitions for oil and gas workers and workers affected by automation. Utah's Custom Fit Training program supports customized training for incumbent employees, while Wyoming's coal facility sale requirements seek to preserve opportunities for continued operation before retirement.

Other initiatives address emerging technical skills through analysis, education, and employer training. Colorado's Climate Workforce Analysis and Plan assesses the current climate workforce, forecasts future employment demand, and recommends actions to address anticipated gaps and challenges. Utah's nuclear development framework and Nuclear Energy Consortium support coordination relevant to nuclear workforce needs. Idaho's Industry-Driven Skills Training Fund supports approved employer training tied to advanced manufacturing technologies, including nuclear energy, while Wyoming's Hydrogen Roadmap includes workforce and capacity considerations.

States are also using grants, apprenticeships, education-industry partnerships, and workforce planning to address capacity constraints. Colorado's workforce development grant program and Climate Workforce Analysis and Plan address training capacity and employment demand. Utah's Talent Ready Utah and Apprenticeship Utah expand career and apprenticeship pathways, the Wyoming Innovation Partnership supports higher education and workforce projects, and Idaho's Industry-Driven Skills Training Fund supports employer-led training. Across the region, workforce availability is increasingly recognized as a factor influencing implementation of future energy projects and infrastructure investments.

West Coast Policy Profile



Figure 6: West Coast regional policy profile snapshot

Trends & Insights

- West Coast natural gas policy reflects differing state priorities and approaches to the future role of natural gas, with states balancing emissions reduction goals, affordability, reliability, infrastructure needs, and continued natural gas use across end-use sectors.
- Reliability and affordability are central consideration throughout the region, influencing infrastructure planning, storage deployment, gas-electric coordination, resource adequacy decisions, and the costs of maintaining or transitioning energy systems.
- Renewable natural gas is one of the more developed emerging fuel pathways in the region but is generally viewed as a targeted decarbonization strategy rather than a large-scale replacement for conventional natural gas.

- Hydrogen development is expanding through studies, pilot projects, utility authority, and planning initiatives, though most states remain in a preparation and evaluation phase.
- Existing gas infrastructure is increasingly being evaluated in relation to long-term demand, safety, reliability, renewable fuels, hydrogen, carbon management, and broader energy system planning.
- Workforce development, wildfire resilience, energy storage, and gas-electric coordination are becoming increasingly relevant determinants of future energy system deployment and reliability across the region.

Natural Gas Infrastructure & Industry

The West Coast contains some of the country's more developed state frameworks for reducing emissions associated with natural gas, although states differ significantly in how they approach that transition. California, Oregon, and Washington have adopted decarbonization frameworks that increasingly seek to reduce long-term dependence on fossil natural gas through electrification, clean electricity mandates, carbon pricing, building codes, and utility planning reforms. Oregon's Climate Protection Program, HB 2021, and SB 844 natural gas utility greenhouse gas reduction framework, Washington's Clean Energy Transformation Act (CETA) and Climate Commitment Act, and California's utility planning, line extension, building efficiency, and decarbonization proceedings illustrate this transition-oriented pathway. These policies generally do not eliminate natural gas in the near term but increasingly require consideration of emissions, customer impacts, long-term system utilization, and alternatives to conventional infrastructure investment.

Nevada and Arizona take a more reliability-focused approach. Nevada maintains climate goals but continues to support a diversified energy portfolio through SB 281, which established a long-term gas resource planning process, and through broader resource planning. Arizona similarly emphasizes energy diversity, affordability, dispatchable generation, and infrastructure adequacy through integrated resource planning, its Renewable Energy Standard and Tariff, a gas system planning proceeding, and Executive Order 2025-13. As a result, the region increasingly reflects two broad pathways: managed transition in the coastal states and greater emphasis on reliability, affordability, infrastructure development, and fuel diversity in the Southwest.

Despite differing views on future gas demand, all five states continue to support infrastructure modernization, leak reduction, pipeline integrity, and safety programs. California's SB 1371 framework and Gas Pipeline Safety Enhancement Program, Washington's pipeline safety and replacement requirements, Oregon's pipeline safety rules and cost recovery provisions, and Nevada's SB 321 modernization framework provide approaches to safety investments and recovery of approved infrastructure costs. Across the region, modernization continues alongside ongoing discussions about future system utilization and long-term demand trends.

Natural gas storage remains tightly linked to reliability planning. Oregon's Mist Storage Facility and North Mist expansion and Washington's Jackson Prairie Storage Field continue to support storage operations, electric generation service, and peak demand reliability. California treats storage as a reliability asset and continues to evaluate Aliso Canyon through reliability and phase-out planning, while Arizona's current gas proceeding examines system capacity, storage, demand growth, and related infrastructure needs. Increasingly, storage is being evaluated not simply as a gas system asset, but as a resource supporting electric reliability, emergency preparedness, and system flexibility.

Natural gas remains relevant to West Coast reliability and infrastructure planning through firm generation, underground storage, peak day supply, pipeline capacity, and gas-electric coordination. Arizona is examining whether additional gas infrastructure and storage are needed for load growth and resource adequacy, while California, Oregon, and Washington retain storage and safety frameworks that support continued system reliability. At the same time, California's transition proceedings, and to a lesser extent Washington's integrated planning requirements, are evaluating how future investment decisions may affect infrastructure utilization and long-term customer costs. As a result, the emerging policy direction is not uniform expansion or immediate retirement, but more coordinated evaluation of infrastructure need, alternatives, timing, cost allocation, and reliability value.

Emerging Fuels & Decarbonization Pathways

RNG is one of the more developed emerging fuel pathways in the region. California's SB 1383, AB 1900, AB 3187, and SB 1440 established a biomethane procurement and

interconnection framework. Oregon's SB 98 created utility RNG program authority, while Washington's HB 2580, HB 1257, and RCW 80.28.390 authorized utility RNG procurement and voluntary customer offerings. Nevada's SB 154 established a utility RNG program and related planning and cost recovery requirements. Across the region, RNG is primarily being used as a targeted pathway for reducing emissions associated with existing fuel and waste systems.

Hydrogen policy activity is widespread but remains largely in the planning, pilot, and infrastructure readiness phase. California's SB 1369 and SB 1075 support utility proposals and hydrogen evaluation in state energy planning. Washington has authorized renewable hydrogen activities for public utility districts, while Oregon has completed a renewable hydrogen study and authorizes utility investment in hydrogen resources. Nevada completed a legislative hydrogen study, and Arizona's Hydrogen Study Committee examined hydrogen policy and economic opportunities. Although deployment remains limited, hydrogen remains an area of regional policy interest.

CCUS is developing more selectively than in many other regions. California's SB 905 established a CCUS governance framework while prohibiting use of captured CO_2 for enhanced oil recovery through SB 1314. Arizona has established regulatory readiness through Class VI UIC primacy, while Washington maintains statutes for geologic storage and CO_2 pipelines. Nevada's SB 254 authorizes state regulation of carbon capture, transport, and storage, while Oregon has comparatively limited state CCUS policy activity. Across the West Coast, CCUS remains less broadly developed than renewable energy or RNG policy.

Renewable energy remains a defining feature of regional energy policy. California's SB 100, Oregon's HB 2021, Washington's Clean Energy Transformation Act (CETA), and Nevada's SB 358 establish clean electricity or renewable energy requirements. Nevada's Greenlink transmission initiative further supports renewable resource access and system reliability. Arizona maintains a Renewable Energy Standard and Tariff alongside integrated resource planning requirements. Increasingly, renewables are being integrated with energy storage, transmission expansion, industrial decarbonization, hydrogen production, and resilience strategies rather than being treated as standalone compliance resources.

Reliability, Resilience & System Planning

Reliability and resilience have become central considerations for energy policy across the West Coast. Wildfires, extreme heat, seismic risk, changing demand, electrification, and evolving resource mixes have elevated concerns regarding resource adequacy, infrastructure performance, and emergency preparedness. California's AB 1054, utility wildfire mitigation requirements, microgrid framework, and reliability proceedings illustrate how reliability planning increasingly intersects with decarbonization. Oregon's SB 762, Resilience Plan, and Energy Security Plan similarly address wildfire, seismic, community, and energy system risks. Washington, Nevada, and Arizona have adopted comparable approaches that emphasize infrastructure resilience, emergency preparedness, utility planning, and resource adequacy.

States are increasingly evaluating infrastructure investments through broader planning frameworks that incorporate reliability, climate risk, electrification, gas demand uncertainty, affordability, and system resilience. California utilizes hazard mitigation planning, reliability proceedings, and utility risk evaluation processes. Oregon and Washington integrate resilience considerations into utility planning, emergency preparedness, and resource adequacy programs, while Nevada and Arizona evaluate system needs through integrated resource planning, energy security planning, and related reviews. This evolution reflects growing recognition that future reliability challenges extend beyond traditional reserve margins and capacity requirements.

Demand growth and peak system stress are becoming increasingly relevant planning drivers. California's response to the August 2020 heat wave, Nevada's integrated resource planning, Arizona's gas system planning proceeding and Executive Order 2025-13, and ongoing resource planning in Oregon and Washington highlight the need for flexible resources, energy storage, demand response, transmission expansion, and dispatchable generation. States increasingly recognize that future reliability will depend on successfully managing interactions among gas infrastructure, electric systems, storage, renewables, and emerging technologies.

Gas-electric coordination has become particularly relevant as electricity systems rely on gas-fired generation during peak periods while also pursuing long-term decarbonization objectives. California addresses interactions among gas infrastructure,

electricity planning, storage, and reliability through utility proceedings and statutory planning requirements. Oregon's North Mist expansion connects gas storage with electric generation service, while Washington's HB 1589 requires coordinated gas and electric planning by a covered large combination utility. Arizona addresses coordination through integrated resource planning, while explicit state coordination activity remains more limited in Nevada. Across the region, gas-electric coordination is increasingly recognized as relevant to maintaining reliable service through future energy transitions.

West Coast reliability policy increasingly evaluates affordability alongside resource adequacy, extreme weather exposure, storage, transmission, demand growth, and gas-electric interdependence. Gas infrastructure may reduce supply and peak day risks, while efficiency, demand response, clean generation, transmission, storage, and microgrids may provide alternative or complementary reliability value. Regional policy generally does not presume that any one reliability pathway lowers customer costs; instead, planning frameworks increasingly require comparison of lifecycle cost, risk, rate impacts, equity, and system performance.

Workforce Development

Workforce development is emerging as an implementation challenge throughout the West Coast. States increasingly recognize that achieving goals related to electrification, renewable energy deployment, wildfire resilience, hydrogen, RNG, CCUS, grid modernization, and infrastructure maintenance will require investments in workforce training and development. California, Oregon, and Washington have integrated workforce policy into climate and clean energy strategies, while Nevada and Arizona generally emphasize broader energy workforce development and technical training programs.

Transition and retention policies are most visible in California and Washington. California's gas system planning proceeding examines an affordable and equitable gas transition, while Washington's State Energy Strategy and Clean Energy Technology Workforce Advisory Committee address workforce displacement, assistance for affected workers and businesses, clean energy job creation, training needs, and skills gaps.

Emerging skills initiatives include California's SB 740 and SB 1075, Oregon's HB 3409, Washington's workforce advisory committee, Nevada's completed hydrogen study, and

the Arizona Energy Promise Taskforce. These measures address skilled workforce requirements, workforce consultation, clean energy workforce needs, skills gaps, training strategies, and future energy workforce needs.

Capacity constraints are being addressed through training partnerships, labor standards, project requirements, appropriations, and workforce planning. California's High Road Training Partnerships and AB 680, Oregon's HB 2021 and ORS 757.306, Nevada's SB 448 and renewable energy tax abatement requirements, Washington's advisory structure, and Arizona's energy taskforce provide examples. Across the region, workforce availability is increasingly recognized as a key factor that could accelerate or constrain deployment of future energy systems.

National Policy & Regulatory Landscape Assessment

Across the five PADD regions, policy and regulatory frameworks are shaping multiple pathways for future energy system development. Regional approaches include managed transition strategies, continued support for natural gas, fuel choice, and dispatchable resources, and the use of emerging fuels, carbon management, storage, and workforce development to adapt existing infrastructure to evolving system needs. These variations reflect differences in resource availability, policy priorities, regulatory structures, and regional energy demand profiles.

Comparison across regions identifies several consistent patterns as well as areas of divergence in policy design and implementation:

1. **Regional differences in natural gas policy reflect differences in existing infrastructure, resource availability, demand profiles, and policy priorities.** Some regions are evaluating or reducing long-term natural gas demand, while others continue to support natural gas development and infrastructure investment. Across all regions, natural gas infrastructure remains part of energy system planning, but its role in reliability, storage, peak demand, electric generation, and emerging fuel strategies varies according to regional system characteristics and future energy objectives.
2. **Reliability represents one of the most consistent areas of cross-regional alignment**, **with affordability increasingly considered alongside reliability in**

energy system planning. All regions are addressing challenges associated with extreme weather, seasonal demand variability, industrial load growth, electrification, infrastructure constraints, and resource adequacy. These considerations are increasingly evaluated together with customer and system costs, including the costs of maintaining existing resources, developing new infrastructure, preserving energy options, and transitioning toward alternative pathways.

3. **Emerging fuels are frequently incorporated as mechanisms to adapt or extend the use of existing infrastructure.** This is most evident in the Gulf Coast, Midwest, and Rocky Mountain regions, where hydrogen, CCUS, and RNG are often linked to existing infrastructure, industrial assets, or geologic resources, while advanced nuclear is receiving renewed policy attention. Similar approaches are present in other regions, where emerging fuels are integrated alongside broader system planning and transition strategies.
4. **Hydrogen is present across all regions, though its role varies based on regional context.** In some regions, hydrogen is associated with industrial development, infrastructure utilization, and carbon management, while in others it is more closely linked to decarbonization strategies, planning, infrastructure readiness, and potential decarbonization applications.
5. **CCUS activity is concentrated in specific regions.** The Gulf Coast, Rocky Mountain, and Midwest regions include more developed legal and regulatory frameworks related to geologic storage, permitting, and CO_2 transportation. In other regions, CCUS activity is more limited or targeted to specific industrial or regulatory applications.
6. **Workforce development is emerging as an implementation consideration across all regions**. Workforce needs are associated with infrastructure investment, emerging technologies, and system operations. These needs vary by region and include transition and retention, emerging skills, and implementation capacity.

The cross-regional patterns described above are further synthesized in Figures 7 through 9. Figure 7 presents a static view of the interactive matrix available in the RAISE National Case Study Policy Database. The database allows users to modify the

underlying assumptions and explore how those changes affect the relative distribution of policy and regulatory activity across topics and regions. Figure 8 compares the five regions based on the degree to which their policy objectives and general approaches align across the study's 15 policy subtopics. Its qualitative ratings reflect similarities and differences in policy direction and approach; they do not represent the number of policy records, the number of states represented, or the overall level of policy activity.

Figure 9 provides a focused assessment of the strength and diversity of policy support for the four Emerging Fuels & Decarbonization Pathways subtopics across the five regions. The qualitative ratings consider the range, directness, and complementarity of policy mechanisms—including mandates, regulatory frameworks, incentives, infrastructure provisions, utility programs, planning activities, and implementation support—rather than the number of policies identified in each region. Together, the three matrices illustrate where policy activity is concentrated, where regional objectives and approaches converge or diverge, and how the nature of support for emerging fuels and decarbonization pathways varies across regions. Additional information on Figures 8 and 9 can be found in Appendix F.

Regional Share by Subtopic					
Subtopic	**East Coast**	**Midwest**	**Gulf Coast**	**Rocky Mountain**	**West Coast**
Natural Gas Outlook	33.5%	22.8%	13.3%	11.9%	11.4%
Infrastructure Maintenance & Modernization	3.2%	3.7%	7.5%	5.6%	8.7%
Natural Gas Storage	0.9%	3.0%	5.8%	0.5%	2.9%
RNG	2.9%	3.4%	1.2%	2.0%	6.9%
Hydrogen	4.0%	4.4%	8.2%	7.5%	5.1%
CCUS	1.5%	8.8%	8.5%	7.7%	4.2%
Renewables	12.2%	14.1%	7.7%	17.1%	8.4%
Grid Reliability & Resilience	5.2%	6.7%	8.6%	9.5%	11.3%
Evaluation & Valuation	10.8%	12.2%	9.5%	9.4%	15.3%
Demand Surge Reality	2.2%	6.2%	6.0%	5.1%	6.5%
Infrastructure Design & Storage	7.8%	5.7%	9.3%	8.9%	7.1%
Gas-Electric Coordination	1.9%	0.3%	3.9%	1.3%	2.7%
Transition & Retention	3.0%	2.3%	1.2%	2.3%	1.0%
Emerging Skills Gap	6.4%	2.7%	5.7%	5.9%	3.7%
Capacity Constraints	4.7%	3.5%	3.7%	5.3%	4.7%

Figure 7: Relative Regional Policy Activity Matrix: Evaluates policy emphasis and regulatory activity across regions. Each policy receives an instrument-based weight to show how attributed policy activity is distributed within each region; default assumptions are used in this figure.

Cross-Regional Policy Alignment Matrix:

Compares the extent to which regions are aligned in their policy objectives and general approaches across the study's policy subtopics. Higher alignment indicates similar policy goals and strategies, while lower alignment indicates materially different policy directions, priorities, or underlying assumptions. Ratings do not reflect the number of policy records or overall level of policy activity.

Rating Descriptions	
High	Regions are consistently aligned in policy objectives and general approach, with differences primarily in implementation details.
Moderate-High	Regions share similar objectives and broadly comparable approaches, with meaningful differences in rationale or implementation.
Moderate	Regions recognize a similar policy need but use materially different objectives, strategies, or policy mechanisms.
Low-Moderate	Some common objectives exist, but regional approaches are substantially different or only partly comparable.
Low	Regions pursue fundamentally different policy directions or rely on conflicting underlying assumptions.

Topic and Subtopic		Alignment	Description
Natural Gas Industry & Infrastructure	Natural Gas Outlook	Low	Regional approaches differ substantially, ranging from managed gas transition and electrification to fuel-choice preservation, infrastructure expansion, and continued natural-gas-centered development.
	Infrastructure Maintenance & Modernization	High	Regions consistently prioritize pipeline safety, leak reduction, system integrity, replacement, and modernization, although cost recovery and investment review differ.
	Natural Gas Storage	Moderate-High	Regions generally emphasize safe operation, regulatory oversight, peak-demand support, and reliability, while differing in storage's strategic role and relationship to electric generation.
Emerging Fuels & Decarbonization Pathways	RNG	Moderate	Regions generally treat RNG as a lower-carbon fuel or gas-system option, but use different combinations of utility programs, interconnection rules, clean-fuel standards, incentives, and voluntary offerings.
	Hydrogen	Moderate	Regions broadly view hydrogen as an emerging industrial, transportation, storage, or decarbonization pathway, but differ in preferred production methods, end uses, infrastructure roles, and policy mechanisms.
	CCUS	Moderate	Regions generally establish oversight for carbon capture, transport, and geologic storage, but differ materially in policy purpose, incentives, project restrictions, land-use treatment, and enhanced-oil-recovery provisions.
	Renewables	Low-Moderate	Regional approaches range from binding renewable or clean-energy transitions to voluntary goals, targeted incentives, technology-neutral portfolios, and policies preserving conventional generation.
Reliability, Resilience, & System Planning	Grid Reliability & Resilience	High	Regions consistently prioritize reliable service, resource adequacy, emergency preparedness, and infrastructure resilience, although the principal risks and preferred resources differ.
	Evaluation & Valuation	Moderate	Regions use planning and regulatory review to evaluate cost, reliability, demand, and system needs, but differ materially in how they value emissions, affordability, resilience, fuel security, and alternatives.
	Demand Surge Reality	Moderate-High	Regions generally address projected demand, peak conditions, resource adequacy, and system stress through forecasting and planning, while differing in demand drivers and preferred responses.
	Infrastructure Design & Storage	Moderate	Regions plan for infrastructure capacity and system flexibility, but emphasize different combinations of transmission, distribution, generation, gas storage, batteries, hydrogen, carbon storage, and distributed resources.
	Gas-Electric Coordination	Moderate	Regions recognize gas-electric interdependence and cross-system reliability needs, but use different combinations of integrated planning, emergency coordination, storage policy, and supply-chain oversight.
Workforce Development	Transition & Retention	Moderate	Transition policies generally seek to retain, retrain, or assist affected workers and communities, but differ in whether support responds to closures, decarbonization, technology change, or broader economic shifts.
	Emerging Skills Gap	Moderate-High	Regions broadly support training for new energy technologies and infrastructure, while differing mainly in technology focus, institutional partners, and program delivery.
	Capacity Constraints	Moderate-High	Regions use apprenticeships, education partnerships, employer training, grants, scholarships, and career pathways to expand workforce capacity, but differ in sector focus and connection to planned energy deployment.

Figure 8: Cross-Regional Alignment Matrix: Compares the extent to which regions are aligned in policy objectives and approaches

Relative Policy Support for Emerging Fuels & Decarbonization Pathways Matrix:

Compares the diversity and directness of policy support for the four Emerging Fuels & Decarbonization Pathways across the five regions. Ratings are qualitative and including mandates, regulatory frameworks, incentives, infrastructure provisions, planning, and implementation support.

Rating Descriptions	
High	Comprehensive and direct support through multiple complementary mechanisms, such as mandates, regulatory frameworks, incentives, infrastructure provisions, programs, and implementation planning.
Moderate -High	Strong support through several substantive mechanisms, with some gaps in scope, integration, implementation, or consistency within the region.
Moderate	Established support is present through multiple mechanisms, but the approaches are targeted, uneven, or primarily enabling rather than comprehensive.
Low-Moderate	Support is limited to a small range of targeted incentives, programs, studies, definitions, or early enabling frameworks.
Low	Little direct support is evident. Policies are largely exploratory, indirect, restrictive, or not supported by an established implementation mechanism.

Topic and Subtopic		East Coast	Midwest	Gulf Coast	Rocky Mountain	West Coast
Emerging Fuels & Decarbonization Pathways	**RNG**	Moderate	Moderate-High	Low-Moderate	Low-Moderate	**High**
	Hydrogen	Moderate-High	**High**	**High**	Moderate-High	Moderate-High
	CCUS	Moderate-High	**High**	**High**	**High**	Moderate-High
	Renewables	**High**	Moderate-High	Moderate	Moderate	**High**

Figure 9: Relative Policy Support for Emerging Fuels & Decarbonization Pathways: Compares the diversity and directness of policy support for emerging fuels and decarbonization pathways across regions

Natural Gas Infrastructure and Industry

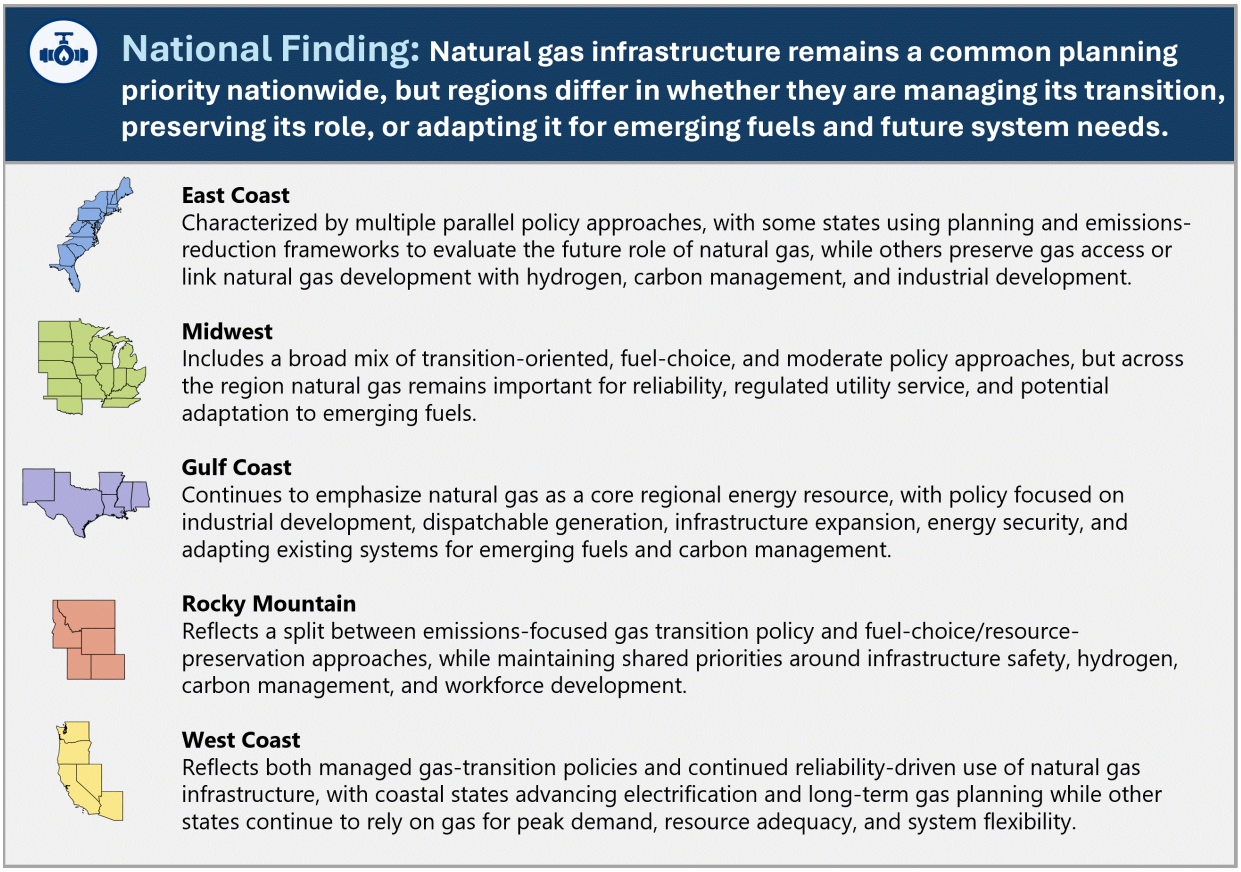


Figure 10: National Finding: Natural gas infrastructure remains a common planning priority nationwide, but regions differ in whether they are managing its transition, preserving its role, or adapting it for emerging fuels and future system needs

Across regions, the future role of natural gas varies more than any other policy area (Figure 10). The **West Coast** includes some of the most developed policy frameworks associated with managed gas transition, particularly in coastal states where electrification, clean electricity, building decarbonization, and long-term gas planning are incorporated into policy and regulatory processes.

At the same time, parts of the region continue to rely on natural gas for resource adequacy, peak demand management, and system flexibility. As a result, the region reflects both transition-oriented and reliability-driven applications of gas infrastructure.

The **East Coast** similarly reflects multiple approaches. Some states are using utility planning requirements, electrification policy, and emissions reduction frameworks to

evaluate the long-term role of natural gas. Other states maintain policies that preserve access to natural gas or link gas infrastructure with hydrogen, carbon management, and industrial development. This results in different policy approaches to natural gas being implemented in parallel.

The **Midwest** includes a wide range of policy approaches, including transition-oriented frameworks, fuel-choice policies, and more moderate approaches that incorporate clean energy goals within existing regulatory structures. Across the region, natural gas is addressed as a reliability resource, a regulated utility service, and in some cases as a platform for emerging fuels and infrastructure adaptation.

The **Gulf Coast** continues to emphasize natural gas as a central component of regional energy systems. Policy activity in the region is primarily associated with industrial development, dispatchable generation, infrastructure modernization, reliability, and energy security, while also incorporating emerging fuels and carbon management into long-term planning. The regional policy landscape reflects an emphasis on maintaining and adapting existing infrastructure rather than reducing its role.

The **Rocky Mountain** region includes both transition-oriented and resource-preservation approaches. One state has adopted a policy framework focused on reducing emissions associated with natural gas use, while others emphasize fuel choice, dispatchable resources, and infrastructure continuity. At the regional level, this results in differing policy directions alongside shared activity in areas such as infrastructure safety, hydrogen, carbon management, and workforce development.

Infrastructure modernization is a consistent area of activity across all regions. Policies and programs across the regions support pipeline safety, integrity management, infrastructure improvement or replacement, and system reliability. The primary regional variation relates to how these investments are evaluated. In some regions, modernization is linked to continued infrastructure utilization and reliability, while in others it is considered alongside factors such as emissions reduction, affordability, and long-term demand.

Natural gas storage is also addressed across regions, though the level of policy focus differs. The **Gulf Coast** and **East Coast** include direct treatment of storage and subsurface governance, including conventional natural gas storage and, separately,

emerging hydrogen or carbon management applications. The **West Coast** similarly incorporates storage into broader reliability and system flexibility considerations. In the **Midwest**, conventional natural gas storage is addressed primarily through operational, safety, and regulatory frameworks. In the **Rocky Mountain** region, storage receives comparatively limited direct state policy attention.

Emerging Fuels and Decarbonization Pathways

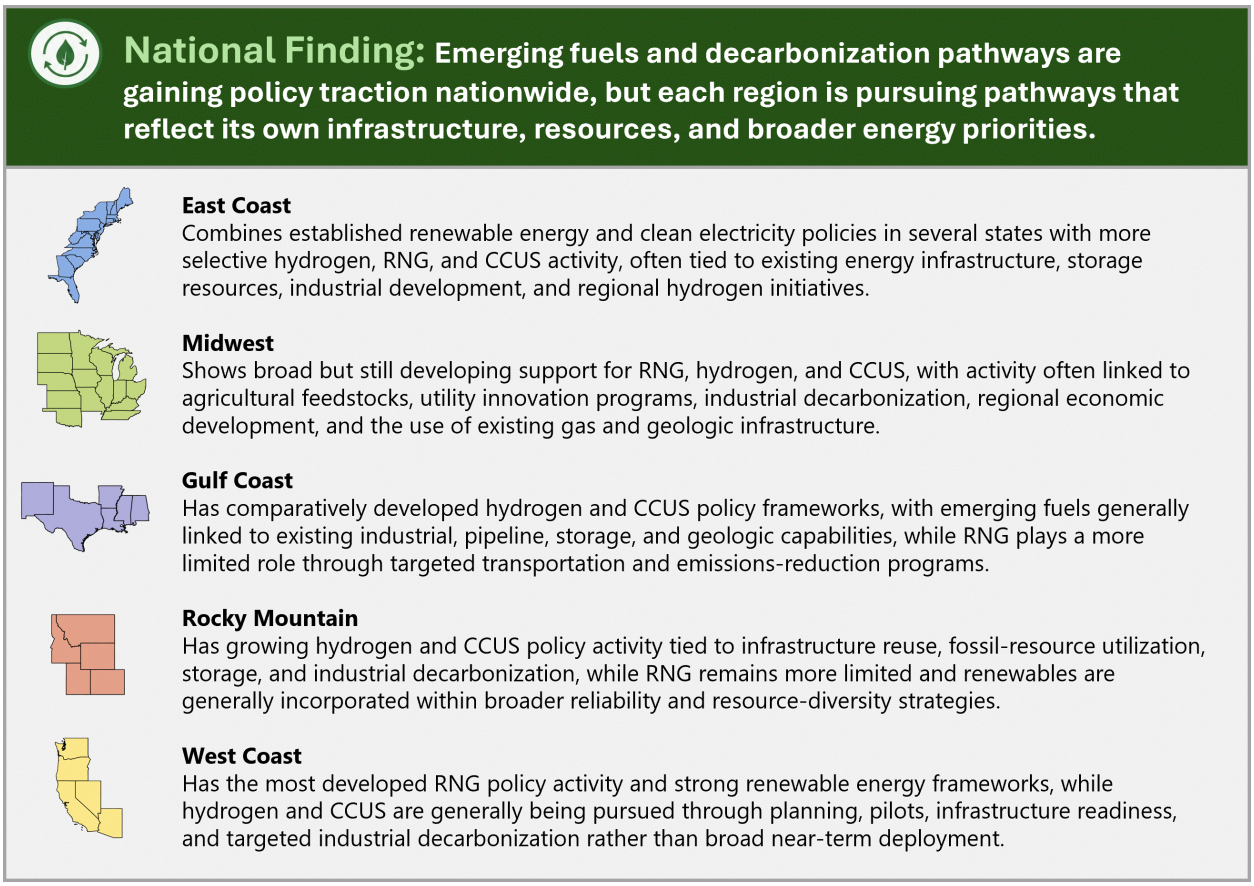


Figure 11: National Finding: Emerging fuels are gaining policy traction nationwide, but each region is pursuing pathways that reflect its own infrastructure, resources, and decarbonization priorities

Emerging fuels and decarbonization pathways are present in each region, though their role and level of development vary (Figure 11). RNG shows comparatively developed policy activity on the **West Coast**, where several states have established procurement mechanisms, utility programs, interconnection standards, and voluntary offerings. In this region, RNG is primarily used to support methane reduction, low-carbon fuel development, and targeted decarbonization of existing gas systems.

In the **Midwest**, RNG activity is widely distributed but generally relies on utility programs, innovation frameworks, infrastructure rules, financing, and voluntary participation. Policy activity includes pilot programs, utility innovation frameworks, and voluntary procurement mechanisms, often linked to agricultural feedstocks and existing gas systems. These initiatives indicate ongoing development, though RNG is not yet a primary regional supply strategy.

The **Gulf Coast** and **Rocky Mountain** regions include more limited RNG policy activity relative to other emerging fuels. In both regions, RNG is typically incorporated through targeted programs, pilot projects, or transportation fuel applications, with less emphasis on large-scale deployment.

Hydrogen is present across all five regions and represents one of the most consistently identified policy areas, though regional applications differ. In the **Gulf Coast** and **Rocky Mountain** regions, hydrogen is commonly linked to industrial activity, existing infrastructure, storage resources, and carbon management. In the **Midwest**, hydrogen is incorporated across both transition-oriented and fuel choice policy environments through planning, incentives, infrastructure requirements, and broader economic development frameworks. On the **West Coast**, hydrogen activity is primarily associated with studies, pilot projects, and infrastructure readiness, with limited large-scale deployment to date.

CCUS shows more concentrated regional development. The **Gulf Coast**, **Rocky Mountain**, and **Midwest** regions include more developed policy and regulatory frameworks related to geologic storage, permitting, liability, and CO_2 transport. In these regions, CCUS is associated with industrial activity, resource development, and emissions reduction.

The **West Coast** includes a more limited but defined CCUS approach, where policies establish defined governance and regulatory pathways, with activity more selective than in several other regions. The **East Coast** shows more selective CCUS activity, particularly in Pennsylvania and West Virginia, with additional targeted activity elsewhere.

Renewable energy policy is extensive on the **West Coast** and in some **Midwest** and **East Coast** states where clean electricity frameworks are established. Other regions incorporate renewables within broader resource portfolios that also include natural gas,

nuclear energy, hydrogen, carbon management, and other dispatchable resources. Across regions, renewable energy is increasingly evaluated alongside system reliability, infrastructure needs, and resource diversity rather than as a standalone policy objective.

Reliability, Resilience, and System Planning

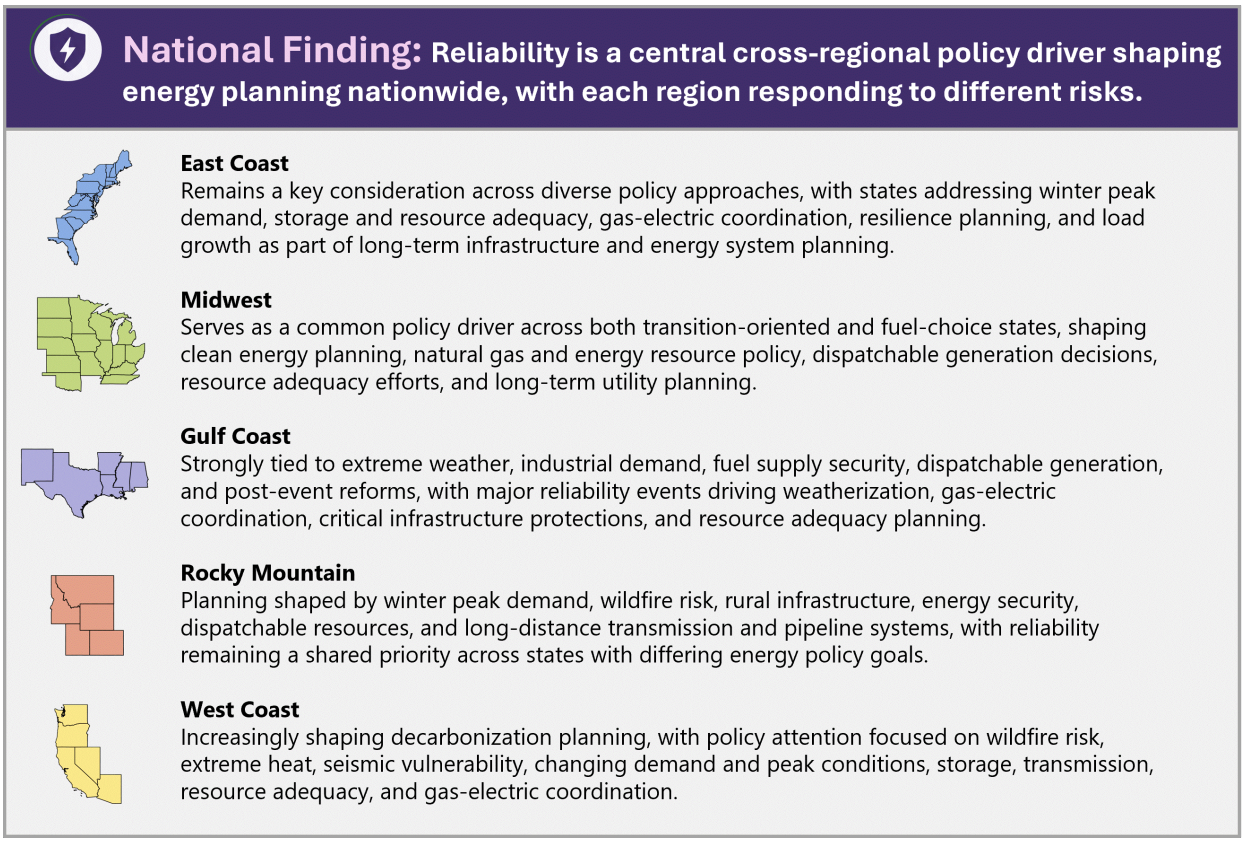


Figure 12: National Finding: Reliability is a central cross-regional policy driver shaping energy planning nationwide, with each region responding to different risks

Reliability is a central cross-regional policy driver (Figure 12). Reliability, resilience, resource adequacy, peak demand, infrastructure adequacy, and emergency preparedness are central policy considerations across the regions. Across regions, reliability is reflected in legislation, regulatory proceedings, infrastructure investment, resource planning, and evaluation of emerging technologies.

In the **Gulf Coast**, reliability policy is commonly associated with extreme weather exposure, industrial demand, fuel supply security, dispatchable generation, and post-event reforms. Recent policy activity illustrates how major reliability events can influence

gas-electric coordination, weatherization requirements, critical infrastructure protections, and resource adequacy planning.

In the **Midwest**, reliability is incorporated across both transition-oriented and fuel-choice policy environments. Transition-oriented states integrate reliability considerations into clean energy and gas planning frameworks, while fuel-choice states reference reliability in policies related to natural gas access, dispatchable generation, and resource adequacy. This results in reliability serving as a common policy consideration across otherwise different energy strategies.

In the **Rocky Mountain** region, reliability planning is associated with winter peak demand, wildfire risk, rural infrastructure, energy security, dispatchable resources, and long-distance transmission and pipeline systems. Across the region, reliability considerations are present in states with differing approaches to natural gas and emissions policy.

In the **West Coast**, reliability considerations increasingly influence decarbonization planning. Policy activity in the region addresses wildfire risk, extreme heat, seismic vulnerability, winter gas demand, storage, transmission, and resource adequacy. These factors are incorporated into planning processes that evaluate system performance under stress conditions.

The **East Coast** similarly reflects reliability as a cross-cutting policy consideration, with attention to extreme weather, resource adequacy, fuel security, gas-electric coordination, resilience planning, and load growth. Across the region, reliability remains a key factor in policy and infrastructure planning, including in states evaluating long-term changes to natural gas systems.

Evaluation and valuation frameworks continue to evolve but differ across regions. The **West Coast** and **Gulf Coast** include structured approaches to reliability and risk evaluation, while the **Midwest** and **Rocky Mountain** regions rely more heavily on integrated resource planning, reliability reporting, energy security planning, and resource adequacy proceedings. Across all regions, planning frameworks increasingly consider risks associated with extreme weather, storage availability, gas-electric interdependence, infrastructure performance, and demand growth.

Gas-electric coordination is identified across all regions but is implemented through different mechanisms. The **Gulf Coast** and **West Coast** include more formal or operational coordination approaches, often linked to extreme weather events, gas-fired generation, and resource adequacy concerns. The **Midwest** and **Rocky Mountain** regions generally address coordination through utility planning and energy security processes, while the **East Coast** incorporates coordination into planning for winter demand, storage, and system reliability.

Workforce Development



Figure 13: National Finding: Workforce development is emerging as a shared national priority, with each region building the skills pipeline around its own energy assets, transition goals, and future infrastructure needs

Workforce development is identified across all regions as a relevant factor in energy system implementation (Figure 13). Workforce policies connect workforce needs to pipeline modernization, hydrogen, RNG, CCUS, advanced nuclear, electrification,

storage, transmission, grid modernization, resilience investments, and broader system planning activities.

Across regions, workforce development is increasingly treated not as a standalone labor issue, but as a requirement for planning, constructing, operating, maintaining, and regulating future energy infrastructure. Regional approaches vary considerably. The **West Coast** includes integrated workforce frameworks, with clean energy workforce programs, apprenticeship and labor requirements, training partnerships, workforce planning, and climate-linked initiatives. California, Oregon, and Washington particularly integrate workforce requirements directly into climate and clean energy policy.

The **East Coast** links workforce development to a broad mix of transition and infrastructure priorities, including building electrification, offshore wind, hydrogen, CCUS, advanced nuclear, and utility modernization. Approaches include transition provisions, technology-specific education, grants, apprenticeships, internships, and workforce-pipeline programs. In this region, workforce policy reflects the diversity of technologies and infrastructure pathways being pursued.

The **Midwest** shows a more mixed workforce landscape. Some states emphasize worker-transition and community-transition programs, while others rely on technical education, apprenticeships, community colleges, and emerging technology curricula. Workforce activity is commonly tied to hydrogen, CCUS, RNG, advanced nuclear, renewable energy, infrastructure modernization, and broader energy sector implementation needs. This reflects a region where workforce preparation is relevant across both transition-oriented and fuel-choice policy environments.

The **Gulf Coast** uses transition programs, technical training, apprenticeships, workforce readiness studies, and broader capacity initiatives related to hydrogen, advanced nuclear, energy efficiency, infrastructure modernization, and other technical fields. Workforce activity is often tied to community college partnerships, industrial training programs, infrastructure workforce initiatives, energy-related credentials, and economic development strategies that build on the region’s existing energy sector strengths.

The **Rocky Mountain** reflects a range of workforce approaches aligned with state-level energy strategies. Programs include transition assistance, climate workforce analysis, employer training, nuclear workforce coordination, apprenticeships, higher education

partnerships, grants, and industry-driven skills funds. This variation illustrates how workforce policy is shaped by each state's mix of legacy energy resources, emerging technology priorities, and long-term infrastructure plans.

Implications & Opportunities

Current policy activity suggests that future energy system development will be shaped less by a single national policy pathway and more by the interaction of reliability objectives, infrastructure modernization efforts, emerging energy technologies, evolving governance frameworks, and increasing interdependence among energy systems. While regional approaches continue to differ, several recurring themes emerge that may influence future utility planning, infrastructure investment, system operations, and regulatory development across the U.S.

The observations presented below are not policy recommendations. Rather, they highlight areas where recurring policy activity, institutional development, and infrastructure planning trends suggest potential implications and opportunities for utilities, operators, regulators, and other stakeholders as energy systems continue to evolve. The findings indicate that future energy system development will likely be influenced not only by technology choices, but also by the ability to integrate reliability objectives, infrastructure investments, workforce capabilities, regulatory frameworks, storage resources, and emerging energy systems into cohesive long-term planning strategies.

Infrastructure Modernization and Investment

One recurring area of national alignment identified across the five regions is continued support for infrastructure modernization. Despite differences in energy policy priorities, regions consistently identify investments related to system integrity, safety, resilience, reliability, leak reduction, asset management, and long-term infrastructure performance. Existing infrastructure is also being evaluated in relation to hydrogen, RNG, carbon management, storage, and broader energy system needs.

At the same time, some policymakers and regulators are expanding infrastructure evaluation frameworks beyond traditional cost recovery considerations. Infrastructure investments may be assessed using broader criteria that may include reliability,

resilience, optionality, safety, emissions reduction, and long-term system flexibility. This evolution reflects growing recognition that future infrastructure value may derive from an asset's ability to support multiple functions under changing system conditions and policy environments.

These developments suggest that infrastructure adaptation may become increasingly relevant alongside infrastructure expansion in shaping future energy systems. Across multiple regions, policy discussions increasingly focus on modernization, optimization, and utilization of existing assets rather than exclusively on replacement or new construction. Infrastructure planning may increasingly focus on identifying investments that address current reliability and resilience needs while preserving flexibility for future energy system requirements. Opportunities may emerge to evaluate infrastructure not only based on current utilization, but also on the range of future functions it may support, including emerging fuels, storage applications, carbon management systems, and integrated energy networks.

Reliability Planning, Resource Adequacy, and Demand Growth

Reliability, resilience, affordability, and energy security represent a major area of policy convergence identified across the national analysis. Regardless of policy orientation or resource mix, every region identifies reliability as a consideration in energy decision-making. Reliability increasingly serves as a common organizing principle across infrastructure planning, investment decisions, utility planning, storage deployment, and regulatory development.

At the same time, growing demand associated with electrification, industrial expansion, large-load growth, and extreme weather events is creating new challenges related to resource adequacy, system resilience, and long-term planning. Demand growth appears across the regional profiles as an increasingly relevant planning consideration, although the specific demand drivers and system impacts vary by jurisdiction.

While reliability is a shared national priority, reliability risks vary considerably across regions. Planning discussions are increasingly shaped by challenges such as wildfire exposure, extreme heat events, extreme cold reliability concerns, industrial and manufacturing load growth, storage availability, infrastructure constraints, fuel supply considerations, and interdependencies among energy systems. As a result, the factors

influencing resource adequacy and resilience planning often differ even where overarching policy objectives remain similar.

These developments suggest that reliability planning is evolving beyond a narrowly operational function and becoming a broader strategic framework that informs investment prioritization, infrastructure modernization, technology evaluation, and long-term resource planning. The growing complexity of energy systems is also increasing attention to how infrastructure, generation resources, storage assets, fuel supply systems, and cross-sector coordination collectively contribute to reliability outcomes. Utilities and system operators may encounter increasing opportunities to develop planning approaches capable of evaluating demand growth, resource adequacy, resilience needs, infrastructure dependencies, and reliability requirements simultaneously. As reliability risks become increasingly shaped by regional conditions, planning frameworks may continue evolving to reflect region-specific system characteristics, including infrastructure availability, generation portfolios, storage capabilities, fuel supply considerations, and coordination across interconnected energy systems.

Gas-Electric Coordination

A recurring theme across the Regional Policy Profiles is the growing interdependence between natural gas systems, electric systems, storage resources, and emerging energy infrastructure. Infrastructure networks are increasingly considered together through reliability planning, resource adequacy requirements, storage development, electrification trends, and emerging technology deployment. As energy systems become more integrated, there is a greater need for planning and governance frameworks to address interactions across infrastructure sectors.

While recognition of these interdependencies is widespread, the maturity of coordination frameworks varies significantly across regions. In many jurisdictions, formal cross-system planning structures remain limited. Future energy system development may increasingly depend on planning approaches capable of coordinating investments across natural gas systems, electric systems, storage resources, resilience initiatives, and emerging technologies. Storage illustrates this trend. Across multiple regions, storage is considered in relation to natural gas reliability and affordability, electric reliability,

emergency preparedness, system flexibility, and, in some jurisdictions, emerging hydrogen or carbon management applications. This view reflects growing consideration of how infrastructure may support functions across multiple energy domains.

Greater emphasis on resource adequacy planning may create opportunities to improve visibility across interconnected infrastructure systems, strengthen resource adequacy assessments, enhance emergency preparedness planning, and better evaluate cross-system reliability risks and investment needs. As energy system interdependence increases, coordinated planning approaches may become increasingly valuable tools for managing complexity and supporting long-term system resilience.

Affordability in Energy System Planning

Affordability is becoming an increasingly important consideration in energy system planning, shaping how utilities, regulators, and policymakers evaluate reliability, resilience, resource adequacy, infrastructure investment, and energy transition pathways. Across regions, affordability is not consistently associated with a single fuel or technology. Instead, planning increasingly considers the comparative customer and system costs of maintaining existing resources, developing new infrastructure, and transitioning toward alternative pathways, including customer conversion costs, peak capacity needs, infrastructure utilization, fuel-price exposure, and investment timing.

For the natural gas industry, this creates an opportunity to more clearly demonstrate where existing resources and infrastructure provide measurable customer and system value. Pipeline and storage systems, firm fuel delivery capability, dispatchable generation, and gas-electric coordination may contribute to reliability, resilience, resource diversity, and peak demand management while potentially avoiding or deferring other infrastructure or customer investments. Demonstrating these benefits will increasingly require transparent analysis of total system costs, customer impacts, future utilization, and the costs and capabilities of alternative pathways.

At the same time, affordability considerations are becoming an increasingly important factor in infrastructure planning, particularly where future demand and utilization levels may be difficult to project. Balancing infrastructure investments with evolving system needs can help manage potential customer cost impacts, while ensuring that reliability and resilience objectives continue to be met. This creates opportunities for natural gas

utilities and industry stakeholders to strengthen resource adequacy planning, quantify infrastructure and resource value under different scenarios, and evaluate where assets should be maintained, modernized, repurposed, or supplemented by alternatives. Considering affordability alongside reliability, resilience, customer impacts, and long-term system needs can help identify where natural gas, emerging fuels, or alternative resources may provide the greatest value without presuming a single pathway across all jurisdictions.

Emerging Fuel Governance and Institutional Readiness

Hydrogen, RNG, carbon management technologies, advanced nuclear resources, and emerging storage applications appear across the regions despite differences in deployment priorities and policy objectives. These technologies frequently support multiple goals simultaneously, including reliability, economic development, emissions reduction, infrastructure utilization, energy security, and long-term system flexibility.

Equally significant is the degree of institutional development occurring alongside technology development. Across multiple regions, policymakers are establishing permitting frameworks, utility authorities, safety oversight requirements, cost-recovery mechanisms, storage governance programs, carbon-management regulations, liability provisions, and long-term stewardship frameworks. In many cases, governance structures are advancing before large-scale deployment occurs, reflecting efforts to create regulatory clarity and establish long-term oversight responsibilities.

These developments indicate that hydrogen governance, carbon management frameworks, storage regulation, gas planning requirements, and utility investment authorities represent active areas of institutional development nationally. This finding suggests that future energy system evolution may depend as much on institutional readiness and regulatory clarity as on technology readiness itself. Continued development of governance frameworks may create opportunities to reduce uncertainty surrounding infrastructure investment, permitting processes, system integration, and operational oversight. Early institutional development may also provide stakeholders with greater visibility into potential deployment pathways and long-term planning considerations as emerging technologies mature.

Workforce and Implementation Capacity

Workforce development is present across all five regions and cuts across nearly every major infrastructure and technology area examined. Hydrogen systems, carbon management, advanced nuclear technologies, storage systems, infrastructure modernization programs, and grid modernization efforts all require specialized technical expertise and operational capabilities. Workforce availability and implementation capacity may affect future energy system development.

Workforce preparation can be viewed not as a standalone implementation challenge but as a core component of long-term energy system planning. Future infrastructure investments ultimately depend upon the personnel, technical expertise, operational knowledge, and regulatory capacity required to support permitting, construction, operation, maintenance, and oversight activities.

Alignment between workforce planning, infrastructure development, technology deployment, and institutional capacity-building may increasingly influence the pace and effectiveness of future energy system development. As modernization efforts expand across multiple sectors, implementation readiness may become an increasingly relevant consideration in long-term planning discussions.

Policy Conclusions

The Regional Policy Profiles and National Policy and Regulatory Landscape Assessment demonstrate that the U.S. energy policy landscape is moving toward a more complex, integrated, and regionally differentiated planning environment. Across all five regions, policy activity is increasingly organized around the common system-level challenges of maintaining reliability and resilience, managing affordability, modernizing existing infrastructure, preparing for demand growth, developing governance frameworks for emerging technologies, and ensuring the workforce capacity needed to implement future energy projects. These themes suggest that future energy system development will be shaped not by a single national pathway, but by the interaction of infrastructure needs, resource availability, technology readiness, institutional capacity, customer and system costs, and evolving reliability requirements.

At the same time, regional variation remains important. States and regions are responding to similar pressures through different policy strategies based on their resource portfolios, infrastructure characteristics, climate risks, economic priorities, customer needs, and regulatory structures. Some regions are pursuing managed transitions that evaluate long-term changes in natural gas demand, while others continue to emphasize fuel choice, dispatchable resources, industrial competitiveness, and continued use of existing infrastructure. Still others are considering hydrogen, RNG, CCUS, storage, advanced nuclear, and other emerging technologies in relation to existing assets and future system needs. Across these differing pathways, affordability is increasingly considered alongside reliability, resource adequacy, infrastructure utilization, and customer impacts, with states evaluating both the costs of maintaining existing systems and the costs of developing or transitioning toward alternative resources. This variation does not indicate a lack of policy direction; rather, it reflects the reality that future energy systems will likely develop through multiple regional pathways shaped by local conditions and implementation priorities.

Policy and regulation also have a central role in enabling any future energy system, regardless of its ultimate composition. Whether future systems rely more heavily on natural gas, hydrogen, RNG, electrification, or combinations of these resources, policy and regulatory frameworks will influence how infrastructure is planned, financed, permitted, operated, and adapted over time. Clear and flexible governance structures may reduce uncertainty, support investment decisions, align reliability and resilience objectives, incorporate affordability and customer impacts into long-term planning and help ensure that emerging technologies are integrated in ways that reflect both national priorities and regional realities.

Future planning efforts may therefore benefit from approaches that remain adaptable across a range of technology, regulatory, market, and policy scenarios. Several considerations are likely to remain relevant under multiple future conditions, including infrastructure modernization, reliability planning, affordability and customer impacts, institutional readiness, and workforce development. At the same time, effective policy frameworks will need to preserve the flexibility necessary to accommodate differing regional circumstances and energy system development pathways. As the energy landscape continues to evolve, policy and regulation will remain essential tools for

translating technology potential into reliable, resilient, affordable, and implementable energy system outcomes.