State Policy Progress, 2022-2025

Addendum to Enabling Industrial Decarbonization: A Policy Guidebook for U.S. States

UNITED STATES CLIMATE ALLIANCE

State Policy Progress, 2022-2025

Addendum to Enabling Industrial Decarbonization: A Policy Guidebook for U.S. States

Download the Guide

Read the Press Release

Guide | December 2022

Enabling Industrial Decarbonization: *A Policy Guidebook for U.S. States*

Enabling Industrial Decarbonization: A Policy Guidebook for U.S. States details strategies and pathways for policymakers to reduce greenhouse gas emissions from the industrial sector.

In the U.S., the industrial sector is projected to become the largest source of national greenhouse gas (GHG) emissions by 2030 absent additional policy intervention. States are in a prime position to lead this intervention — swift and innovative action is necessary for the industrial sector to reach net-zero GHG emissions.

Enabling Industrial Decarbonization: A Policy Guidebook for U.S. States details strategies and pathways for policymakers to reduce GHG emissions from the industrial sector. Drawing from a landscape analysis of more than 100 state policies, the Guidebook details the multiple policy levers states can utilize to enable and advance five decarbonization pillars of industrial decarbonization — efficiency; electrification; low-carbon fuels and feedstocks; carbon capture, utilization, and storage technologies; and procurement.

For more information, see www.usclimatealliance.org

Published February 2026.

Photo Credits: All photos are sourced from iStock unless noted otherwise.

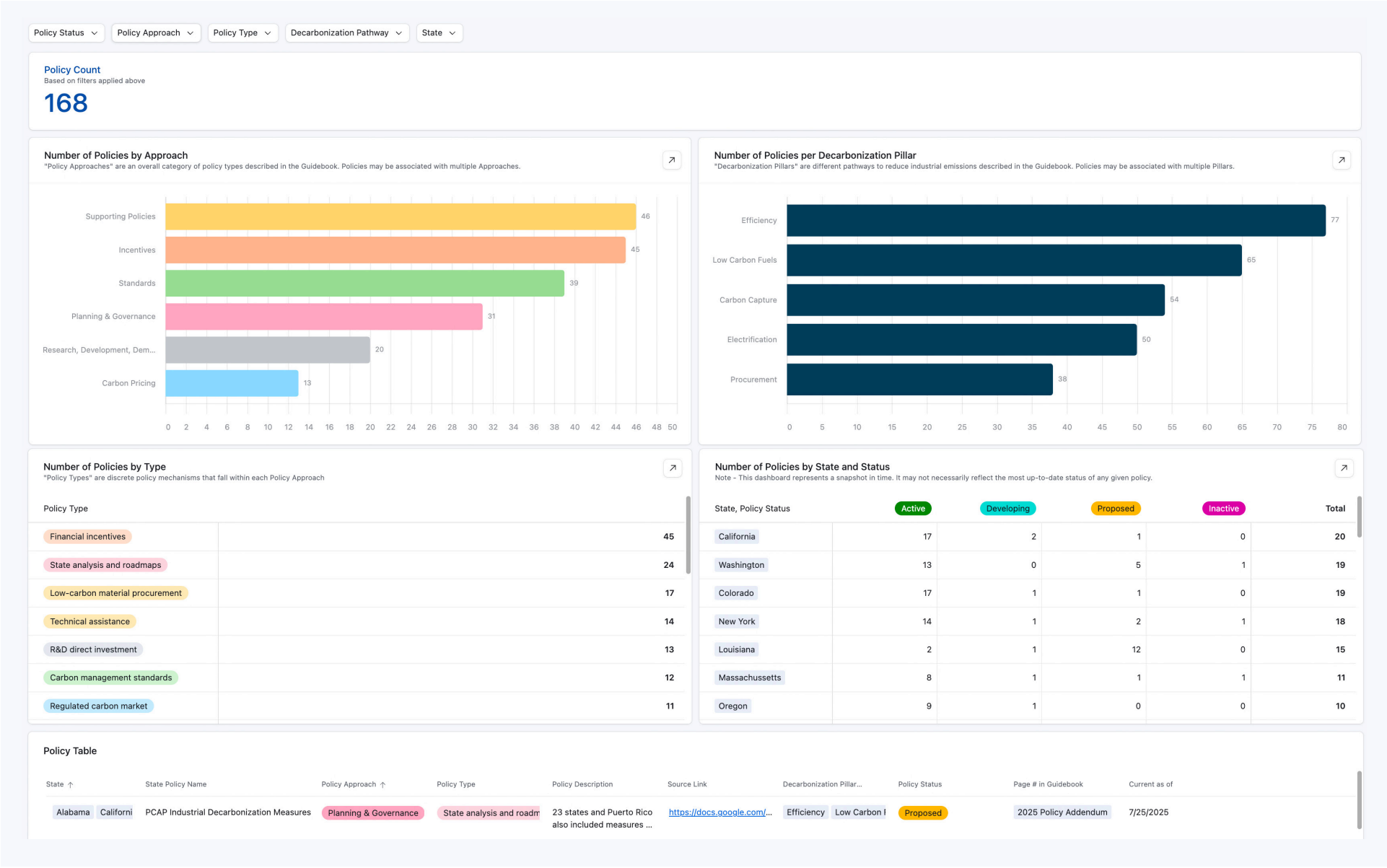
Table of Contents

Introduction

In December 2022, the U.S. Climate Alliance published *Enabling Industrial Decarbonization: A Policy Guidebook for U.S. States*, which details strategies and pathways for policymakers to reduce greenhouse gas (GHG) emissions from the industrial sector.[1] The Guidebook identified more than 100 policies relevant to industrial decarbonization in varying stages of implementation throughout the United States. In the U.S., industrial decarbonization is evolving rapidly at local, state, and federal levels, and related policies have matured since the Guidebook was published in 2022. This Addendum provides an updated view of state policy approaches to reducing industrial GHG emissions, highlighting 60 new state policies enabling industrial decarbonization, which complements the Guidebook's original 114 policies. A full list of policies covered in both the 2022 Guidebook and this Addendum can be found on the *State Industrial Decarbonization Policies Dashboard*.[2]

See more info on the *State Industrial Decarbonization Policies Dashboard*:
https://airtable.com/appbBy3Mza0KYl5L0/shrpmPxjxK1ucG1qN

FIGURE 1 A screenshot of the *State Industrial Decarbonization Policies Dashboard*, which can be used to sort and view the more than 160 state policies described in *Enabling Industrial Decarbonization: A Policy Guidebook for U.S. States* and its 2025 Policy Addendum.



Policy Progress

This addendum covers six policy categories, as defined in the 2022 Guidebook:

1. Planning & Governance
2. Research, Development, Demonstration, & Deployment
3. Carbon Pricing
4. Incentives
5. Standards
6. Supporting Policies & Actions

Figure 2 illustrates the policy types within these categories and how they intersect with the Guidebook's five pillars of industrial decarbonization.

FIGURE 2 Key Policies for Industrial Decarbonization

<table>
<tr><th></th><th>Efficiency</th><th>Electrification</th><th>Low Carbon Fuels & Feedstocks</th><th>Carbon Capture</th><th>Procurement</th></tr>
<tr><td rowspan="3">Planning & Governance</td><td colspan="5">State emissions and efficiency targets</td></tr>
<tr><td colspan="5">State analysis and roadmaps</td></tr>
<tr><td colspan="5">State governance structures</td></tr>
<tr><td rowspan="2">Research, Development, Demonstration, & Deployment</td><td colspan="4">Direct investment</td><td>Pilot projects</td></tr>
<tr><td colspan="4">Tax credits</td><td>Product life cycle assessments</td></tr>
<tr><td rowspan="3">Carbon Pricing</td><td colspan="5">Regulated carbon markets</td></tr>
<tr><td colspan="5">Carbon taxes</td></tr>
<tr><td colspan="5">Border carbon adjustments</td></tr>
<tr><td rowspan="2">Incentives</td><td colspan="5">Financial incentives (incl. grants, rebates, cash)</td></tr>
<tr><td colspan="5">Financing (incl. loans, bonds, green banks)</td></tr>
<tr><td rowspan="3">Standards</td><td colspan="5">Emissions standards</td></tr>
<tr><td>Efficiency standards</td><td colspan="2">Clean heat standards</td><td rowspan="2">Carbon management standards</td><td>Clean product standards</td></tr>
<tr><td>Circularity and recycling standards</td><td colspan="2">Clean fuel standards</td><td>Embodied emissions standards</td></tr>
<tr><td rowspan="7">Supporting Policies</td><td colspan="5">Labeling and certification</td></tr>
<tr><td colspan="5">Emissions disclosure and monitoring</td></tr>
<tr><td colspan="5">Equity and environmental justice</td></tr>
<tr><td colspan="5">Diverse workforce development</td></tr>
<tr><td colspan="5">Industry clustering</td></tr>
<tr><td colspan="2">Technical assistance</td><td colspan="3">Low-carbon material procurement</td></tr>
<tr><td>Strategic energy management</td><td colspan="4">Low-carbon infrastructure investment</td></tr>
</table>

Planning & Governance

Overview

State climate planning and governance are essential for creating a policy environment that coordinates and directs the industrial sector's emissions toward zero. State target-setting, roadmap development, and stakeholder engagement help to establish market signals for greener products and emissions-reducing technologies. These actions can also coordinate parallel policy components such as workforce development to accommodate industrial transitions and ensure disadvantaged communities receive equitable benefits from the transition.

State Actions

Emissions targets and goals

California enacted a law setting an embodied GHG emissions net reduction target of 40 percent by 2035 for building materials, a national first. The law also established an interim target of 20 percent net reduction by 2030.[3]

Massachusetts built upon its economywide decarbonization targets for 2025 and 2030 by establishing GHG emissions sub-limits for commercial and industrial heating and cooling and for industrial processes in 2050.[4]

Plans, analyses, and roadmaps

California released its *Draft Net-Zero Greenhouse Gas Emissions Strategy for the California Cement Sector* for public comment,[5] pursuant to its 2021 law establishing a net-zero emissions target for the state's cement sector.[6] The strategy lays out the key levers for cement industry decarbonization and assesses the barriers to achieving GHG reductions across the sector. California also enacted a law that calls for the development of a report of recommendations and decarbonization pathways suitable for green renewable hydrogen, which is under development.[7]

California, **Oregon**, and **Washington**, along with cities and provinces in Canada, released the Pacific Coast Collaborative's *Vision and Action Plan* to promote a regional low-carbon construction sector.[8] This plan is the output of the Pacific Coast Collaborative's Low Carbon Construction Task Force, launched at COP26 in 2021.

Colorado is developing an *Industrial Decarbonization Blueprint*, which will identify real-world, cost-sensitive strategies to reduce emissions from the state's current industrial sector emissions trajectory, charting a course to further refine industrial reduction targets and meet existing statutory targets.

Connecticut enacted a law that calls for the development of a hydrogen strategic plan, focusing on hydrogen produced by renewable sources and its application in hard to-decarbonize end uses, such as high-temperature industrial processes and maritime shipping. The final Connecticut Clean Hydrogen Roadmap was published in 2025.[9]

Maryland published its Climate Pollution Reduction Plan, which outlined potential policy pathways, including industrial-specific policies, to achieve Maryland's 2031 and 2045 GHG emissions goals.[10] Maryland also published a report detailing manufacturing sector decarbonization strategies and recommending incentives, standards, and procurement programs to mitigate emissions. The report found that decarbonization measures would likely result in cost savings for manufacturers.[11]

Michigan released three Clean Energy Asset Roadmap reports that identify, evaluate, and detail opportunities to speed the growth of geothermal, solar, and wind use in commercial and industrial facilities.[12]

New York's *Statewide Industrial Facilities Stock Study* identified the opportunities for GHG reductions, energy efficiency, beneficial electrification, and renewable energy in manufacturing facilities throughout the state. Conducted in two phases, the reports identified how key industrial sectors implementing GHG reduction measures could contribute to achieving the state's 2050 climate goals.[13]

North Carolina released its *Deep Decarbonization Pathways Analysis*, highlighting opportunities to reduce greenhouse gas emissions and deploy clean energy solutions across the state, including in the industrial sector.[14]

Pennsylvania's *A Roadmap for Industrial Decarbonization* evaluated a pathway to address emissions from all industrial subsectors through 2050.[15] This report was developed by the Ohio River Valley Institute to inform Pennsylvania's Climate Pollution Reduction Grants Program application, which focused on industrial decarbonization.

Washington published an assessment of the economic impacts of the state's five refineries. The assessment evaluates how refinery operations and economic impacts may change in the future, taking into consideration state decarbonization targets.[16] Washington also published a legislative report assessing opportunities and challenges to advancing green electrolytic hydrogen and hydrogen-derived fuels in the state, which includes analysis of potential industrial end uses.[17] The state also enacted a law that calls for the creation of a state industrial strategy, including an assessment of the net-zero transition's impacts on manufacturing.[18]

Twenty-four states and Puerto Rico included measures related to industrial decarbonization in their Priority Climate Action Plans developed with funds from the Climate Pollution Reduction Grants Program (CPRG).[19] Examples of proposed measures include improvement in industrial energy efficiency, evaluation of regulatory gaps for clean hydrogen projects, clinker substitution, use of alternative fuels in industrial processes, carbon capture and sequestration for flue gas, and testing and piloting of low-embodied carbon materials. Notably, several states that were awarded CPRG funding intend to use funds to advance industrial decarbonization, including **Colorado**,[20] **Illinois**,[21] **Minnesota**,[22] **Oregon**,[23] and **Pennsylvania**.[24]

Research, Development, Demonstration, & Deployment

Overview

Research, Development, Demonstration & Deployment (RDD&D) is the suite of activities needed to develop and commercially scale industrial decarbonization solutions in the near term, while advancing innovative solutions for the long term. Policies that support industrial decarbonization RDD&D help drive down the cost of emissions-reducing technologies and serve as a complement to, and accelerant of, other policy solutions.

State Actions

California's Commercialization Industrial Decarbonization Program funds development and demonstration projects for pre-commercial industrial decarbonization technologies.[25]

Colorado's Industrial Tax Credit Offering provides competitively awarded refundable tax credits for developing and deploying industrial decarbonization demonstration projects. Applicants can receive up to $1 million to help defray the cost of performing technical studies and $8 million to implement projects.[26]

Maryland established the Climate Technology Founder's Fund under the Maryland Clean Energy Center to invest at least $1.2 million annually over four years in start-up companies looking to advance new clean tech and climate tech solutions to the demonstration and deployment stage.[27]

Michigan launched the Industrial Decarbonization Innovation Challenge, an initiative to discover and support groundbreaking technologies and entrepreneurs focused on decarbonizing the industrial sector. Successful applicants had an opportunity to engage in a paid pilot project in which up to $250,000 was made available to support industrial decarbonization demonstrations and other technology development services.[28]

New York launched a $16 million RD&D solicitation to advance innovation in clean hydrogen use in industrial processes, transportation, energy storage, and grid support.[29]

Carbon Pricing

Overview

Carbon pricing policies, such as cap-and-trade programs and carbon taxes, establish a direct or indirect price on units of GHG emissions (dollars per ton) in a defined market. These policies ultimately incentivize investment in low-carbon fuels and energy-efficient practices and technologies. Carbon pricing policies offer a technology-neutral approach for driving down emissions and a cost-effective option for the diverse industrial sector, which requires a wide range of technologies and process changes to reduce emissions. Carbon pricing programs can also generate revenue that state governments can redeploy toward other critical policy areas, such as industrial decarbonization RDD&D, incentives, technical assistance, and targeted investments in disadvantaged communities.

State Actions

States operate the only existing carbon market programs in the United States: **California's** Cap-and-Trade Program[30] since 2013; **Washington's** Cap-and-Invest Program[31] since 2023; **New York's** Cap-and-Invest program[32] (under development as of September 5, 2025), and the Regional Greenhouse Gas Initiative[33] established in 2005, which is a cooperative effort among Northeast and Mid-Atlantic states focused exclusively on power sector emissions. California and Washington's programs cover industrial facilities in their caps, as will New York's eventually.

In 2024, **Oregon** adopted rules to establish the Climate Protection Program (CPP), which sets an enforceable declining cap on GHG emissions from fossil fuels used throughout Oregon, aiming to reduce these emissions by 50 percent by 2035 and 90 percent by 2050.[34] The CPP will regulate energy-intensive trade-exposed (EITE) industries and direct natural gas sources, including facilities in the cement, forest products, semiconductor, and steel industries. EITE sources are exempt from compliance obligations for the first compliance period (2025-2028) while the state develops carbon emissions intensity targets for EITEs.[35] Although the CPP does not set a price on carbon, it will operate similarly to other emissions trading programs in the western United States.

In 2023, **Colorado** began operating its Greenhouse Gas Crediting and Tracking System, initially starting with gas utilities and then adding industrial and manufacturing facilities covered by the GEMM 1 and 2 rules (see Standards section) to the system in 2024. Rather than a cap-and-trade mechanism, the Colorado system uses a "baseline and credit" approach, in which companies earn credits only by reducing their emissions beyond what is required by law. Credit-earning companies can then sell credits to other companies that cannot meet their emissions reduction obligations as quickly or as cost effectively. Colorado plans to add midstream oil and gas facilities to this system in 2028.[36]

Incentives

Overview

Economic incentives are among the most common policy tools governments deploy to promote decarbonization. Incentives can be fiscal (e.g., tax credits, tax exemptions, subsidies) or competitive financing (e.g., low-interest loans, loan guarantees, low-cost insurance) to help industry defray upfront costs of efficiency or technology investments. Competitive grants are also quite common. States can design technology-neutral incentives or target specific adoption of low-carbon technologies and fuels, low-carbon manufacturing and retooling, low-carbon appliances and equipment, or energy or material efficiency improvements. Most new state incentives over the past two years have focused on grant offerings that broadly promote industrial decarbonization while remaining technology neutral.

State Actions

Grants

California established the Industrial Decarbonization and Improvement of Grid Operations Program, which provided $46.2 million in grants for industrial projects that benefit the electrical grid while reducing emissions.[37] California also launched the Clean Hydrogen Program, partially funded by the state's cap-and-trade program, which offers incentives for the production, delivery, storage, or use of clean hydrogen.[38]

Maryland,[39] **Massachusetts**,[40] and **Minnesota**[41] each launched or are planning to launch grant programs to support industry in developing environmental product declarations. Environmental product declarations are are a foundational reporting tool for Buy Clean procurement policies to demonstrate the environmental impacts of construction materials. See section on Supporting Policies and Actions for more information on procurement policies.

The **Michigan** Small Manufacturers Retooling Program helped fund manufacturing process improvements that reduce energy use and costs.[42]

New York's Commercial and Industrial Accelerated Efficiency Program provided $10 million in funding for on-site electrification or energy efficiency upgrades at large, energy-intensive facilities.[43] New York's Heat Recovery Program provides cost sharing to support the inclusion of heat recovery energy conservation measures (such as industrial heat pumps) when retrofitting existing buildings, including manufacturing sites.[44]

Pennsylvania received a $396 million Climate Pollution Reduction Grant, which it used to launch Reducing Industrial Sector Emissions in Pennsylvania (RISE PA), a statewide industrial decarbonization grant program. The program is offering grants for small, medium, and large decarbonization projects at industrial facilities to reduce GHG emissions and co-pollutants by promoting investment into emissions reduction technologies, energy efficiency upgrades, and on-site renewable energy generation.[45]

Washington allocated $117 million from its cap-and-invest program, including $72.6 million to support various community clean energy and decarbonization projects across the state. Part of the solicitation targeted “hard to decarbonize” sectors, such as industry.[46]

Tax Credits

Colorado’s Industrial Tax Credit Offering helps industrial facilities implement GHG emissions reduction improvements between $16 million and $24 million per year through 2032.[47] Colorado also created a state income tax credit for the use of clean hydrogen in “hard to decarbonize end uses,” including industrial processes and heat specifically. The law explicitly defines clean hydrogen as having an emissions intensity less than 1.5 kilograms of carbon dioxide equivalent per kilogram of hydrogen. The law also requires the Public Utilities Commission to adopt rules for utility investment in hydrogen projects that include requirements for additionality, hourly time matching, and deliverability.[48] In 2025, Colorado enacted legislation that adds embodied carbon improvements to the list of new energy improvements that are eligible for property-assessed clean energy financing and to the state’s industrial clean energy tax credit. This law will help bolster the market for construction materials produced with lower GHG emissions.[49]

Illinois enacted a law that established a hydrogen fuel replacement tax credit in an amount equal to $1 per kilogram of eligible zero-carbon hydrogen used to displace fossil fuels and fossil fuel-derived hydrogen in end uses that are not easily electrified. Hydrogen used in light- and medium-duty vehicles, in building heating, and for power generation is ineligible for the credit. The credit has bonus adders available for projects that provide specific benefits to workforce and equity communities.[50]

New Jersey concrete producers who supply at least 50 yards of low-carbon concrete for state-funded construction projects are eligible for a tax credit. [51]

Standards

Overview

Standards "specify levels of performance [that] businesses or equipment must achieve."[52] Industrial standards can be tailored to meet the unique aspects and challenges of decarbonizing specific subsectors. Standards could be developed to target a specific type of facility or product (e.g., cement), manufacturing process (e.g., boilers), or fuel. In theory, states can develop standards to address all pillars of industrial decarbonization, either through explicit design considerations, such as a technology standard for industrial electrification, or a flexible performance-based standard that accommodates all pillars, such as a broad emissions standard.

State Actions

Sector-specific emissions standards

California's South Coast Air Quality Management District adopted a zero-nitrogen oxides (NOx) emissions standard for commercial ovens in the food and beverage manufacturing sector. Rule 1153.1 is a targeted regulation covering 218 commercial food ovens at 97 facilities operating in the Los Angeles region.[53]

Colorado's Air Pollution Control Division adopted a new rule that requires midstream oil and gas facilities to begin taking steps to reduce GHG emissions from combustion fuel equipment. Midstream facilities have a 2030 deadline to meet GHG emissions limits for both the overall sector and their facilities and must meet additional emissions reduction targets beyond 2030.[54]

Sector-wide emissions standards

California's South Coast Air Quality Management District adopted Rule 1146.2, which establishes a zero-NOx emissions limit for large water heaters, small boilers, and process heaters with capacities up to 2 million Btu per hour.[55] The District is currently evaluating control measures for water heaters, boilers, and process heaters in the 2-5 million Btu/hour capacity and greater than 5 million Btu/hour capacity.[56]

Colorado adopted first-of-a-kind rules in the U.S. to reduce both air pollution in local communities and GHG emissions from manufacturing facilities in 2023. The *Greenhouse Gas Emissions and Energy Management for Manufacturing Phase 2 (GEMM 2) Rule* ensures that 18 of Colorado's highest-emitting manufacturers — such as petrochemical, food and beverage, semiconductor, and glass industries — collectively reduce their GHG emissions 20 percent by 2030 from their 2015 levels. Facilities must conduct energy audits and identify strategies to reduce GHG emissions, prioritizing onsite emissions reductions measures and measures that improve community air quality.[57]

Washington enacted a law to address a gap in the Clean Energy Transformation Act to ensure large industrial energy consumers use renewable energy for their onsite electricity sources.[58] Previously, only electric utilities were required to meet clean energy standards regarding sales of electricity, but this amendment states that

nonresidential retail electric customers that generate their own electricity must also meet the same standards.

Carbon management standards

California passed a law creating a carbon capture, utilization, and storage (CCUS) program aimed at accelerating the deployment of carbon management technologies, including direct air capture. The state banned the use of these technologies for enhanced oil recovery and is developing a regulatory framework for CCUS.[59]

Colorado enacted a law directing the energy office to develop a carbon management roadmap, including policy recommendations to the state legislature.[60] Colorado enacted a second law that defines pore space ownership and authorizes the state's Energy and Carbon Management Commission to regulate CCUS activities.[61]

Illinois enacted the "SAFE CCS Act," which establishes numerous monitoring, safety, and insurance requirements for CCUS projects. The Act also places a two-year moratorium on new carbon dioxide pipelines and requires CCS projects to achieve net GHG reductions.[62]

New Mexico enacted the "Carbon Dioxide Storage Stewardship Act," which transfers the ownership of storage wells to state oversight within five years of final injection. The Act also creates a stewardship fund that will be financed by a fee per metric ton of carbon dioxide stored, ensuring the state is resourced to provide long-term monitoring of the wells.[63]

Pennsylvania enacted a law establishing a regulatory framework for CCUS in the state, including mandatory seismic monitoring, a 50-year monitoring and accountability period of sequestration sites, clarification of pore space ownership rights, and creation of a Carbon Dioxide Storage Facility Fund to defray the state's long-term management costs.[64]

Embodied emissions standards

Maryland,[65] **Massachusetts**,[66] **Minnesota**,[67] and **New Jersey**[68] each enacted laws that call for state procurement agencies to develop and adopt maximum global warming potential limits for various construction materials used in public projects. See the Supporting Policies and Actions section for more information on procurement policies.

New York adopted a first-in-the-nation Buy Clean Concrete mandate for state agencies. These rules establish emissions limits on concrete used in state-funded public building and transportation projects.[69]

Supporting Policies & Actions

Overview

Supporting policies can lower the costs and boost the effectiveness of the other policy types described in this addendum through improved information and economic assistance. For example, policies like disclosure and labeling programs, technical assistance, and workforce training can help build knowledge infrastructure, while procurement policies and certification p ograms can help create new markets or direct funding to physical infrastructure.

State Actions

Low-carbon material procurement

Buy Clean policies leverage the purchasing power of public authorities and combine disclosure, incentives, and emissions standards to create a market for lower-carbon construction materials.

In March 2023, the Biden-Harris administration announced the launch of the Federal-State Buy Clean Partnership with 12 leading states—**California**, **Colorado**, **Hawai'i**, **Illinois**, **Maine**, **Maryland**, **Massachusetts**, **Michigan**, **New Jersey**, **New York**, **Oregon**, and **Washington**—and later welcomed **Minnesota** into the partnership. These states committed to prioritize efforts that support the procurement of lower-carbon infrastructure materials in state-funded projects, and to collaborate with the federal government and one another to send a harmonized demand signal to the marketplace. In January 2025, the U.S. Climate Alliance announced that it will house and lead this partnership due to the change in administration.[70]

Nine states — **California**,[71] **Colorado**,[72] **Maryland**,[73] **Massachusetts**,[74] **Minnesota**,[75] **New Jersey**,[76] **New York**,[77] **Oregon**,[78] and **Washington**[79] — have now enacted Buy Clean laws to boost demand for lower-embodied carbon steel, concrete, asphalt, glass, and other construction products. Covered or eligible materials (i.e., concrete, cement, steel, asphalt, glass, wood, and insulation) vary by state policy, as do the project type (buildings and transportation infrastructure) and reporting mechanisms to track progress.

Technical assistance

Decarbonization is a daunting challenge for private-sector actors in the industrial sector to address on their own. Government-funded technical assistance can help companies overcome cost barriers for devising plans and projects to reduce GHG emissions.

Illinois plans to use part of its $430 million CPRG award to create a novel Clean Industry Concierge, which will help industrial facilities in the state navigate, coordinate, and access funding opportunities. The Clean Industry Concierge will also help these facilities obtain support in designing and implementing decarbonization measures, and provide strong guidance on industry best practices in efficient and cost-effective low-carbon technologies and processes.[80]

North Carolina's Office of Science, Technology, and Innovation in the Department of Commerce is the lead recipient of a U.S. Department of Energy grant to provide financial assistance for small-to-medium sized manufacturers to offset some of the expenses of non-equipment costs to adopt and integrate relevant "SMART"

technologies. SMART manufacturing refers to how technology is used to enhance operational efficiency and make businesses more profitable. The NC Manufacturing Extension Partnership is the subcontractor responsible for providing training and financial assistance to participating manufacturers.[81]

Pennsylvania's Department of Environmental Protection offers funding assistance for small- to mid-sized industrial facilities to receive free or reduced-cost energy audits. Audits provide facilities with a financial analysis of energy efficiency recommendations and implementation steps.[82]

Washington published a series of model specifications for projects subject to the state's Buy Clean Buy Fair policy and created an embodied carbon video training series. The specifications cover the EPD and GWP requirements for concrete, steel, and wood products and are available for adaptation in other states. The video training series includes five modules on different embodied carbon topics to build government staff capacity in this field and assist in policy implementation.[83]

References

1 U.S. Climate Alliance, *Enabling Industrial Decarbonization: A Policy Guidebook for U.S. States*, https://usclimatealliance.org/guide/industrial-decarbonization-guide-dec-2022/

2 https://airtable.com/appbBy3Mza0KYl5L0/shrpmPxjxK1ucG1qN

3 California Air Resources Board, Embodied Carbon, https://ww2.arb.ca.gov/our-work/programs/embodied-carbon/about

4 Commonwealth of Massachusetts, Executive Office of Energy and Environmental Affairs, "Determination of Statewide Greenhouse Gas Emissions Limits and Sector-Specific Sublimits for 2050," https://www.mass.gov/info-details/massachusetts-clean-energy-and-climate-plan-for-2050#2050-emissions-limit-and-sublimits.

5 California Air Resources Board, Net-Zero Emissions Strategy for the Cement Sector, arb.ca.gov/our-work/programs/net-zero-emissions-strategy-cement-sector

6 SB-596 Greenhouse Gases: Cement Sector: Net-Zero Emissions Strategy, California Legislature, https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220SB596

7 California Air Resources Board, SB 1075 Report: Hydrogen Development, Deployment, and Use, https://ww2.arb.ca.gov/our-work/programs/sb-1075-hydrogen.

8 Pacific Coast Collaborative, *Low Carbon Construction Task Force Releases Vision and Action Plan*, https://pacificcoastcollaborative.org/low-carbon-construction-task-force-releases-vision-and-action-plan/

9 Connecticut Department of Energy & Environmental Protection, Clean Hydrogen, https://portal.ct.gov/deep/energy/renewable-energy/clean-hydrogen.

10 Maryland Department of Environment, Climate Pollution Reduction Plan, mde.maryland.gov/programs/air/ClimateChange/CPRP/Pages/Overview.aspx

11 Maryland Department of the Environment, *Manufacturing Sector Decarbonization Strategies and Impacts in the State of Maryland*, https://mde.maryland.gov/programs/air/ClimateChange/Documents/MD%20Manufacturing%20-%20Report%20-%20Oct%202022.pdf

12 Michigan Department of Environment, Great Lakes, and Energy, Clean Energy Assets, michigan.gov/egle/about/organization/materials-management/energy/industry/clean-energy-assets

13 New York State Energy Research and Development Authority, Commercial, Industrial & Agriculture Publications, 2024 Industrial Facility Stock Assessment: Phase Two, *2022 Industrial Facilities Stock Assessment: Phase One*, https://www.nyserda.ny.gov/About/Publications/Evaluation-Reports/Commercial-Industrial-Agriculture

14 Office of Governor Roy Cooper, *North Carolina Deep Decarbonization Pathways Analysis*, https://governor.nc.gov/nc-pathways-report/open

15 Strategen for the Ohio River Valley Institute, *A Roadmap for Industrial Decarbonization in Pennsylvania*, https://ohiorivervalleyinstitute.org/wp-content/uploads/2024/02/ORVI-Industrial_Decar_Pathway_Report_Final.pdf

16 Washington State Department of Commerce, *Washington State Refinery Economic Impact Study*, https://cdn.prod.website-files.com/5d8aa5c4ff027473b00c1516/67c89203b08b0f9c67650561_CommerceReports%20ED%20WWU%20Refinery%20Study.pdf

17 Washington State Department of Commerce, *Green Electrolytic Hydrogen and Renewable Fuels: Recommendations for Deployment in Washington*, https://deptofcommerce.app.box.com/s/widfnmxbo8ijt3uozpoq91jzapu4dhae

18 Washington State Legislature, SB 5269, Concerning Washington state manufacturing, 2023. https://app.leg.wa.gov/billsummary?Year=2023&BillNumber=5269.

19 RMI, "State Priority Climate Action Plans Assessment Spreadsheet," https://rmi.org/insight/state-priority-climate-action-plans-assessment-spreadsheet/

20 Colorado Energy Office, EPA Climate Pollution Reduction Grants, energyoffice.colorado.gov/cprg

21 Illinois Environmental Protection Agency, Climate Pollution Reduction Grants, https://epa.illinois.gov/topics/climate/climate-pollution-reduction-grants.html

22 Minnesota Pollution Control Agency, Climate Pollution Reduction Grants, https://www.pca.state.mn.us/business-with-us/climate-pollution-reduction-grants

23 Oregon Department of Environmental Quality, Climate Pollution Reduction Grant Award, https://www.oregon.gov/deq/ghgp/Documents/CPRGVisual-ODOE.pdf

24 Pennsylvania Department of Environmental Protection, Energy Programs Office, "Reducing Industrial Sector Emissions in Pennsylvania (RISE PA)," https://www.pa.gov/agencies/dep/programs-and-services/energy-programs-office/rise-pa.html

25 California Energy Commission, GFO-22-301 Commercialization Industrial Decarbonization (2022 CID Program), https://www.energy.ca.gov/solicitations/2022-10/gfo-22-301-commercialization-industrial-decarbonization-2022-cid-program

26 Colorado Energy Office, Colorado Industrial Tax Credit Offering, https://energyoffice.colorado.gov/citco

27 Maryland Energy Innovation Accelerator, Phase 3: Climate Technology Founders Fund (CTFF), https://mdeia.org/phase-3

28 Michigan Department of Environment, Great Lakes, and Energy, “Centrepolis Accelerator, EGLE, Other Michigan Partners Team Up for Initiative to Reduce Industrial Carbon Emissions,” https://www.centrepolis.org/industrial-decarbonization

29 New York State Energy Research and Development Authority, “More Than $16 Million Now Available to Advance Innovation in Clean Hydrogen,” https://www.nyserda.ny.gov/About/Newsroom/2024-Announcements/2024_03_15-Governor-Hochul-Announces-More-Than-16-Million-Now-Available-Clean-Hydrogen

30 California Air Resources Board, Cap-and-Trade Program, https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program

31 State of Washington Department of Ecology, Washington’s Cap-and-Invest Program, https://ecology.wa.gov/air-climate/climate-commitment-act/cap-and-invest

32 New York State Clean Air Initiative, “Greenhouse Gas Reporting Regulation Proposal Now Available for Public Review,” https://capandinvest.ny.gov/

33 The Regional Greenhouse Gas Initiative, https://www.rggi.org/

34 Oregon Department of Environmental Quality, “The Environmental Quality Commission Adopts the Climate Protection Program,” https://apps.oregon.gov/oregon-newsroom/OR/DEQ/Posts/Post/EQC-adopts-climate-protection#:~:text=%E2%80%9CThe%20Climate%20Protec-tion%20Program%20will,justice%20communities%20across%20the%20state.

35 Oregon Department of Environmental Quality, Climate Protection Program: EITE and DNG Source List, https://www.oregon.gov/deq/ghgp/Documents/CPP-CSSList.pdf

36 Colorado Department of Public Health & Environment, Greenhouse Gas Credit Trading in Colorado, https://cdphe.colorado.gov/greenhouse-gas-credit-trading-in-colorado

37 California Energy Commission, Industrial Decarbonization and Improvement of Grid Operations – INDIGO, https://www.energy.ca.gov/programs-and-topics/programs/industrial-decar-bonization-and-improvement-grid-operations-indigo

38 California Energy Commission, Clean Hydrogen Program, https://www.energy.ca.gov/programs-and-topics/programs/clean-hydrogen-program#:~:text=The%20Clean%20Hydrogen%20Program%20provides,help%20reduce%20sector-wide%20emissions.

39 SB0424: Eligible Projects – Procurement of Construction Materials (Buy Clean Maryland Act), Maryland General Assembly, https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/SB0424?ys=2023rs

40 Massachusetts Concrete & Aggregate Producers Association, EPD Grant Program, https://www.macapa.org/epd-grant-program/

41 Minnesota Department of Administration, Environmental Standards Procurement Task Force, https://mn.gov/admin/government/purchasing-contracting/buy-clean/

42 Michigan Department of Environment, Great Lakes, and Energy, Small Manufacturers Retool-michigan.gov/egle/about/organization/materials-management/energy/rfps-loans/small-manufacturers-retooling

43 New York State Energy Research and Development Authority, “$10 Million Commercial and Industrial Accelerated Efficiency Program to Reduce Fossil Fuel Consumption,” https://www.nyserda.ny.gov/About/Newsroom/2023-Announcements/2023-06-12-Governor-Hochul-Announces-10-Million-Commercial-and-Industrial-Accelerated-Efficiency

44 New York State Energy Research and Development Authority, Heat Recovery Program, https://www.nyserda.ny.gov/All-Programs/Heat-Recovery-Program

45 Pennsylvania Department of Environmental Protection, Energy Programs Office, Reducing Industrial Sector Emissions in Pennsylvania (RISE PA), https://www.pa.gov/agencies/dep/pro-grams-and-services/energy-programs-office/rise-pa.html

46 Washington State Department of Commerce, “Climate Commitment Act Dollars at Work: Commerce Awards $72.6 Million for Community Decarbonization Work in 24 Countries,” https://www.commerce.wa.gov/cca-community-decarbonization/

47 Colorado Energy Office, Colorado Industrial Tax Credit Offering, https://energyoffice.colorado.gov/citco

48 HB23-1281: Advance the Use of Clean Hydrogen, Colorado General Assembly https://leg.colorado.gov/bills/hb23-1281

49 Colorado General Assembly, SB 25-182: Embodied Carbon Reduction, May 28, 2025, https://leg.colorado.gov/bills/sb25-182

50 Illinois General Assembly, HB2501, Hydrogen Fuel Replacement Tax Credit Act, 2023, https://www.ilga.gov/legislation/103/HB/10300HB2051.htm

51 Bill S287: Chapter 3, New Jersey Legislature, https://www.njleg.state.nj.us/bill-search/2022/S287/bill-text?f=PL23&n=4_

52 https://energypolicy.solutions/energy-policy-design/performance-standards/

53 South Coast Air Quality Management District, Rule 1153.1 – Emissions of Oxides of Nitrogen from Commercial Ovens, https://www.aqmd.gov/docs/default-source/Agendas/Govern-ing Board/2023/2023-Aug4-022.pdf?sfvrsn=6

54 Colorado Department of Public Health & Environment, “Colorado Adopts Nation-Leading Standard to Cut Greenhouse Gas Emissions From Oil and Gas,” https://cdphe.colorado.gov/press-release/colorado-adopts-nation-leading-standard-to-cut-greenhouse-gas-emissionsfrom-oil-and#:~:text=The%20rule%20builds%20upon 20action,14%2C%202025.

55 South Coast Air Quality Management District, “Rule 1146.2: Emissions of Oxides of Nitrogen From Large Water Heaters and Small Boilers and Process Heaters,” https://www.aqmd.gov/docs/default-source/rule-book/recent-rules/r1146_2-060724.pdf?sfvrsn=8

56 South Coast Air Quality Management District, South Coast Air Quality Management District Zero-Emission Standards and Incentives, https://www.aqmd.gov/docs/default-source/joint-workshop/michael-krause.pdf?sfvrsn=fed58361_6

57 Colorado Department of Public Health & Environment, *Greenhouse Gas Emissions and Energy Management for Manufacturing 2 (GEMM 2) Rule, As Approved by the Air Quality Control Commission*, https://cdphe.colorado.gov/GEMM-phase-2-rule

58 HB 1416 - 2023-24, Washington State Legislature, https://app.leg.wa.gov/billsummary?BillNumber=1416&Year=2023&Initiative=false

59 California Air Resources Board, “Public Meetings to Provide an Overview of SB 905 Carbon Capture Utilization and Sequestration Requirements,” https://ww2.arb.ca.gov/events/public-meetings-provide-overview-sb-905-carbon-capture-utilization-and-sequestration

60 HB23-1210: Carbon Management, Colorado General Assembly, https://leg.colorado.gov/bills/hb23-1210

61 HB24-1346: Energy & Carbon Management Regulation, Colorado General Assembly, https://leg.colorado.gov/bills/hb24-1346

62 Public Act 103-0651, Illinois General Assembly, https://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=103-0651

63 HB 458: Carbon Dioxide Storage Stewardship Act, New Mexico Legislature, https://www.nmlegis.gov/Legislation/Legislation?chamber=H&legType=B&legNo=458&year=25

64 Act No. 87 of 2024: Carbon Capture and Sequestration Act – Enactment, Pennsylvania General Assembly, https://www.palegis.us/statutes/unconsolidated/law-information?

65 HB0261: Eligible Projects – Procurement of Construction Materials (Buy Clean Maryland Act), Maryland General Assembly, https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/hb0261?ys=2023rs

66 An Act Promoting a Clean Energy Grid, Advancing Equity and Protecting Ratepayers, Commonwealth of Massachusetts, 194th General Court, https://malegislature.gov/Bills/193/S2967sessYr=2024&-sessInd=0&actNum=0087

67 Conference Committee Report on H.F. No. 2310, Minnesota Legislature, Office of the Revisor of Statutes, https://www.revisor.mn.gov/bills/text.php?number=HF2310&version=A&session=ls93&session_year=2023&session_number=0&type=ccr

68 Bill S287, New Jersey Legislature, https://www.njleg.state.nj.us/bill-search/2022/S287/bill-text?f=AL23&n=4_

69 Office of Governor Kathy Hochul, “Governor Hochul Announces Adoption of First-in-the-Nation ‘Buy Clean Concrete’ Mandate for State Agencies,’” https://www.governor.ny.gov/news/governor-hochul-announces-adoption-first-nation-buy-clean-concrete-mandate-state-agencies

70 U.S. Climate Alliance, “State Buy Clean Partnership,” https://usclimatealliance.org/member-support/federal-state-buy-clean-partnership/

71 Buy Clean California Act, California Legislative Information, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?division=2.&chapter=3.&part=1.&lawCode=PCC&article=5.

72 SB22-051: Policies to Reduce Emissions From Built Environment, Colorado General Assembly, https://leg.colorado.gov/bills/sb22-051

73 HB0261: Eligible Projects – Procurement of Construction Materials (Buy Clean Maryland Act), Maryland General Assembly, https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/hb0261?ys=2023rs

74 An Act Promoting a Clean Energy Grid, Advancing Equity and Protecting Ratepayers, Commonwealth of Massachusetts, 194th General Court, https://malegislature.gov/Bills/193/S2967

75 SF 2156: Buy Clean and Buy Fair Minnesota Act, Minnesota Legislature, Office of the Revisor of Statutes, https://www.revisor.mn.gov/bills/bill.php?b=senate&ssn=0&y=2023&f=sf2156

76 Bill S287, New Jersey Legislature, https://www.njleg.state.nj.us/bill-search/2022/S287/billtext?f=AL23&n=4_

77 Section 136-D*2: Contracts Involving Low Embodied Carbon Concrete, New York State Senate, https://www.nysenate.gov/legislation/laws/STF/136-D*2

78 SB22-051: Policies to Reduce Emissions From Built Environment, Colorado General Assembly, https://leg.colorado.gov/bills/sb22-051

79 Washington State Legislature, “HB 1282-2023-24: Requiring Environmental and Labor Reporting for Public Building Construction and Renovation Material,” https://app.leg.wa.gov/billsummary?BillNumber=1282&Initiative=false&Year=2023

80 Illinois Environmental Protection Agency, Climate Pollution Reduction Grants, https://epa.illinois.gov/topics/climate/climate-pollution-reduction-grants.html

81 Smarter NC, “Smart Manufacturing Adoption to Realize Transformative Energy Reductions for North Carolina,” https://ies.ncsu.edu/wp-content/uploads/sites/15/2024/11/SMARTER-NC-Flyer.pdf

82 Commonwealth of Pennsylvania, Department of Environmental Protection, Pennsylvania Industrial Energy Assessment, https://www.pa.gov/services/dep/energy/request-an-energy-efficiency-assessment.html

83 Washington State Department of Commerce, “Buy Clean Buy Fair,” https://www.commerce.wa.gov/seep/bcbf/

UNITED STATES
CLIMATE
ALLIANCE