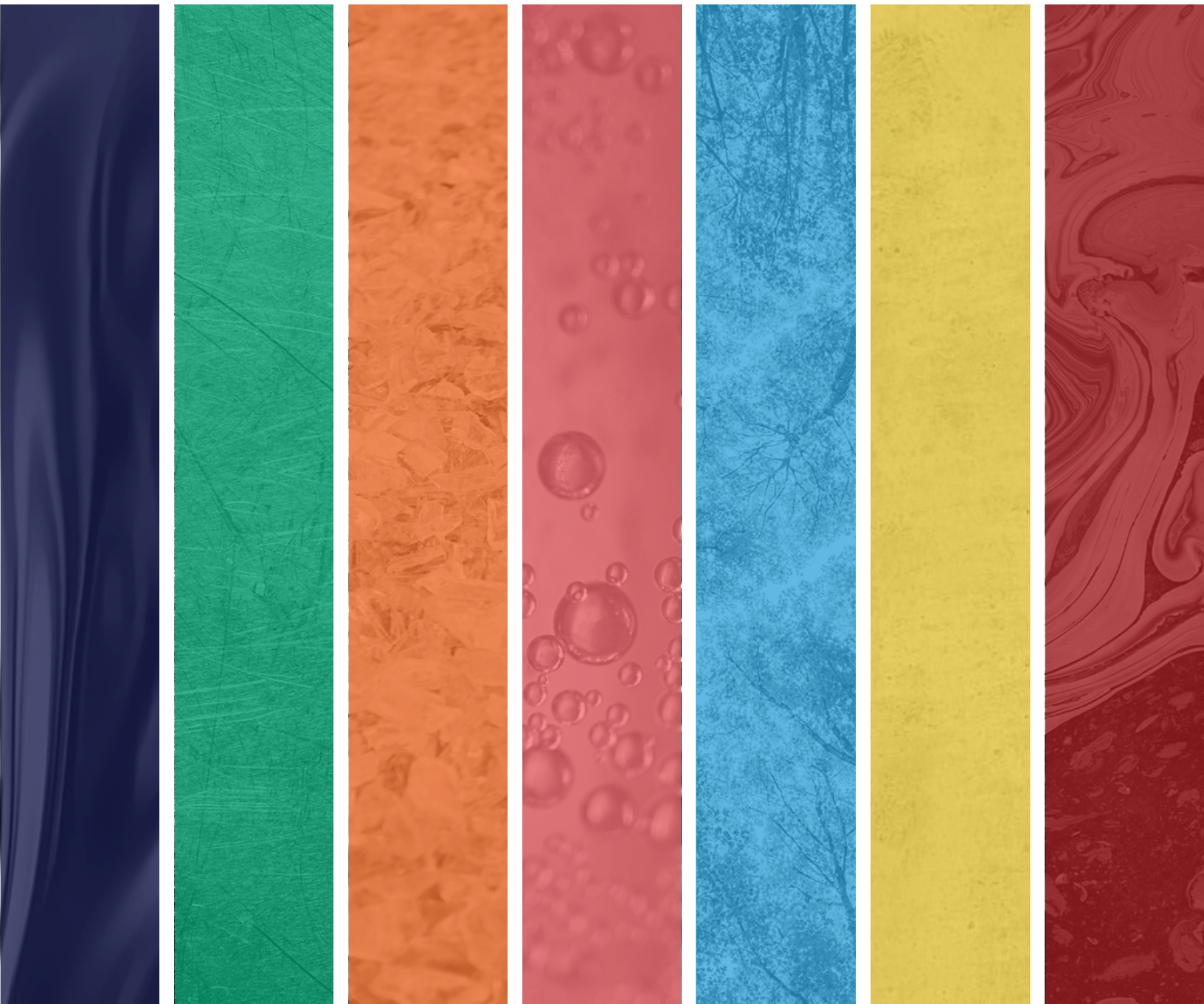
# Planning & Governance



## 2.1 Planning & Governance

**Overview**

State climate planning and governance are essential for creating a policy environment that coordinates and directs the industrial sector's emissions towards zero. Just as in other energy-related sectors, state target-setting, roadmap development, and stakeholder engagement can 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. Although many states have

established sector-specific climate targets, decarbonization roadmaps, and governance structures for power, buildings, and transportation (***Table 2***), largely they have yet to tackle the industrial sector.[f]

**State actions**

Three states have established sector-specific GHG emissions targets for industry: **Colorado** targets a 20 percent emissions reduction below 2015 levels by 2030;[67] **Massachusetts** aims to reduce emissions from industrial energy use and non-GHG emissions 34 percent below 1990 levels by 2025 and 48 percent by 2030;[68] and **Maine** intends to hold its industrial emissions "flat through 2030" and "reduce them" through 2050.[69] **California** is the only state to adopt a GHG goal specific to an industrial sub-sector, aiming to reduce the GHG intensity of cement used in the state 40 percent below 2019 levels by 2035 and achieve net-zero emissions associated with cement use by 2045.[70] However, 15 states have adopted economy-wide net-zero GHG targets, which they are unlikely to achieve without developing policies to reduce industrial GHG emissions.

*Table 2: Examples of state governance, targets, and plans for other non-industrial energy sectors.*

| | Power | Buildings | Transportation |
|---|---|---|---|
| **Governance** | • Connecticut: Distributed Generation Policy Working Group<br>• Delaware: Renewable Energy Taskforce<br>• Illinois: Offshore Wind Energy Economic Development Policy Task Force | • Maryland: Building Energy Transition Implementation Task Force<br>• Massachusetts: Commission on Clean Heat<br>• Oregon: Task Force on Resilient Efficient Buildings | • Colorado: Transportation Electrification Working Group<br>• Michigan: Council on Future Mobility and Electrification<br>• Rhode Island: Mobility Innovation Working Group |
| **Targets** | • New York: 100% zero emissions by 2040<br>• North Carolina: 70% $CO_2$ reduction below 2005 levels by 2030, 100% carbon neutral by 2050<br>• Oregon: 80% GHG reduction by 2030, 90% by 2035, 100% by 2040 | • Massachusetts: 33% GHG reduction below 1990 levels by 2025, 50% by 2030 (residential heating and cooling)<br>• New York: 2 million climate-friendly, electrified, or electrification-ready homes by 2030<br>• New York: 185 TBtu energy use reduction from 2025 forecast | • California: 100% zero-emissions vehicles (new sales of light-duty vehicles) by 2035, 100% zero-emissions vehicles (new sales of medium- and heavy-duty vehicles) by 2045<br>• New Jersey: 330,000 zero emissions vehicles deployed by 2025<br>• North Carolina: 50% zero emissions |

[f] At least ten states have advanced policies to reduce methane from their oil and gas, landfill, and agriculture industries, and 11 states developed regulations to phase out hydrofluorocarbons—both topics outside the scope of this resource. However, states followed similar approaches to get there: they set targets, created working groups and task forces, and developed plans and programs to meet those targets.

| | Power | Buildings | Transportation |
|---|---|---|---|
| | | | vehicles (new sales) by 2030 |
| **Plans** | • Colorado: *Roadmap to 100% Renewable Energy By 2040*<br>• Rhode Island: *The Road to 100% Renewable Electricity by 2030*<br>• Wisconsin: *Clean Energy Plan* | • California: *Building Decarbonization Assessment*<br>• Maryland: *Building Energy Transition Plan*<br>• Massachusetts: *Clean Energy and Climate Plan for 2030 Stretch Code* | • Connecticut: *Electric Vehicle Roadmap for Connecticut*<br>• Maine: *Clean Transportation Roadmap*<br>• Pennsylvania: *Electric Vehicle Roadmap* |

In the past two years, **Louisiana**,[71] **Michigan**,[72] **Washington**,[73] and **Wisconsin**[74] all released climate and energy action plans that made policy recommendations to decarbonize their industrial sectors. Louisiana in particular outlined four strategies and 13 policy actions the state could pursue to enhance industrial efficiency, switch to lower-carbon fuels, and create markets for clean industrial products. Draft climate action plans from **California**,[75] **Minnesota**,[76] and **New York**[77] also indicate a larger focus on industrial solutions than previous iterations, but these are not yet final.

To date, few states have established interagency governance structures dedicated to exploring policy opportunities for industrial decarbonization. Some states have convened stakeholders through topic-specific subcommittees under their climate councils, such as **Michigan**'s Energy Intensive Industries Workgroup,[78] but these tend to be short-lived and cease to function following the release of climate plans. On the other hand, **Maine** established an Industrial Innovation Task Force within its governor's office, which serves as a forum for industrial representatives, government officials, and academics to make recommendations that increase industrial efficiency and reduce GHG emissions.[79]

Other states have developed plans, conducted analyses, and stood up new governance structures that focus on specific industrial decarbonization pillars. For example:

- *Low-carbon fuels & feedstocks*
    - Several states are analyzing opportunities in their state to deploy low-carbon hydrogen, including by establishing new governance structures (e.g., **Washington** Office of Renewable Fuels,[80] **Illinois** Hydrogen Economy Task Force[81]) and commissioning reports and analyses (e.g., **Colorado**,[82] **New Mexico**,[83] **Oregon**[84]).
- *Carbon capture, utilization, and storage (CCUS)*
    - **Colorado**'s Carbon Capture, Utilization and Sequestration Task Force recently released its evaluation of the role CCUS could play in meeting state climate goals.[85]
- *Procurement*
    - Multiple states are investigating opportunities and barriers to reduce the climate impacts of construction materials. For example, **Washington** is

developing and testing a prototype database for reporting environmental and labor information for state construction projects.[86] **Minnesota** is conducting an environmental impact study of construction materials.[87]

**Gaps and opportunities**

While some states have explored the potential for certain low-carbon technologies, most states have not conducted assessments of their industrial sectors' broad efficiency, electrification, and low-carbon fuel opportunities, leaving a gap in baseline knowledge needed for transition planning. Significant physical infrastructure will be needed to transition industry off fossil fuel energy sources and towards electrification, LCFF, CCUS, and other decarbonization strategies. This includes:

- Expanding new renewable generation, transmission, energy storage, and site capabilities (e.g., substations, dynamic sensing/control, demand flexibility, onsite WHR and renewable energy) to deliver low-carbon electricity to meet new industrial demand;

- Building out pipelines, transportation, and storage technology to integrate new LCFF into industrial processes;

- Conducting in-depth supply chain and industrial cluster analysis to identify new opportunities for increasing material efficiency and utilizing process heat (e.g., district heating and cooling); and

- Developing, demonstrating, and installing sensing control systems so industry subsectors with flexible demand that could undertake load shifting can optimize production rates when low-carbon electricity is available and cost effective.

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