

How Do States

Plan To Meet Their

Climate Commitments?

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ABSTRACT

This memo analyzes the trends and comprehensiveness of 2030 state climate action plans. Currently, 18 out of 24 U.S. Climate Alliance states have a draft or final plan to achieve a 2030 greenhouse gas reduction target. To measure the comprehensiveness of these plans, Climate XChange mapped the occurrence rate of close to 50 “Building Blocks” of state climate policy, as defined by Climate Cabinet Education. This exercise revealed that climate action plans driven by a legislative mandate are approximately 13 percent more comprehensive than those driven by executive order. Further, important measures such as indoor air quality standards, disaster preparedness, transparency and benchmarking, and the social cost of carbon are commonly missing from most existing state climate plans.¹

¹ | This analysis was conducted during the Spring of 2021 (January-April). Thus, state climate action plans released after April 2021 are not included in this analysis.

Introduction

In recent months the United States federal government has pivoted back toward climate leadership under the Biden administration. President Biden realigned the U.S. with the Paris Agreement on his first day in office. According to the Intergovernmental Panel on Climate Change (IPCC), to avoid the most severe impacts of the climate crisis and limit planetary warming below 1.5 degrees Celsius, global greenhouse gas emissions must decline 45 percent below 2010 levels by 2030 and reach zero by 2050.²

The Biden administration announced a national greenhouse gas pollution reduction target on April 22nd, 2021 that would achieve a 50–52 percent reduction in U.S. emissions from 2005 levels by 2030.³ Collaboration among various levels of government — federal, state, and local — will be imperative for the U.S. to achieve its national 2030 target.

State governments are a key juncture for climate policy implementation, public spending, and economic transformation. State and local government spending contributed 10.8 percent of the country's GDP in 2017, as opposed to 6.5 percent from federal spending.⁴ State and local governments contributed over three-quarters of public infrastructure spending in 2017, and a majority of federal infrastructure spending is transferred to states through grants and loans. Historically, states have also acted more quickly than the federal government in designing and implementing new climate policies, and in some cases serve as an innovation chamber for future federal practices.⁵ At the same time, state governments are unable to spend budgets at a deficit, and may lack the bureaucratic resources and structure to facilitate the sophisticated transformation that the climate crisis requires.

In response to the Trump administration's withdrawal from the Paris Agreement in 2017, a bipartisan coalition of governors joined the U.S. Climate Alliance, an institutional body that functions to assist states in transitioning effectively to a clean economy.⁶ Twenty-four member states in the Alliance have committed to reducing their states' greenhouse gas emissions to levels consistent with the Paris Agreement. As of April 2021, 18 of the 24 states in the U.S. Climate Alliance have produced a draft or final 2030 State Climate Action Plan.⁷

Yet, a December 2020 report by the Environmental Defense Fund (EDF) finds that virtually every state with a climate commitment has implemented insufficient policies to remain consistent with the IPCC's 1.5°C target.⁸ Therefore, significant policy intervention and planning is needed to achieve the necessary emissions reductions over the next decade and beyond.

This memo is an assessment on how states are planning — rather than how states are implementing — their climate action strategies. There is a difference between government aspiration and government action, but virtually every state government needs to follow the procedural steps of establishing greenhouse gas reduction targets and developing a comprehensive plan to meet that target. Virtually every state with an executive or legislative climate target for 2030 has required such a planning process to properly assemble a sufficient suite of climate policies. Therefore, it is valuable to assess the comprehensiveness of existing state climate action plans, and identify the political forces that may lead to improvements.

2 | IPCC Policy Maker Summary

3 | Fact Sheet: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/>

4 | Ryan Nunn et al., Brookings Institution, "Nine Facts about State and Local Policy," Jan. 2019, <https://www.brookings.edu/research/nine-facts-about-state-and-local-policy/>

5 | World Resources Institute, "Climate Policy in the State Laboratory," 2007. <https://www.wri.org/research/climate-policy-state-laboratory>

6 | US Climate Alliance, <http://www.usclimatealliance.org/>

7 | This number includes draft plans produced by states that are yet to be implemented.

8 | Drew Stilson, Environmental Defense Fund, Turning Climate Commitments into Results (Dec. 2020). https://www.edf.org/sites/default/files/documents/FINAL_State%20Emission%20Gap%20Analysis.pdf

Overview

Climate XChange analyzed 18 different state climate action plans for 2030, using the Climate Cabinet Education’s “Building Blocks of State Climate Policy.”⁹ Climate Cabinet Education’s framework provides close to 50 policy options, or priority Building Blocks, that address both sector-specific and economy-wide emissions, as well as equity, adaptation and resilience, and fossil fuel production.

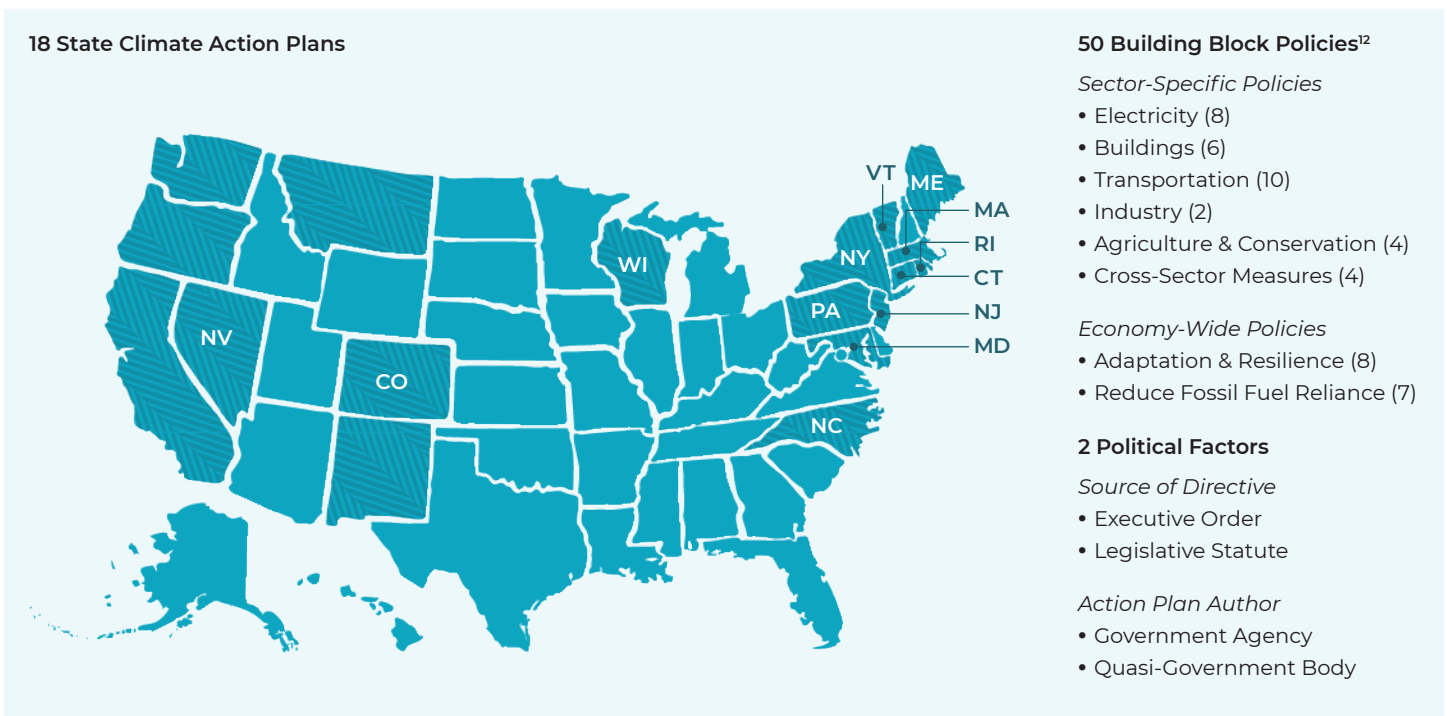
This memo measures the “comprehensiveness” of a state climate action plan by the number of Building Block policies included.¹⁰ Each Building Block was also examined for its occurrence rate among existing state plans, in order to assess what climate policies are considered conventional in the state policy arena and which are yet to experience notable adoption.¹¹

This analysis also tracks two key political factors that may influence the occurrence rate of Building Block policies:

- 1 | action plan authorship (which can be either governmental or quasi-governmental), and
- 2 | the political source of climate action (which can be either executive order or legislative statute).

This exercise examined both final and released drafts of government- and quasi-government-produced 2030 climate action plans for the 18 states with plans released before May 2021.

Moving forward, states will need to legislate 2030 climate plans and learn best practices from one another. The following sections discuss the major policy patterns revealed by the study data.



⁹ | Climate Cabinet Education, “Building Blocks of State Climate Policy,” <https://www.climatecabineteducation.org/building-blocks-of-state-climate-policy>

¹⁰ | “State climate action plans” is used as a term of art in this study. States use a variety of alternative names when planning policy actions on climate, energy, or resilience, including climate strategies, reports, or roadmaps.

¹¹ | This study does not assess the “quality” of each individual policy as written in a state climate action plan. Thus, a state climate action plan may include a high number of Building Block policies, but lack ambition, equity, or other contextual factors that indicate the policy is of high quality.

¹² | The number of Building Block policies within each category is included in parentheses. Some Building Block policies were combined in our analysis. For a full list of Building Block policies analyzed, see the Appendix.

Key Findings

The data suggests that the political directive behind a state’s greenhouse gas emissions reduction mandate – executive or legislative – may affect the comprehensiveness of the plan, measured as the percent of Building Block policies included. The data also suggests that a small core of Building Blocks are now universal and foundational measures for any state climate action plan, but alone are not nearly sufficient. Other key Building Blocks identified by Climate Cabinet Education are strikingly uncommon in state climate plans.

LEGISLATIVE DIRECTIVES LEAD TO MORE COMPREHENSIVE CLIMATE PLANS

The analysis revealed a disparity in the comprehensiveness of climate action strategies among states. States with climate ambition driven by legislative statute have more comprehensive climate action plans than states driven by executive order alone.

As shown in Table 3.1, states driven by executive order alone included, on average, 31 out of 49 Building Block policies. By comparison, states with legislative mandates included, on average, 35 out of 49 Building Block policies, meaning they are 13 percent more comprehensive than plans driven by executive orders.

Table 3.1 Comprehensiveness of Climate Action Plans by Source

Type of Mandate	Average Number of Building Blocks	Number of States
Executive	31.3	8
Legislative	35.3	10

These trends persisted regardless of whether the author of the state climate action plan was a quasi-government body (such as a climate action council) or an official state agency (such

as an energy or environmental office). Nearly every climate action plan authored by a quasi-government body was compelled by executive order, while state agencies tend to author climate plans compelled by legislation.

There are several potential drivers behind this disparity in the number of policies, such as enforceability and accountability. Executive action is non-binding and can change with administrations, which may leave little legal pressure on a quasi-governmental body to author a climate plan with a sufficient number of policy interventions. By comparison, legislative mandates are non-voluntary, and a governor may risk court intervention should their climate plan not include a sufficient number of policy interventions to achieve a mandated greenhouse gas target. With heightened incentives, more opportunity for public engagement, and increased time and dedicated personnel, passing legislative mandates is a powerful force in state climate action.

A majority of Building Block policies had similar or identical rates of occurrence across both legislative and executive-driven climate action plans. Of note, quasi-governmental climate plans were significantly more likely than state agencies to acknowledge indoor air quality standards. However, they were significantly less likely than state agencies to include the following policies in their climate action plans:

- Industrial Emissions Standards
- Buy-Clean Standards
- Utility Social Cost of Carbon
- Smart Growth Transportation Planning
- Property Assessed Clean Energy (PACE) Programs
- Coastal Ecosystem Protection
- Equitable Relocation

In other words, these seven policies are most commonly left out when states rely on executive orders to drive climate action plans, rather than legislative mandates.

MOST COMMON BUILDING BLOCKS OF STATE CLIMATE POLICY

While specific approaches to climate action vary, there are standard practices shared among states planning to decarbonize, specifically, eight Building Blocks that appeared in virtually every state climate action plan (≥ 94 percent occurrence rate). Rather than a complete toolkit, these policies represent what has become “conventional” in state climate policy. They may represent highly accessible policies for new states to begin with, since they are universally considered across geographic and political conditions and have a greater number of case studies to follow.

The most common Building Blocks seen in Table 3.2 encapsulate the types of policies that most, if not all states work to include as components

of their climate action plans. On average, state climate action plans included 68 percent of the 49 policy Building Blocks, thus most often include far more than just these eight policies.

Although not included in Table 3.2 above, nearly every state takes a multipronged and contextual approach to climate finance. This may include various forms of climate finance mechanisms such as green banks, revolving loans, property assessed clean energy (PACE) programs, or other financial tools.

These policies may be demonstrating policy convergence, which is a phenomenon where a policy increases in adoption rate and uniformity across different state governments over time.

Table 3.2 Description of Most Common Building Blocks

Policy	Description	Frequency of Observation
Renewable Portfolio Standards	Sets benchmarks for the generation of renewable or clean electricity statewide	100%
Energy Efficiency	Promotes energy savings	100%
Building Energy Performance Standards	Establishes long term goals to reduce building energy consumption or greenhouse gas emissions	100%
Transportation Electrification Plans	Charges states and utilities to prepare for and advance electric vehicle adoption in their service area	94%
Expand Electric Vehicle (EV) Infrastructure	Increases public investment in EV infrastructure to encourage EV adoption and minimize range anxiety	94%
Waste Reduction	Discourages food waste and associated emissions, promote composting	94%
Support Local Governments in Resilience and Disaster Planning	Provides resources and education to local governments to help prepare their communities for climate-related disasters	94%
Natural & Working Land Management	Conserves existing public lands and forests to sequester carbon, increase biodiversity and resilience, and provide tourism opportunities	94%

AREAS FOR IMPROVEMENT AND FUTURE FOCUS

Climate plans are deeply multifaceted and vary by state context, however some Climate Cabinet Education Building Blocks are frequently missing in U.S. Climate Alliance state plans. The most infrequent policies in climate action plans include indoor air quality standards, disaster preparedness measures, social cost of carbon (SCC) analysis, and benchmarking and transparency procedures.

Indoor Air Quality Standards

Less than half (8) of the states examined mention indoor air quality (IAQ) standards, which play a critical role in reducing greenhouse gas emissions in the building sector and limiting harmful co-pollutant exposure. According to the EPA, the average American spends close to 90 percent of their lifetime indoors, so improving indoor air quality policies can function jointly as a climate solution and to protect public health.¹³ Additionally, since the use of coal has significantly diminished in the U.S., studies show that residential and commercial heating has become a major source of local health impacts from air pollution.¹⁴

Disaster Preparedness and Response Measures

Natural disasters are a key climate concern for state governments, who have limited capital budgets to respond and recover from extreme weather events of increasing frequency and intensity. North Carolina is the only state whose climate plan included comprehensive tracking of disaster spending. Despite North Carolina being uniquely impacted by higher hurricane risk among U.S. Climate Alliance states, every state is vulnerable to climate risk. States can better prepare for climate-related disasters in the future by having transparent disaster spending tracking and preparedness, response, and recovery measures in place.

Social Cost of Carbon (SCC)

Despite its high impact potential and ability to improve climate policy decisions, the social cost of carbon (SCC) was only mentioned in half (9) of climate plans. The SCC is an estimate of the economic damages that result from every additional metric ton of greenhouse gases emitted into the atmosphere.¹⁵ By quantifying the social implications of pollution, decision-makers can properly compare the benefits of a given policy or project to its social costs, which alters the public accounting calculus in favor of climate action.

The SCC is most commonly used by Public Utilities Commissions (PUCs) to inform the cost-benefit of energy-related projects. The SCC has also been restored by the Biden administration back into federal policy analysis at a level of \$51 per metric ton of CO₂ equivalent, after being significantly diluted by the previous administration.¹⁶ Other studies have identified an SCC upwards of \$417.¹⁷

Benchmarking and Transparency Requirements

While nearly every state studied had incorporated Building Energy Performance Standards (BEPS) into their climate strategies, most of them have yet to commit to transparency and benchmarking requirements.¹⁸ Although initially designed as a building sector-specific policy, these requirements can often apply to entire greenhouse gas emissions inventories.

Reporting sector-specific or economy-wide greenhouse gas footprints, establishing a benchmark, and subsequently setting future targets are logical and necessary steps in a state's decarbonization journey. Implementing effective benchmarking and transparency requirements is critical for establishing informed greenhouse gas emission reduction trajectories, encouraging accountability, and inviting public feedback — all of which are important to a state's climate strategy's ultimate success.

13 | Paula Schenck et al., "Climate Change, Indoor Air Quality and Health," University of Connecticut Health Center. August 2010, https://www.epa.gov/sites/production/files/2014-08/documents/uconn_climate_health.pdf

14 | Rocky Mountain Institute, "The Impact of Fossil Fuels in Buildings," 2019, <https://rmi.org/insight/the-impact-of-fossil-fuels-in-buildings/>

15 | Resources for the Future, "Social Cost of Carbon 101," August 2019. <https://www.rff.org/publications/explainers/social-cost-carbon-101/>

16 | Christian Morris, "President Biden Increased The Social Cost Of Carbon, But Is It Enough?" March 2021, <https://climate-xchange.org/2021/03/04/president-biden-increased-the-social-cost-of-carbon-but-is-it-enough/>

17 | Ricke, K., Drouet, L., Caldeira, K. et al. Country-level social cost of carbon. *Nature Clim Change* 8, 895–900 (2018). <https://doi.org/10.1038/s41558-018-0282-y>

18 | A transparency requirement refers to a state's explicit commitment to publicly disclose its own assessment of statewide or sector-specific greenhouse gas inventories, as well as report its progress over time.

What's Next?

States have an immense opportunity to tackle the climate crisis, revitalize the economy, and advance justice through climate action. This memo is an assessment on how states are planning – rather than how states are implementing – their climate action strategies. There is an important distinction between climate action plans and practice, but, in the end, plans that set targets, limits, and timelines are an essential start. States must swiftly implement policies that result in quantifiable reductions in greenhouse gas emissions consistent with achieving climate commitments across all levels of government.

Future research opportunities to build on this work may include identifying additional factors or drivers behind the variance in state climate plans' comprehensiveness, including state energy mix, fossil fuel corporate influence, decision making structures, and political conditions of the legislature and/or executive office. Additional work is also needed to constantly re-assess climate plans for their ambition and equity, which is beyond the scope of this research.

It will be necessary for states to find what fits the needs of their communities, economies, and ecosystems. Moving forward, 2030 greenhouse gas emissions reduction targets and comprehensive climate action plans must be legislated, produced, and continually updated to ensure an equitable transition ahead.

2020

2030

2040

2050

Appendix

BUILDING BLOCKS OF STATE CLIMATE POLICY

Below is a list of Building Block policies used in this study, as derived from Climate Cabinet Education:

Sector	Building Block Policy	Sector	Building Block Policy		
Industry (22%)	<ul style="list-style-type: none"> Industrial Emissions Standards Buy-Clean Standard 	Ag. & Conservation (10%)	<ul style="list-style-type: none"> Waste Reduction Public Working Lands and Green Spaces Protect Coastal Ecosystems *Support “Regenerative” Agriculture 		
	Electricity (27%)		<ul style="list-style-type: none"> Renewable Portfolio Standards Upgrading Transmission, Distribution & Storage Streamline Renewable Energy Project Permitting Energy Efficiency Net Metering Utility Incentives Social Cost of Carbon Intervenor Compensation Programs (ICPs) 	Cross-Sector	<ul style="list-style-type: none"> ***Property Assessed Clean Energy (PACE) Programs Energy Savings Performance Contracts “Revolving” Loan Funds Fund Research & Development (R&D)
Buildings (12%)			<ul style="list-style-type: none"> Energy Codes Building Energy Performance Standards “Stretch” Codes *Ensure Buildings are EV & Solar ready Appliance Efficiency Standards Benchmarking & Transparency Requirements 		Economy-Wide Policies
		Transportation (28%)	<ul style="list-style-type: none"> Advanced Clean Cars Program Transportation Climate Initiative Electrification Plans Medium & Heavy Duty Electrification Green Fleets Low Carbon Fuel Standards Remove barriers to EV charging installations Expand EV Infrastructure Expand & Electrify Public Transit / Rail Smart Growth 		Adaptation & Resilience
			Reduce Fossil Fuel Reliance	<ul style="list-style-type: none"> Greenhouse Gas Reduction Targets Limit or Eliminate New Fossil Fuel Generation Securitization Minimum Statewide Drilling Setbacks Carbon Pricing Mechanism Remove Fossil Fuel Subsidies Accountable to Climate Action 	

STATE CLIMATE ACTION PLANS

Below is the embedded link to each state's climate plan used for this analysis. New climate plans published as of May 2021 are not included in this study.

State	Plan Author	Source of Directive	Number of Building Block Policies		Plan Status
			Included	Year Released	
California	Governor	Legislative	38	2017	Final
Colorado	Governor	Legislative	35	2021	Final
Connecticut	Quasi-Gov	Legislative	35	2018	Final
Maine	Quasi-Gov	Legislative	31	2020	Final
Maryland	Governor	Legislative	39	2021	Final
Massachusetts	Governor	Legislative	34	2020	Draft
Montana	Quasi-Gov	Executive	32	2020	Final
Nevada	Quasi-Gov	Executive	35	2020	Final
New Jersey	Governor	Legislative	33	2019	Final
New Mexico	Governor	Executive	31	2019	Final
New York	Quasi-Gov	Executive	42	2010	Final
North Carolina	Governor	Executive	29	2019	Final
Oregon	Governor	Executive	18	2020	Draft
Pennsylvania	Governor	Legislative	37	2019	Final
Rhode Island	Quasi-Gov	Legislative	31	2016	Final
Vermont	Quasi-Gov	Executive	29	2018	Final
Washington	Governor	Legislative	40	2020	Final
Wisconsin	Quasi-Gov	Legislative	34	2020	Final