

U.S. Emissions Pathways through 2050 with State-Level Targets

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After a second withdrawal from the Paris Agreement in 2026,¹ the United States no longer has an official Nationally Determined Contribution (NDC) for 2035 in place. This withdrawal has been accompanied by changes in many federal policies and programs that drive emissions reductions, including clean energy incentives established under the Inflation Reduction Act (IRA)² and other greenhouse gas (GHG) regulations,³ along with a shift in federal government priorities toward fossil fuel expansion. These changes impact the ability of the United States to achieve the previously communicated NDC of a 61-66% reduction in net GHG emissions below 2005 levels by 2035.⁴ Nonetheless, achieving U.S. net-zero emissions by 2050 will remain critical to the long-term efforts to limit global warming to well below 2°C above preindustrial levels. Some federal policies remain in place and continued policy actions from subnational governments, such as states and cities, continue to drive deployment of clean energy technologies and to support other actions that reduce emissions.^{5,6} In addition, the rapid reductions in clean technology costs, combined with higher than anticipated fossil fuel prices, are accelerating the energy transition.⁷⁻⁹

In this context, state-level action represents a significant source of continued U.S. climate action. In the U.S. federal system, states possess substantial policy authority and have historically played a central role in driving U.S. decarbonization, with sustained efforts in the electricity sector, buildings, and other sectors. Across the country, half of the states have established their own economy-wide greenhouse gas targets that could lead to substantial emissions reductions over the next decades. Nineteen states have established 2030 or 2031 goals, calling for emissions reductions of 40-60% from their respective baseline years, and twenty-one states have targets extending to 2045 or 2050, ranging from commitments to deep emissions reductions to carbon-negative goals.¹⁰ In this study, we assess the aggregate ambition represented by these existing state-level commitments.

State Decarbonization Targets Across the U.S.

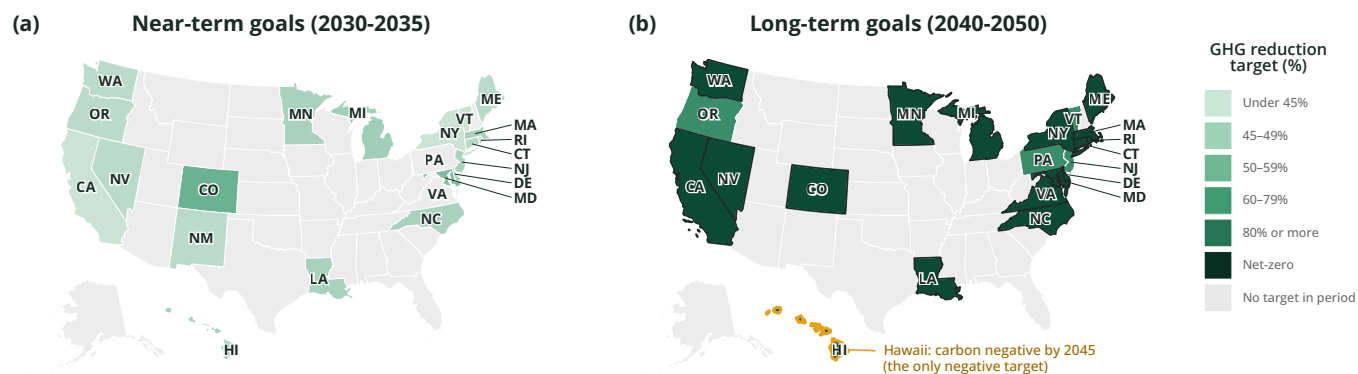


Figure 1. State-level GHG reduction targets. Panel (a) shows states with near-term targets (2030-2035), and panel (b) shows states with long-term targets (2040-2050). Percentage reductions are relative to each state’s respective baseline year, which varies across states. If a state has multiple targets within a given period (e.g., Colorado), the most ambitious target is shown. Hawaii is highlighted in yellow, as it is the only state with a carbon-negative goal.

More specifically, in this analysis, we explore the following question: in the absence of an official U.S. 2035 NDC, what is the aggregate emissions reduction reflected by existing state-level GHG targets? We utilize a field-leading, open-source, economy-wide integrated assessment model with subnational details of the U.S. (GCAM-USA-CGS) to assess two scenarios. Building on previous work,⁶ we explicitly represent current federal and non-federal U.S. climate policies in the Current Policies scenario. This scenario includes recent federal rollbacks and assumes existing non-federal policies (e.g., renewable portfolio standards, building energy efficiency standards) continue without further strengthening. Then, we develop the State Climate Goals scenario using the Current Policies scenario as a baseline, and add all state-level GHG emissions targets on top of that. State GHG targets are drawn from Climate XChange’s state climate policy dashboard and include all economy-wide targets set through statute or executive order, excluding voluntary goals.¹⁰ We implement these targets in the model by constraining state-level CO₂ emissions and adjusting non-CO₂ emissions exogenously. The State Climate Goals scenario shows the aggregate emissions reductions reflected in fully achieving state-level GHG targets, while not directly assessing the feasibility of these targets or the potential for additional reductions in states without a GHG target (beyond their current policies).

We find that the existing state-level GHG targets reflect significant additional emissions reductions beyond the current policies.

- Under the *State Climate Goals* scenario, the United States reaches 43% emissions reductions by 2035 relative to 2005 levels, and 68% by 2050.
- This contrasts with the *Current Policies* trajectory, where non-federal actors continue to implement, but do not strengthen, existing policies. The United States achieves a 35% GHG emissions reduction relative to 2005 levels by 2035 and 49% by 2050. (Figure 2).

U.S. GHG Emissions by Scenario

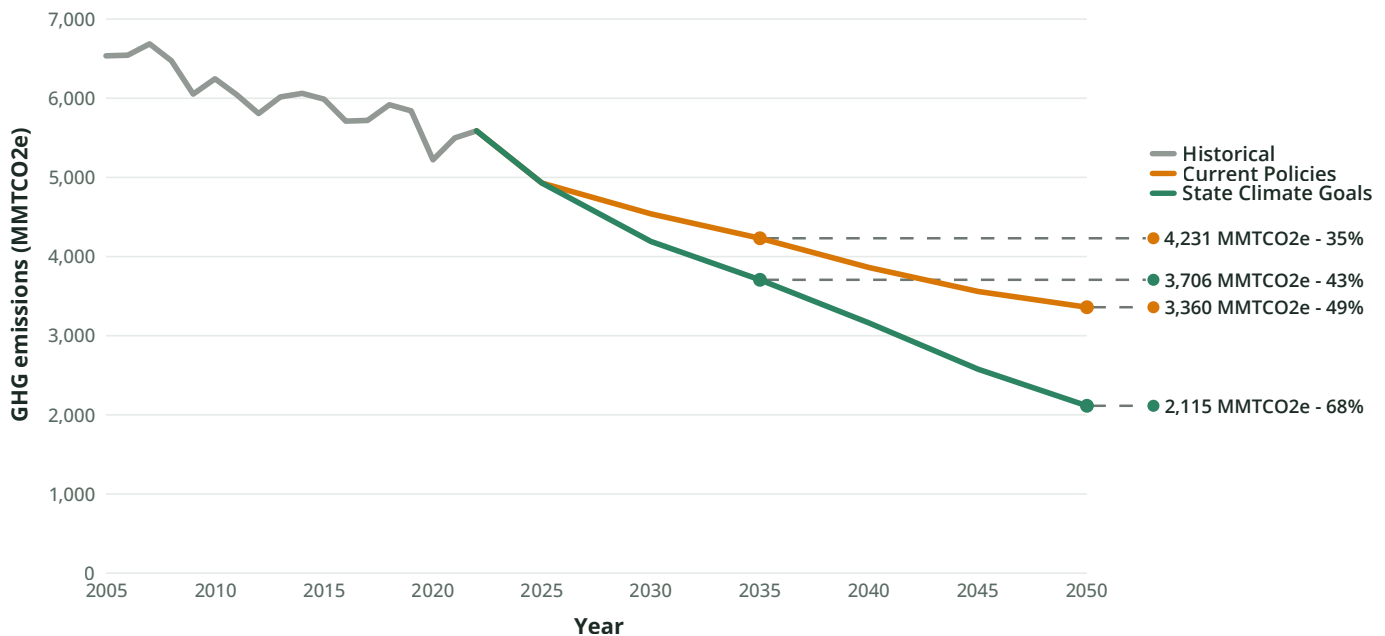


Figure 2. U.S. National GHG Emissions through 2050. Historical emissions were sourced from the 2022 Environmental Protection Agency (EPA) GHG Inventory.¹¹ From 2023 onward, the Current Policies scenario achieves 49% reductions in 2050 relative to 2005 emissions, while the State Climate Goals scenario achieves 68% reductions.

These results highlight the potential for existing, already established state-level climate targets to advance U.S. decarbonization, supporting broader CGS work on the impacts of subnational action in the United States.^{6,12} However, while states have made meaningful mitigation efforts,¹³ many still face significant gaps between current policy trajectories and their climate targets,¹⁴ emphasizing the need for additional policy action, finance, and implementation. Moreover, half of U.S. states have yet to establish economy-wide GHG targets, and many lack any type of climate policy, presenting further challenges for broader adoption of climate action without federal support. At the same time, additional emissions reductions beyond current policies remain possible for these states, driven by multi-objective policies such as energy affordability and public health, and low-cost clean technologies. While uncertainties remain around the future federal policy environment and the potential for broader policy adoption across states, existing state-level climate commitments, if fully implemented over the coming decades, can nevertheless play a key role in delivering on the national net-zero goal.

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