



U.S. Climate Pathways for 2035 with Strong Non-Federal Leadership

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The 2024 general election in the United States will shift the Executive and Legislative leadership and agendas, including potential impacts on federal climate action. Precedent under President-elect Trump’s previous term and stated targets in policy planning documents¹ imply a range of possible outcomes, from federal inaction of new climate policies through at least 2028 to extensive rollbacks of existing climate regulations and legislation.

Meanwhile, the transition to clean energy and a low-carbon economy is gaining momentum in the United States, with enhanced non-federal climate leadership, strong market forces, rapidly growing investments, and widespread societal benefits. While there is no replacement for strong federal climate leadership, accelerated action from non-federal actors – including states, cities, tribes, counties, businesses, and universities – can help bridge the gap left in the face of uncertain federal action and build progress toward the global climate goals needed to mitigate the worst impacts of climate change.

In this analysis, we assess U.S. climate pathways for 2035 across a range of federal climate ambitions with continued and enhanced non-federal climate action. Subnational governments, in particular, play an important role in passing and implementing climate policies. U.S. state governments have considerable authority over the transportation and electricity sectors, while cities and counties often have the power to pass building codes, implement zoning ordinances, and determine land use.² Under the first Trump administration’s rollbacks to federal policy and rulemaking, non-federal actors pledged to take new actions,^{3,4} ratcheted up existing policies,⁵ and formed coalitions to unify their efforts.^{6,7} Existing studies show that these types of climate actions from subnational governments and other non-federal actors are essential and can contribute substantially toward near-term emissions reductions in the United States.^{2,8,9}

Summary of findings

- This analysis finds that with strong leadership by non-federal actors, the United States could achieve 54-62% greenhouse gas (GHG) emissions reductions relative to 2005 levels by 2035 across a range of federal climate ambitions (Figure 1). The reduction range reflects uncertainties in federal climate action, from an extensive rollback of existing policies as the lower bound of the range to a temporary freeze followed by re-engagement in the next administration as the upper bound.
- Enhanced actions from non-federal actors have the potential to counteract much of the impacts of federal inactions or rollbacks, including widespread adoption of state-level renewable and clean electricity targets, California’s EV sales targets, vehicle miles traveled reduction policies, building efficiency and electrification standards, industry carbon capture and sequestration targets, oil and gas methane intensity standards, and increased waste diversion efforts.
- Our earlier analysis shows a 65-67% reduction by 2035 under enhanced actions across all of society, including federal policies, along with the achievement of critical targets in clean electricity and oil and gas methane abatement.

Net Greenhouse Gas Emissions (MtCO₂e)

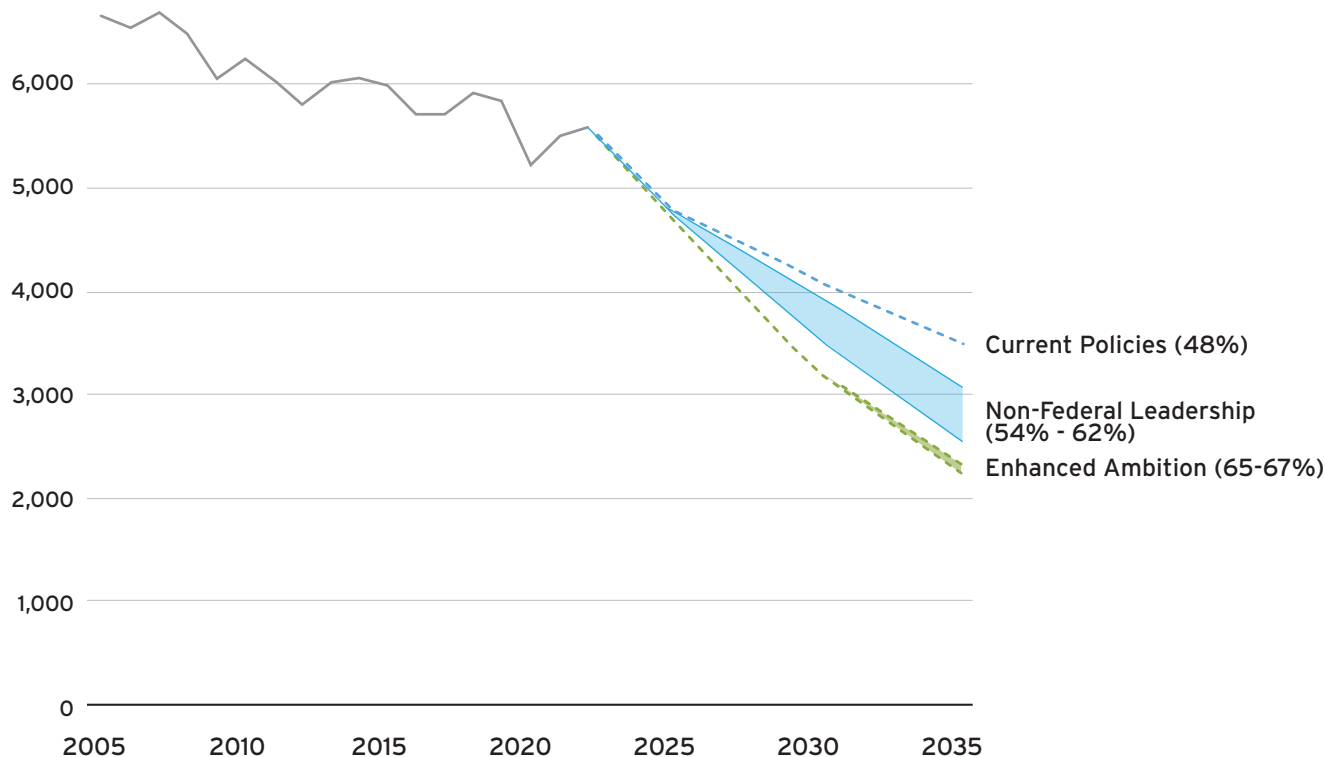


FIGURE 1. GHG emissions across scenarios. Across a range of federal climate ambitions, enhanced non-federal action can achieve 54-62% GHG emissions reductions relative to 2005 levels by 2035. The *Current Policies* and *Enhanced Ambition* scenarios are from a previous report and achieve 48% and 65-67% reductions by 2035, respectively.¹⁰ Historical emissions data are taken from the EPA's 2021 greenhouse gas inventory, which uses the 100-year global warming potential to convert non-CO₂ gases into CO₂ equivalent.¹¹

2035 emissions reductions in the United States Climate Alliance states

The United States Climate Alliance (USCA) is a bipartisan group of 24 governors that have committed to achieving the Paris Agreement climate goals.¹² Together, these states and territories represent 54% of the U.S. population and 57% of the U.S. economy, and have the potential to make significant progress in reducing GHG emissions. This analysis finds that across the modeled scenarios, USCA states in aggregate can achieve GHG emissions reductions between 60-66% below 2005 by 2035, higher than the national range of 54-62% due to stronger climate action in these states (see section 3 and section 5 in *Technical Appendix*).

To estimate GHG emissions in 2035 for USCA states, state-level energy CO₂ emissions data from the modeled scenarios were used. Non-CO₂ and land use, land-use change, and forestry (LULUCF) CO₂ emissions data in the modeled scenarios were calculated exogenously at the national level; to estimate state-level non-CO₂ and LULUCF CO₂ emissions in 2035, the 2022 distribution of emissions across states was applied to the projected 2035 national emissions for each emissions species.¹³


Scenario design

Our earlier analysis developed the *Current Policies* and *Enhanced Ambition* scenarios.¹⁰ The *Current Policies* scenario includes on-the-books actions from federal and non-federal actors, and the *Enhanced Ambition* scenarios include new and expanded policies from these actors.

This study builds upon the earlier analysis and presents a suite of scenarios covering a range of federal climate ambitions coupled with enhanced climate action by non-federal actors in the United States.

- **The range of possible federal climate ambitions reflects uncertainties regarding both existing and new federal climate legislation and regulations**, from extensive rollbacks of existing policies as the lower bound of the ambition range to a temporary freeze followed by re-engagement of federal policy as the upper bound (Table 1).
- **Enhanced non-federal actions are assumed across all scenarios, with strong leadership from subnational governments and other non-federal actors.** These include enhanced state-level renewable and clean electricity targets, widespread adoption of California’s EV sales targets, vehicle miles traveled reduction policies, strengthened building efficiency and electrification standards, industry carbon capture and sequestration targets, oil and gas methane intensity standards, and increased waste diversion efforts. While only state-level policies are explicitly modeled in this study, supportive actions from other non-federal actors are assumed.

TABLE 1. Scenario design with varying levels of federal ambition.

Federal Ambition		Non-Federal Ambition
Low ambition  High ambition	Existing regulations + legislation repealed after 2025	Enhanced policies
	Existing regulations repealed after 2025	
	Freeze: existing policies maintained	
	Re-engagement: existing policies maintained + enhanced policies after 2028*	

*Implemented in model period 2031-2035 due to the five-year interval in the model.

Enhanced non-federal actions can occur due to a combination of market momentum, widespread adoption of ambitious state-level climate policies, and increased action from cities, businesses, and other non-federal actors, especially in states that do not currently have ambitious climate policies. For example, while Texas lacks ambitious climate policies, the city of Austin has a 2020 Climate Equity Plan that provides a multi-sectoral decarbonization blueprint for reaching its 2040 net-zero target. The plan establishes one of the most ambitious renewable portfolio standards (RPS) in the country, targeting 65% renewable electricity by 2027.¹⁴ Additionally, the plan has a goal of electrifying 40% of total vehicle miles by 2030, which has been accompanied by an ordinance that relaxes zoning requirements to encourage installation of charging stations.¹⁵ The city has also updated its codes,¹⁶ worked with their gas provider to reduce leaks, and is establishing a refrigerant destruction program to reduce emissions.¹⁷ See the implementation pathways section in our previous report for additional examples of strong non-federal leadership.¹⁰

BOX 1. Methane's contribution to near-term U.S. reductions

Methane (CH₄) has a high greenhouse warming impact per molecule and short atmospheric lifetime compared with CO₂ emissions, and can therefore contribute substantially to near-term GHG reductions. Over a 100-year time horizon, methane has a global warming potential (GWP) of 28, which means that it is 28 times more potent of a greenhouse gas than CO₂. By convention, the 100-year is used in country-level emissions accounting. However, methane is much more potent in the near term, with a 20-year GWP of 84, meaning that it is 84 times more potent than CO₂ on a 20-year time horizon. Additionally, U.S. methane emissions, particularly from the oil and gas sector, are known to be underestimated.¹⁸⁻²¹

If methane emissions reductions are estimated using its 20-year GWP, as well as a higher oil and gas methane baseline (using the International Energy Agency's inventory²²), methane becomes a more important contributor to overall GHG emissions reductions between 2020 and 2035 (Figure 2).

Methane's Contribution to Total GHG Emissions Reductions 2020-2035 under Different Assumptions

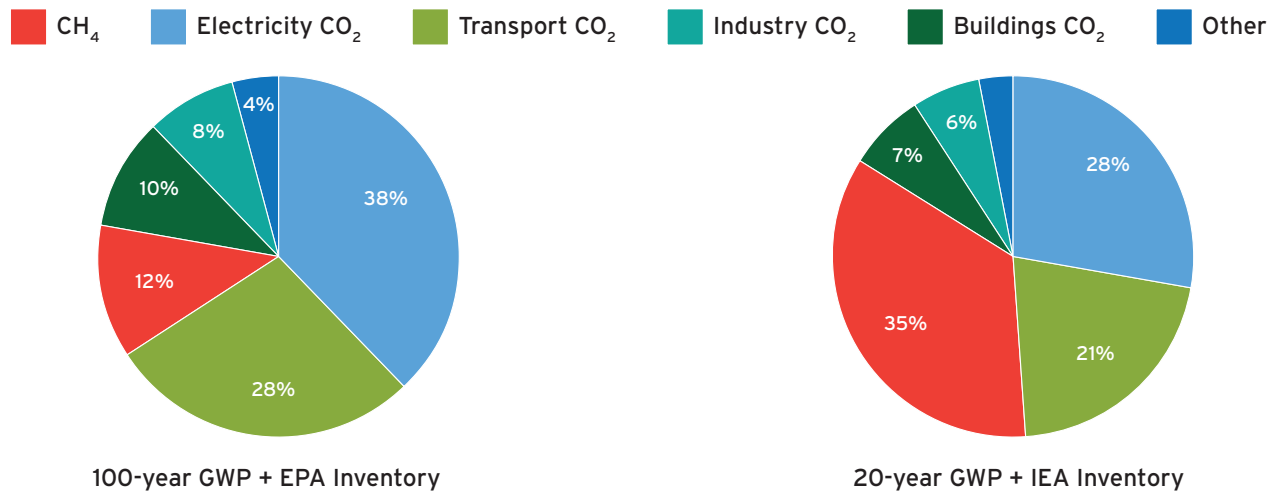


FIGURE 2. Sectoral contribution to GHG emissions reductions under the federal re-engagement scenario (upper bound of federal ambition range), with different assumptions around methane. In the pie chart on the left, methane emissions are calculated based on the EPA inventory, and its 100-year GWP is used to convert methane into units of CO₂e.¹¹ In the pie chart on the right, methane emissions are calculated based on the International Energy Agency's inventory²², which has a higher oil and gas emissions baseline, and its 20-year GWP is used to convert methane emissions into units of CO₂e.

Conclusion

This policy brief provides an initial analysis to assess emissions pathways toward 2035 in the U.S. under varying levels of federal climate ambition. We find that expanded policies from non-federal actors are critical for achieving U.S. climate targets, and have the potential to bolster GHG emissions reductions, accelerate the clean energy transition, and maintain the momentum of U.S. climate action despite uncertainties in federal leadership. As the future of the U.S. climate policy landscape unfolds and the durability of various federal policies (such as the IRA, BIL, and EPA's rules on fossil fuel power plants and tailpipe emissions) becomes more clear, a forthcoming analysis will update our assumptions accordingly and further explore the roles that non-federal actors can play.

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