

CLIMATE POLICY

Can U.S. states and cities overcome Paris exit?

Emissions will keep declining, but likely not enough for the United States to meet 2025 goal

By Warren Cornwall

President Donald Trump's announcement that his administration will withdraw from the Paris climate agreement has sent researchers scrambling for their calculators.

While political analysts assess the diplomatic and domestic fallout from the decision by the world's second largest emitter of greenhouse gases to exit the deal, researchers are trying to determine just how much Trump's decision to abandon the accord and roll back climate regulations will damage efforts to cut U.S. carbon emissions.

A new alliance of states, cities, and corporations has already vowed to help the United States meet the Paris reduction targets promised by former President Barack Obama, even without Trump's help. "Americans don't need Washington to meet our Paris commitment, and Americans are not going to let Washington stand in the way of fulfilling it," said former New York City Mayor Michael Bloomberg, whose foundation is coordinating the alliance, which is one of several initiatives. But the numbers suggest that the best efforts of these smaller actors might well fall short.

Under the nonbinding deal reached in 2015, the United States promised to meet two key benchmarks: By 2020, reduce emissions to 17% below 2005 levels; then cut deeper—26% to 28%—by 2025. Those cuts were considered a down payment on the much bigger emission reductions that scien-

tists say are needed starting in the 2030s to keep planetary warming below the 2°C ceiling that many consider safe (*Science*, 27 November 2015, p. 1018).

The United States could come close to hitting its 2020 goal even if Trump succeeds in undoing many Obama-era climate policies, including efforts to reduce emissions from coal-fired power plants. That's according to a 24 May analysis by the Rhodium Group, a consulting firm headquartered in New York City (see graph, below). Its forecast finds that U.S. emissions will decline through 2020, by 15% to 16%, largely because of a shift away from coal to cheaper and cleaner natural gas to produce electricity, and the growing use of renewable energy sources.

But reaching the 2025 cut—which many analysts had already concluded would be a stretch even with Obama's policies—might be out of reach if Trump gets his way. In the early 2020s, U.S. emissions will likely flatten out at between 14% and 19% below 2005 levels, the analysis finds, well short of the goal. Even those numbers could prove optimistic if Trump rolls back vehicle fuel efficiency rules set to take effect in the 2020s, or eliminates new limits on releases of methane, a potent warming gas, from the oil and gas industry. Emissions could also drop further, or even rise, depending on economic growth, technology, and energy markets, Rhodium finds.

Could collective action by states and cities change the outlook? The major players include California, New York, and Washington,

which together produce nearly one-quarter of U.S. economic activity; California also sets regulations that often become de facto national standards. The states and cities that so far have joined reduction initiatives together produced roughly 22% of overall U.S. greenhouse gas emissions in 2014, according to an analysis by Elizabeth Sawin, co-director of Climate Interactive, a Washington, D.C. nonprofit that analyzes climate policies.

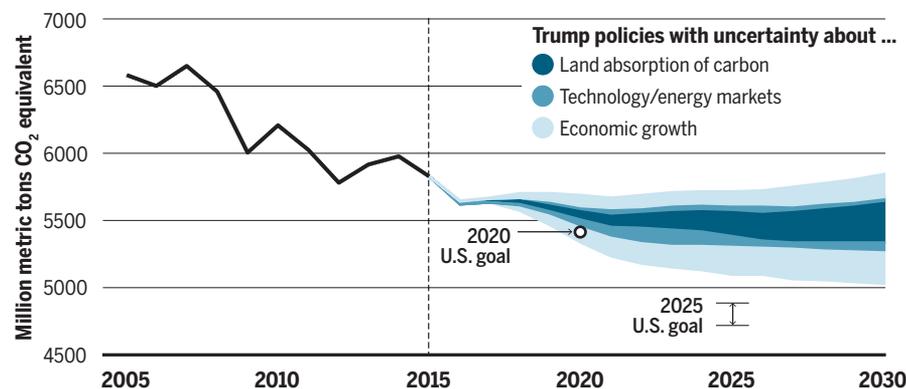
The moves by these subnational actors are "certainly encouraging," says Trevor Houser, an author of the Rhodium report and a former adviser to Hillary Clinton's presidential campaign. But they face a steep challenge in making up for the Paris exit. The Rhodium analysis, for instance, already counts existing state and local policies, including California's 2016 law calling for a 40% carbon emissions cut below 1990 levels by 2030. That's the steepest state reduction goal in the country. It's also a goal California probably won't reach with current policies, found a 2015 study by analyst Jeffery Greenblatt of the Lawrence Berkeley National Laboratory in Berkeley, California. "There's a significant gap," says Greenblatt, who notes California is hoping to make up the difference through tougher curbs on emissions.

Persuading other states to adopt aggressive new policies could be difficult. In Washington state, Governor Jay Inslee (D) has failed to get the legislature—which is split between Democrats and Republicans—to put a price on carbon. And voters there decisively rejected a 2016 ballot measure to tax carbon pollution. Republican-controlled states that are major sources of emissions—such as Texas and Indiana—are even less likely to sign on to new climate efforts.

States also won't be able to fill the funding gap if the federal government pares back on research spending in fields related to climate change, such as low-carbon energy, says Mark Muro, a senior fellow at the Brookings Institution in Washington, D.C., who studies the clean energy economy. Although not directly tied to the Paris agreement, the administration's recently released budget proposal would cut nearly \$900 million from the Department of Energy's Office of Science and \$1.4 billion from its energy efficiency and renewable energy program. This research funding, says Muro, "is one of the most important things for longer term success." ■

No road to Paris

Even if many major Obama administration climate policies are eliminated, U.S. emissions are projected to fall over the next few years. After that, uncertainties about technological change, economic growth, and how much carbon terrestrial ecosystems can absorb affect projections, but the 2025 U.S. goal is out of reach in all scenarios.



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