

TESTIMONY OF TIMOTHY H. PROFETA
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Thank you for the opportunity to testify today. My name is Tim Profeta, and I direct Duke University's Nicholas Institute for Environmental Policy Solutions. Our Institute was founded to be a non-partisan resource for decision-makers striving to solve the most pressing environmental challenges of our time, including climate change. We do not seek to tell policy makers what they should do. Rather, we provide economic, scientific, and policy information and expertise to help policy makers most effectively achieve what they wish to accomplish.

Today's hearing seeks to explore the best means by which to achieve economy-wide solutions to climate change. The central point of my testimony today is that Congress should strongly consider a model that has been successfully proven through our nation's history: the federal/state partnership.

Climate change is a challenge like none other. It is not an understatement to say that climate change is the test of our generation and one of the greatest collective action challenges in history. Climate change is a perfect tragedy of the commons, with the atmosphere serving as the common resource, absorbing all of civilization's greenhouse gas pollution without any individual or nation having singular accountability for the problem or singular ability to solve the problem.

To address the climate challenge, the most important step the world can take is to reduce the amount of greenhouse gases that are released into the atmosphere. As the second largest annual emitter today, and the largest historic emitter, the United States is fundamental to that solution. And, having added nearly double the amount of greenhouse gases into the atmosphere as any other country since the Industrial Revolution, the United States' inaction creates a barrier to global collective action, as other nations struggle to justify their efforts to constrain emissions while allowing the greatest emitter to continue releasing greenhouse gases unabated.

By pointing its powerful engines of innovation at solving the climate problem, the United States could greatly accelerate global progress. No nation has driven human inventiveness through recent history more than the United States, as the home of the greatest economy the world has ever seen.

Is Congressional Action Necessary?

The first questions Congress needs to ask as you explore an economy-wide climate solution is how much time we have to get started, and at what scale. The answer is that time is of the essence, and the sooner Congress acts, the greater the prospects for boosting innovation, cutting emissions, inspiring global action, and avoiding the worst-case climate scenarios.

The most significant warning on timeframes is the 2018 Special Report by the Intergovernmental Panel on Climate Change that cited more than 6,000 scientific references and involved thousands of expert and government reviewers worldwide. The report's findings include three items of particular relevance for your consideration.

First, "rapid and far-reaching" action is needed to cut global net emissions of carbon dioxide by about 45 percent from 2010 levels by 2030. That gives us little time—less than a decade—to significantly reverse the current trend of rising global CO₂ emissions.

Second, we must achieve global "net zero" emissions by around 2050. "Net zero" means reaching the point where any remaining human-caused emissions are balanced by removing CO₂ from the air.

Third, annual global investments in low-carbon energy technologies and energy efficiency need to be boosted by roughly a factor of six, and overall annual global investments need to be increased by about \$830 billion.

This last point about the needed global investment speaks strongly to the enormous opportunity and imperative for the U.S. to act quickly to advance climate solutions. Without America's economy producing clean technologies and driving solutions, we cannot get where the best science tells us we need to go.

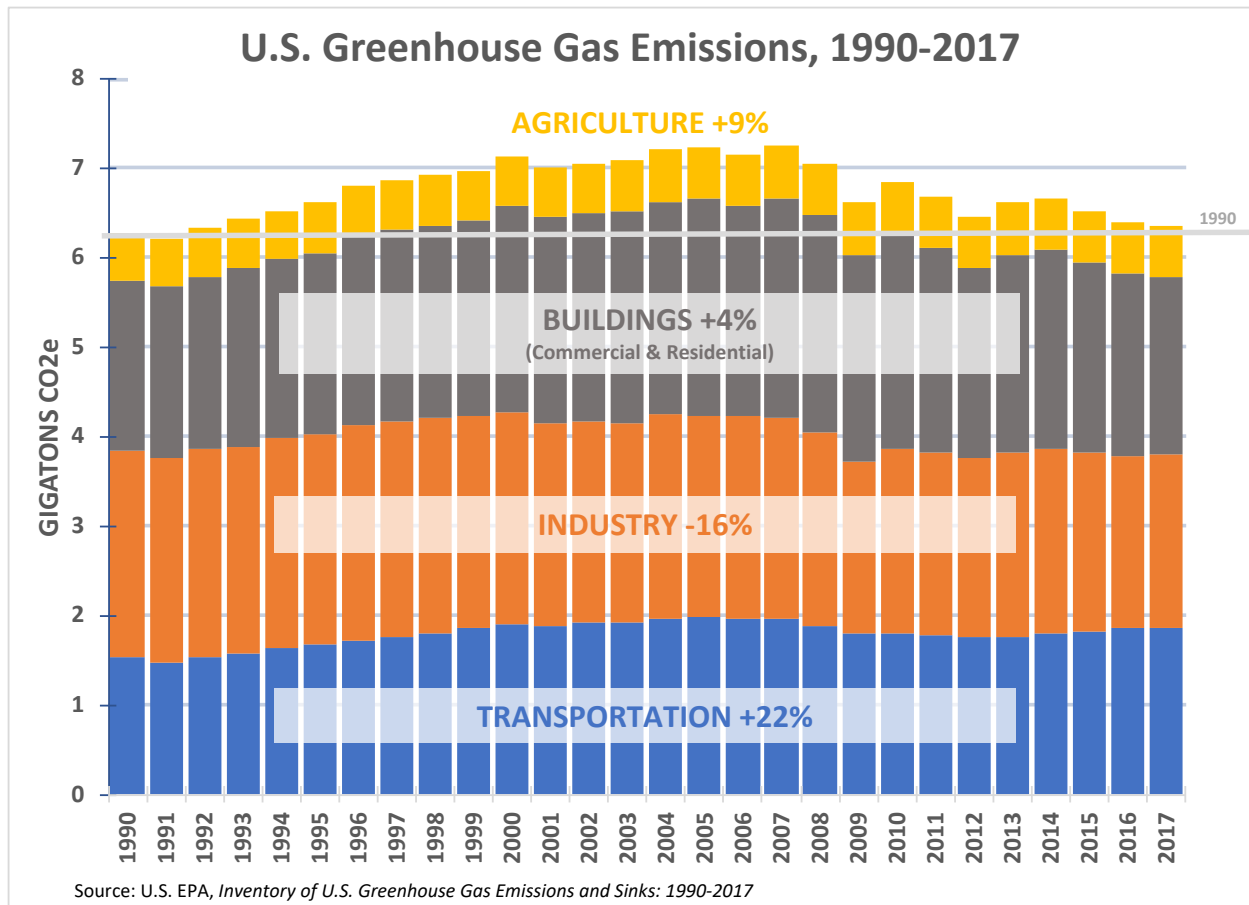
Approaches to Economy-Wide Solutions to Climate Change

Congress must next examine the best options to move fast and far to meet the urgency of the situation.

There are many options. Over the last 15 years, researchers at the Nicholas Institute have been identifying, considering, and evaluating these many options, which range from last decade's legislative efforts to pass an economy-wide cap-and-trade program, to the development of carbon tax proposals, to the design of regulations under the Clean Air Act.

As a threshold question, policy makers must decide whether we should look to the private sector alone to drive the greenhouse gas reductions we need without any government intervention, or if government action is needed.

We need only look at the nation's emission trajectory for the answer. Essentially, federal government inaction has not resulted in the progress we need. It is true that we have made some progress over this time—as the chart below demonstrates, our national emissions have bent downwards since their peak in 2007. But these reductions have stalled and emissions increased in 2018 at the very time we need to be increasing the pace of emissions reductions.



If we are going to decarbonize our economy, this pace of progress is not proportional to the scale of the problem.

To move quickly, however, the United States must find a path that actually works. And in saying that it “actually works,” I mean not only something that drives reductions in an economically effective manner, but something that is politically durable so that the nation may plan and depend on it.

At the outset, I must say that a single federal price on carbon, either set through a cap-and-trade program or carbon fee, has long been the preferred approach among economists and other climate policy experts. It certainly “works” in terms of its economic effectiveness. A carbon price will create market value for greenhouse gas reductions, and the private sector will drive investment to secure those reductions. If Congress could muster the political will to pass such a proposal, it still may be the most effective approach for securing nationwide reductions. Those of us that work on climate change policy, however, have witnessed the political resistance to such a proposal.

Today, I want to propose that there may be another way to solve this conundrum. America can create a 50-state climate strategy that supports the vital role of states in cutting emissions—an economy-wide system that allows for the differences between the states. Instead of attempting to settle all concerns about a program’s costs and impacts at the federal level, Congress could determine the national level of reductions needed to achieve our climate goals and then divvy up that goal to the states. State

governments, which are more in touch with the equitable tradeoffs of their populations and directly accountable to their communities, would then be empowered to execute plans to reach those goals.

This approach has worked through the years. Federal/state partnerships permeate environmental law, as well as many other areas of government action. The federal voice ensures that the policy reaches national goals, and it protects against adverse competition among the states undercutting the national objective. Meanwhile, the state leadership allows the creation of programs that account for the cultural and political heterogeneity of the states, and enables citizens to engage more local leaders, in whom they usually have more trust, in the creation of the solutions.

There is no reason that such a federal/state partnership cannot work to address climate change as it has in numerous instances before. Given the political uncertainty of our ability to achieve any other alternatives, the urgency of climate change demands that we consider it as the path of least resistance to achieve our climate objectives.

Without a 50-State Climate Strategy, States Are Pulling Against Each Other Rather Than Pulling Together

Many states have stepped up their efforts on climate change in recent years, but their laudable actions are not sufficient to overcome the absence of an effective economy-wide climate strategy for all 50 states.

Twenty-five governors have joined the U.S. Climate Alliance, aiming to reduce state emissions 26-28 percent below 2005 levels by the year 2025. Nineteen states in the U.S. Climate Alliance are at least halfway to their emission reduction goals. And action is being taken to reduce emissions further. Nine states—California, Colorado, Hawaii, Maine, Nevada, New Mexico, New Jersey, New York, and Washington—have passed legislation setting 100 percent zero carbon electricity goals and/or economy-wide emissions reductions targets.

Midwestern states collectively cut carbon emissions 9 percent annually from 2009 through 2016, the latest year that state data are available. At the same time, the Midwest's economy grew by 3 million jobs as the region built its way out of the Great Recession.

Since 2009, Ohio, Michigan, Iowa, Indiana, Kansas, and North Dakota have each cut their carbon intensity by more than 20 percent, shifting to lower-emission energy sources while reducing their dependency on coal-fired electricity. Many states in other regions have also made significant progress.

All of this encouraging progress at the state level, however, is being undermined by the federal climate policy vacuum and lack of a cohesive 50-state climate strategy. As emissions go down in some states, they are going up in others. The net effect: nationwide carbon emissions rose rapidly in 2018—the biggest increase in eight years.

State efforts, while significant, therefore are not sufficient in their own right. The federal government is needed to ensure the signal toward reductions is felt across the entire U.S. economy.

A Comprehensive Federal/State Climate Partnership

A comprehensive federal/state climate partnership would allow the federal government to do what it is best suited to do—set the level of ambition necessary for the United States as a whole to do its share in

the fight against climate change. This inquiry is part scientific and part political. Science can provide a sense of what the overall target should be, within bounds of uncertainty. But the federal political process can decide how much risk to accept, how much of the global challenge is equitable for the United States to address, and how the obligations should be divided amongst the states.

After the federal government sets the targets—both overall for the nation and individually for the states—then state governments would be empowered to do what they have done well throughout our history—design policies that fit with the culture and economies of their states. In this way, the program will respect the leadership of the states that have been active over the past decades, empowering each of these leadership states to carry their programs forward as long as they can reach the federally designated target.

A comprehensive federal/state climate partnership could have several appealing advantages that would enable the U.S. to respond adequately to the climate change challenge.

First, a comprehensive federal/state climate partnership approach would involve all 50 states in America's pursuit of greenhouse gas reductions, ending the current state of fragmentation. By aligning all states toward common outcomes, overall U.S. emissions would more quickly be reduced, and businesses would face a more consistent framework across state boundaries, boosting innovation.

Second, a comprehensive federal/state climate partnership promotes regional fairness by tailoring action plans to each state's circumstances and strengths. Relying on the states to execute their own plans ensures that the states may design programs to minimize distributional effects about which they are more knowledgeable.

Third, if any revenues are raised through climate programs, the money would keep circulating within the state's economy rather than growing the federal budget. State leaders can surgically design the use of any revenues to where they may determine resources would be best used to reduce emissions, prepare for climate change, and fairly distribute the economic opportunities and costs of climate policies.

Fourth, a comprehensive federal/state climate partnership may be appealing to a wide range of states. States that are already leading on climate change could align behind this proposal, as state leaders will see the approach as reinforcing rather than a threat to their autonomy. Instead of fighting early acting states through preemption, the federal government will allow them to continue their good work under their own plans.

States that have been less aggressive can receive several benefits from this approach as well. They would get flexibility on how to develop and implement their own plans. Further, under an effective and comprehensive federal/state climate partnership, states would receive financial and technical support from the federal government to inventory and track their emissions and develop needed policy tools. Such states should would have the voluntary option of falling back on a federally designed program to ease administration and ensure parity for regulated sources across state boundaries.

Fifth, a program devolved to the states will have the advantage of being familiar to the professionals responsible for its implementation. Throughout environmental statutes, states are given the task of achieving federally delineated targets for pollution control. In particular, for nearly all of the major air pollutants, states are responsible for achieving federally designated air quality targets through state plans. And many states have already created proposals to reach greenhouse gas reduction targets on

their own—these proposals will just have to be reassessed when given a federal target. A federal/state proposal that uses a state planning approach will have the advantage of running a familiar path for all and the ability to harvest the early work of many.

Finally, a comprehensive federal/state climate partnership backed by new legislation in Congress can solve some of the legal questions that rise without it. For example, many of the states hope to pool their obligations under that plan to create multistate programs, but it is unclear whether the Clean Air Act authorities would allow such efforts. Such linkages could be explicitly authorized under new legislation. This would provide more certainty and flexibility to businesses that are currently operating in a highly fragmented environment with states moving in different directions.

Key Elements of a Comprehensive Federal/State Climate Partnership

To provide more guidance, I would like to suggest a few important elements of a federal/state climate partnership, and early thoughts on how such elements could be designed. In particular, a federal/state plan needs to cover, at a minimum, the following concepts: (1) level and distribution of state obligations; (2) assessment of the sufficiency of the state plans; (3) provisions to allow for multistate efforts and other desired mechanisms; and (4) provisions to support states with incentives and ensure action for states that opt not to act on their obligations.

Level and Distribution of State Obligations

The overall national commitment to greenhouse gas reduction should be consistent with a global effort to avoid the worst effects of climate change, as detailed in the aforementioned 2018 IPCC report. Given the long-term planning horizons of many affected industries, a long-term target would be desirable.

Once the overall targets are created, the cumulative national target will need to be divided among the states. As a starting point, the U.S. could set the emission reduction range expressed as a percentage emission reduction that each state applies to its own emissions baseline. For example, the 26-28 percent reduction from 2005 emission levels that the U.S. initially agreed to under the Paris Agreement has been adopted by the states in the U.S. Climate Alliance. That range could be extended to 2030 and through 2050. To provide added flexibility from state to state, states might be allowed flexibility in setting the base year by which percent reductions are measured. In that scenario, states that have reduced their emissions can get credit for those reductions while states with higher emissions today can set targets based on their current circumstances so that they are not put at a disadvantage.

Assessment of Plan Sufficiency

Once each state has its own emissions target, the proposal will require the state to design a plan capable of meeting that target. It will be the role of the federal government to judge the sufficiency of the state plan. How it will be judged should be clear and transparent to all parties from the outset.

Given the likely diversity of plan approaches—governors could choose to design a cap-and-trade system, implement a carbon tax, impose flexible emissions standards, or select any number of other options or combinations—the sufficiency of a plan should likely be assessed by a general economic model or the combination of several. The model should be transparent and available as a tool to states to assist planning. As a result, the proposal should allow the federal government to designate a particular independent model, or combinations of such models, that will be used to determine sufficiency of a

state plan. Any plan that meets the state's target using the designated models would be deemed sufficient.

Removing Legal Barriers to State Leadership

State governments, and the businesses that bridge their borders, likely will want to pursue the most economically efficient means of achieving greenhouse gas reductions in the development of their plans. In past efforts, however, there have been some legal uncertainties about states' ability to pursue all such options. Regional compacts between states have been challenged, although thus far unsuccessfully, under the U.S. Constitution's Compact Clause. Efforts by states to prevent leakage—or the export of operations and their associated emissions—to states without greenhouse gas constraints have been challenged as violating the U.S. Constitution's Dormant Commerce Clause with some, but not universal, success. And efforts to pool the obligations of multiple states or multiple sectors of the economy were argued to be outside the limitations of the Clean Air Act.

A new legislative proposal for the comprehensive federal/state climate partnership could clarify and secure the needed legal authority for these efforts. As most, if not all, of the constitutional objections are based in an argument that states are acting in the realm given to the federal government, federal legislation could clearly authorize such efforts. A new law could also make clear that the efficient grouping of states—say, all of those that share a common electric grid—or the merging of sectoral targets are explicitly permitted so that the system could seek the most efficient reductions across the economy.

Federal Incentives and Backstop

One common concern about this proposal is the possibility that a state simply would refuse to create or enforce its plan for greenhouse gas reductions, thereby undercutting the effectiveness of the program. First, one would hope this concern would not arise. In particular, this proposal can be paired with resources to empower the states to take action. Whether it be authorized funding for the planning processes or infrastructure investments and tax incentives pegged to the path to decarbonization, federal resources could be added to incentivize participation and avoid the likelihood of states' inaction.

If a state still does not engage in the planning process, however, the proposal could create federal backstops that would minimize federal government intervention but still meet the state's obligation. One concept would be the creation of a simple carbon fee administered out of the Treasury Department for states that opt for this approach or decline to put forward their own plan. To ensure that there is no fear that this proposal would once again grow the federal budget, the approach could recycle the carbon fee revenue back to the affected state, where it could put the revenue to use on issues of the greatest importance.

Conclusion

A comprehensive federal/state partnership could achieve fast and significant climate action and create new pathways to overcome political stalemate with cooperative solutions. Our network of state governments has provided politically acceptable solutions to a number of societal problems through our country's history, and perhaps it is time to embrace their role in the climate fight fully. This may be the best bet to find success legislating on one of our most dire and pressing societal challenges—climate change.