Integrating U.S. Climate, Energy, and Transportation Policies

RAND Workshops Address Challenges and Potential Solutions

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Climate change and the greenhouse gases that cause it are a growing concern among policymakers and the broader public. The interconnection of climate change mitigation policy with the key sectors of energy and transportation is a major challenge facing the new president and his administration.

Although there are many stakeholders who bring a wide range of perspectives on potential climate-change strategies, it is important that major policy players seek some level of general agreement on an approach that encompasses both energy and transportation policy solutions. Otherwise, proposed climate change mitigation policies will engender dissent and risk failure.

In an effort to share different perspectives and identify common points of view that could lead to new climate policy solutions, RAND convened three workshops—one each on climate-change policy, energy, and transportation—that brought together participants from several government agencies, industries, and advocacy and research organizations. The workshops featured discussions on various issues related to climate change mitigation policy, including technological innovation; federal, state, and local roles; potential legislative and regulatory solutions; international cooperation; and public engagement.

Context for Making Climate Policy

The workshop participants generally agreed that four broad themes describe the context for making policy on climate issues.

Climate change is a significant problem requiring action on many fronts. There is no longer doubt that the core scientific findings indicate that climate change is caused by human activity. The business and environmental communities agree that climate change is a real and growing concern and that significant reductions in greenhouse-gas emissions will be needed to

Abstract

There is growing consensus among policymakers that bold government action is needed to mitigate climate change, particularly through integrated climate, energy, and transportation policy initiatives. In an effort to share different perspectives on potential climate policy solutions, RAND convened three workshops—one each on climate change, energy, and transportation—in which key stakeholders addressed many climate-change policy issues, including technological innovation; federal, state, and local roles; potential legislative and regulatory solutions; international cooperation; and public engagement.

prevent harmful environmental change. Broad-based policies are needed soon, and all major sectors of the economy should be involved because climate change cannot be mitigated by responses in only a few sectors or industries.

Climate-change mitigation is intrinsically linked to other important public-policy issues. Because efforts to mitigate climate change will affect other policy areas, policymakers should understand these interconnections and consequences. For example, some transportation policies could help reduce traffic as well as curb greenhouse-gas emissions. However, in other cases, climate policy goals may conflict with other national goals, such as greater energy security.

Policymakers and the public differ in their recognition of the problem. Awareness of climate change and the need for urgency varies. Some states are more aggressive than the federal government, while other states are doing little. The public understands that climate change is a problem, but education may be necessary to generate public support for potential solutions.

Executive leadership is needed to make progress on climate change. Top executive-branch officials at all levels of government—from the president to governors and mayors—ought to take the lead on developing, building public support for, and implementing climate-change policies. Such leadership will be necessary to help guide constructive policy debates with legislative bodies at all levels.

Policies to Confront Climate Change

Workshop participants also identified and debated the advantages and drawbacks of specific approaches to confront climate change.

Market-Based Approaches. Market-based approaches are seen as a necessary component for a policy to gain acceptance and succeed in reducing emissions. Two types of market-based approaches were discussed. In a cap-and-trade system, the government sets an emissions limit and issues tradable permits for the amount of emissions that an emitter can produce. In contrast, a carbon tax sets a price for emissions but imposes no limit on the amount of emissions an emitter can produce. While many economists and some industry leaders believe that a carbon tax would be more economically efficient, most experts view cap and trade as more politically feasible and still effective.

At the climate workshop, participants debated a range of issues relating to cap-and-trade policy, including how to distribute emissions permits and what to do with the substantial revenues collected if the government were to sell permits. While participants in the energy workshop agreed that market-based approaches would be a key strategy for reducing energy emissions in general, participants in the transportation workshop generally felt that a market-based approach alone would not be sufficient to reduce emissions from transportation.

Direct Regulations. Regulations require individuals and businesses to reduce certain types of emissions without directly addressing the cost of doing so. Current regulations with implications for greenhouse gases include

- Corporate Average Fuel Economy standards, which help limit tailpipe emissions from cars and light trucks
- energy-efficiency standards for both residential- and commercial-use appliances
- building codes that regulate types of heating and cooling systems, lighting, windows, and so forth
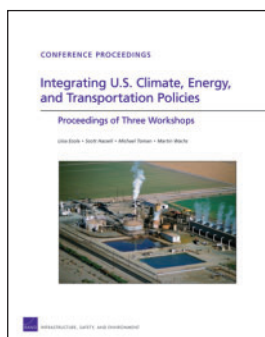
- renewable portfolio standards, which require electric-power companies to use a minimum percentage of renewable energy sources to produce electricity.

Not surprisingly, there was a great deal of debate about the most effective types of regulation as well as which level of government—federal or state—should set regulatory standards.

Technology Policies. Although all participants agreed that many technological innovations will be needed to reduce emissions, they expressed a range of views about the impact of new technology as well as policies designed to foster emissions-reduction innovations. While some believed that new technologies would ultimately be the principal way to achieve greenhouse-gas reductions, others thought that the promise of technology had been overhyped because significant behavioral and infrastructure changes would also be needed to make new technologies widely available and affordable. There was broad agreement that work should continue on promising technologies, such as wind and solar power, carbon capture and storage, biofuels, and alternative vehicle technologies, such as plug-in hybrids.

Behavioral Change. Workshop participants generally agreed that there are significant obstacles to achieving major emissions reductions through behavioral change, especially in the near term. Behavioral change can take many forms, including driving less, purchasing more energy-efficient appliances and vehicles, using less electricity, and switching to alternative sources of electricity. Small changes in individual and business behavior can add up to large decreases in collective greenhouse-gas emissions. Although some behavioral change may occur voluntarily through increased public awareness of climate change, government policy incentives seek to encourage such change. Market-based approaches are one form of incentive; direct financial benefits, such as tax credits, represent another category.

Another key obstacle is that existing land-use patterns make it difficult for Americans to reduce driving. Changing this may require a variety of approaches, including regulatory reform of land-use patterns and congestion pricing (in which drivers pay higher tolls during peak traffic hours), to reduce vehicle miles traveled. Although emissions have been reduced in the past through technological innovations, efforts to address climate change by reducing emissions will also likely require Americans to drive less. ■

CONFERENCE PROCEEDINGS

Integrating U.S. Climate, Energy, and Transportation Policies

Proceedings of Three Workshops

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