

A CLIMATE POLICY FRAMEWORK: BALANCING POLICY AND POLITICS*

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What is the preferred framework for a domestic policy to reduce greenhouse gas emissions? The approach most likely to achieve environmental results? To be administratively feasible and cost effective? To gain political acceptance?

A diverse group of stakeholders considering these questions at the Aspen Institute Climate Change Policy Dialogue reached convergence on several fundamental elements of such a program. These include which sectors, gases, and sources should be covered and the nature of the program itself: an initially modest but subsequently declining absolute emissions cap on large sources, a cap on transportation fuel suppliers coupled with CO₂-based automobile efficiency standards, and tradable efficiency standards and offsets. It is a framework, not a fully developed policy; a starting point rather than a final product. But we believe it can be helpful to those seeking to balance policy and politics, environmental effectiveness and cost, efficiency and equity.

This summary reflects our understanding, as co-chairs, of the conclusions and the agreements reached, and of the factors that influenced them. Participants in the dialogue were asked to discuss policy options for a U.S. mandatory greenhouse gas program that could be implemented if and when the nation decides a program is necessary. For purposes of the dialogue, they were asked to put aside questions about whether such a program should be implemented and about the

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scientific evidence supporting the need for such a program. Rather, the focus of this effort was to determine what – if any – agreement could be reached regarding key design features of a domestic greenhouse gas reduction program. While the emphasis was on development of a U.S. program, participants were mindful of the global nature of the climate change issue and the need for any domestic program to be compatible with the emerging international system.

This dialogue grew out of *Designing a Mandatory Greenhouse Gas Reduction Program*, a May 2003 paper commissioned by the Pew Center on Global Climate Change and authored by Robert Nordhaus and Kyle Danish. Program design options evaluated in that study include various cap-and-trade approaches, greenhouse gas taxes, and a “sectoral hybrid” program combining efficiency standards with a cap-and-trade for large emissions sources. The authors of that report established criteria for evaluating program design options and drew some conclusions about program viability under their criteria.

Participants in the Aspen dialogue were provided the Nordhaus/Danish report and several other background papers to inform their discussions. These additional papers include six commissioned for this workshop and one summary of a new Pew Center report on technology policy.

Participants discussed important aspects of design, including program approaches, key design variables, and the criteria for assessing options in making their own determination about a potentially viable program. In doing so, they arrived at general agreement on the principal elements of a U.S. greenhouse gas reduction program, the “Climate Policy Framework”, which we describe below.

Criteria and Principles

In assessing the criteria that should be used to evaluate a proposal for a mandatory program addressing climate change, the Aspen group began with the Nordhaus and Danish criteria:

1. Environmental effectiveness: How effective is the program in meeting its emissions reduction target?
2. Cost effectiveness: Will the program design allow cost-effective compliance?
3. Administrative feasibility: Can the program be administered and does it minimize administrative and transaction costs?

4. Distributional equity: Is the burden of compliance with the program fairly apportioned?
5. Political acceptability: Are there elements of program design that affect its political acceptability?

Dialogue participants believed Nordhaus and Danish identified important evaluation criteria, but raised some additional points. For example, there was strong agreement that a mandatory domestic policy would only succeed if it were combined with a push for technology development because of the need to drive fundamental changes in our energy system and fossil-fuel based economy. To this end, the Aspen group added a sixth criterion to the original set: Ability to provide a platform for technology development and diffusion.

On the subject of costs, participants emphasized concerns about the distribution of costs, and about competitiveness in some industries. There was a widespread feeling that these issues were even more important politically than absolute cost considerations. Several aspects of the competitiveness issue were considered important:

1. Avoiding actions that would disadvantage U.S. business or perhaps drive manufacturing offshore (where energy prices may be lower due to lack of climate policy or other reasons);
2. Disadvantaging one sector of the economy disproportionately; and
3. Creating opportunities for U.S. business to develop and market technological innovations that can be exported.

While any government program of this scale requires some degree of complexity, there was a plea to keep administrative feasibility in mind. "Simple but firm" was one participant's view of a desirable program trait. In addition, the program's ability to adapt to changing circumstances and incorporate new information was identified as an important element of political acceptability, administrative feasibility, and environmental effectiveness.

Finally, while some degree of compliance with all criteria would likely be necessary for a successful U.S. program, there was broad agreement that the paramount concern for a workable program is political acceptability. Indeed, without political acceptability, the most well-designed, theoretical program will never get off the ground.

As the discussion of criteria proceeded, a set of principles that would guide the discussion began to emerge. For example, consideration of environmental effectiveness and distributional equity generated discussion about the need for broad program coverage (across multiple sources, sectors, and gases, and to include the use of sinks). However, recognizing the limits of our ability to treat all gases and sinks in ways that can be monitored and are verifiable, the participants agreed that while broad coverage and maximum flexibility would be an important principle from both an environmental and equity perspective, nothing should be included until it was clear that it could be monitored and counted.

There was agreement that the environmental effectiveness of a mandatory program should be measured not so much by the extent of emission reductions achieved in the short term but rather by the program's success in encouraging firms and households to start investing in technologies to realize deeper reductions in the longer term. Accordingly, while there was broad agreement that program coverage should be wide, there was also consensus that phasing of actual reduction targets would be important, and that a modest start would be preferable. This would send a signal that reducing greenhouse gases was national policy. Deeper cuts could occur later, as technology evolves and capital stock turns over in response to early market signals generated by the policy.

With these criteria and principles in mind, the group developed its favored approach.

The Framework

In keeping with the desire to address as many sectors of the economy as possible, while recognizing that one size does not fit all, the preferred program design was a hybrid – combining elements of cap-and-trade with efficiency standards that allow for trading. While the group came to consensus rather quickly on the desirability of a hybrid approach, the details emerged only after lengthy discussion and through work of subgroups charged with making recommendations on certain program elements to the group as a whole.

The broad outline of the approach is as follows:

1. A cap-and-trade system covering large point sources of both CO₂ and non-CO₂ GHG emissions, with an initially modest and subsequently declining cap.

2. Coverage of transportation-related emissions through two mechanisms:
 - a) Inclusion of upstream suppliers of transportation fuels in the cap-and-trade program;
 - b) Fleet efficiency standards for automobile manufacturers, expressed in CO₂ equivalents that are also tradable.
3. Inclusion of appliances and other large energy-using products through efficiency standards and trading.
4. Use of carbon sinks and international trading as offsets to the fullest extent possible, considering monitoring and verification capabilities.
5. Programs to support technology development – providing an assured source of long-term funding generated through taxes, auction revenues, or another mechanism, with support going to both public and private R&D and deployment.

Each of these items is discussed in greater detail below.

Cap-and-Trade System for Large Point Sources

Dialogue participants recommended a program requiring large point sources of greenhouse gas emissions (e.g., electric utilities, manufacturers) to meet a modest but declining cap through a program that includes flexibility through trading and offsets. This would achieve modest near-term reductions in GHG emissions while providing incentives for the development and diffusion of technology that will lead to significant reductions in the longer term. Background papers presented various approaches to developing a target (absolute, rate-based, indexed) but the group quickly settled on an absolute target of a modest – but unspecified – reduction level, with further cuts phased in over time.

Allocation issues were more contentious. Because there are clear winners and losers from various allocation schemes, it was harder to reach agreement. Participants noted that allocation will essentially be a political exercise, one for which Congress is especially well-suited. Having said that, the participants discussed one approach as a potential way to deal with allocation considerations. This approach involves distributing the majority of permits (95%) through grandfathering in the initial allocation.

The method for grandfathering – historical emissions or output-based – was hotly debated by interested parties. Those wanting output-based allocations – i.e., allocations based on a facility’s historical output of electricity or other products, rather than its GHG emissions – argued that firms should be rewarded for past investment in efficiency and the use of relatively lower-emitting or zero-emitting technologies (e.g., natural gas, hydroelectric, renewables, or nuclear power). Others believe that the permits should go to firms who will need them most at the outset, so they can afford to cover increased fuel costs and invest in new technologies and fuels. One proposal was to grandfather on an output basis, but make the allocation fuel-specific without allocation of allowances to non-emitting sources.

Because of regional variability in fuels and the challenges in defining a fair allocation at the national level, a proposal was made to allocate permits to the states (based on grandfathered emissions) and allow them to determine in-state allocation. Drawing an analogy to existing air programs managed at the state level, some believed such an approach had precedent and could effectively address some practical concerns and political obstacles. Others remained unconvinced that Congress would find such an approach more politically salable or would delegate this responsibility.

Discussion about the fate of the remaining 5% of the permits was animated. There was general acceptance of the need for this set aside (and possibly a small additional fraction) to cover new entrants and to generate funds to support transition programs, R&D, and/or to help offset increased costs to consumers. The group was unsure, however, of the best vehicle for distributing these permits. Options discussed were auctions or use of a fiduciary body (similar to one proposed in S. 139, The Climate Stewardship Act), but the group did not reach consensus on which could best provide the desired market liquidity or be most easily administered.

The allocation concept advanced by the group was presumed to be an initial allocation that could potentially be adjusted over time (e.g., decreasing the grandfathered proportion). There was also a broad sense that Congress has a variety of workable allocation options from which to choose.

The participants also discussed two tools designed to address “cost certainty concerns”, i.e., that a cap-and-trade system will result in unacceptable uncertainty about compliance costs. These tools are: (1) a safety valve policy, which would release as many additional permits as firms require if the trading price reaches a pre-determined threshold; and (2) a circuit-breaker policy, which would postpone a scheduled reduction in the overall cap if permit prices reached a pre-determined level. Concerns were raised about the potential market-distorting effect of the safety valve and related detrimental effects on price discovery and investment. Administrative feasibility of the circuit breaker’s ever-declining target was questioned.

Some felt that a safety valve or circuit breaker might make the program more politically palatable, while others noted that political opposition often relates more to relative cost and distributional issues than to permit prices per se. Said one participant, “ I don’t care what it costs, as long as we’re competitive.” Many participants seemed to feel that a well-designed program – one that gradually phases in deeper reductions over time and provides maximum flexibility in meeting targets – would address cost concerns without some of the drawbacks associated with these devices.

Finally, penalties were thought to be necessary to promote compliance, and the penalty structure used in the Acid Rain program was considered by many to be a useful model.

Transportation

The transportation sector provided the greatest challenge to dialogue participants. Generating roughly one-third of U.S. emissions, the sector is a growing contributor to greenhouse gas emissions and one that cannot be ignored. Yet it was recognized that political and practical obstacles exist to curbing the growth in these emissions.

The dialogue produced a two-pronged approach to addressing transportation sector emissions. Some previous proposals have dealt with transportation emissions entirely through allocation to the fuel provider. However, that approach decouples the allowance holding from one of the principal abatement opportunities available – namely improvement in vehicle efficiency. Thus the

suggested approach to transportation distributes allowances to both the fuel provider and the vehicle manufacturer. Vehicle manufacturers' allowances would be based on expected vehicle lifetime emissions in CO₂ equivalents, encouraging investment in both alternative fuels (e.g. biofuels) and in vehicle efficiency measures. This dual approach would not only signal a future (and increasing) carbon constraint on fuel but also a program to promote vehicle efficiency and thus provide consumers with the means to adapt.

The first element is a cap applicable to fuel suppliers with an opportunity to trade in the cap-and-trade program covering large sources. While the group acknowledged that the kind of modest initial cap envisioned in this dialogue would produce only a small increase in gasoline price, with little likely corresponding impact on consumer behavior, participants felt it important to address both automobile fuel and design. A cap covering fuel suppliers would also modestly affect other forms of transportation such as aviation, rail, barges, and motor freight.

With regard to automobile efficiency standards, the second element of the transportation program, the group would include a single efficiency standard for both automobiles and light trucks/SUVs. Existing CAFE standards would be converted into a CO₂-equivalent credit system, with the credits tradable into the cap-and-trade program. In establishing requirements for this sector, the group recognized the need for different starting points for different automakers and yet acknowledged the need for convergence of requirements over time. Such a policy would also serve to drive technology improvements by all manufacturers.

While specific targets and timetables were not determined, a general principle was enunciated that the program should avoid penalizing any companies at the start. Efforts of those who invested early and have exceeded the CAFE standard should be recognized (e.g., through credit allocation) while adequate time is provided for other firms to catch up, recognizing the time needed to develop and market new automobiles.

In order to maintain the integrity of a national emissions cap, a program that awards credits to automakers for fuel economy improvements needs to draw those credits from elsewhere in the cap-and-trade system. One suggestion was that credits be reduced on a pro rata basis from all sectors. Alternatively, credits could come from the upstream motor fuel suppliers.

Other Products

In addition to automobiles, products such as appliances and lighting drive much of the residential and commercial demand for electricity and should be included in efforts to address climate change. Motors are also a significant factor in demand. Where possible, efficiency standards should be extended and converted to a tradable CO₂ credit system, that could be used in conjunction with the cap-and-trade program as described above. By creating incentives for continued reductions, firms would be encouraged to invest in new, more efficient, technology.

Standards for buildings and building materials were also briefly discussed. While most building codes apply at the local or state level, federal government programs could develop best practices and create incentives for incorporating materials that enhance efficiency or promote renewables.

Other (Non-CO₂) Gases, Sinks and International Trading

As discussed in the large source cap-and-trade program description, dialogue participants believed that a broad approach covering all greenhouse gases (i.e., CO₂, CH₄, SF₆, PFCs, HFCs, N₂O) was preferable. Thus, large sources of these gases would be covered under the cap-and-trade program. Emissions from other activities could be included as offsets, where monitoring is feasible and the scale sufficient. For some number of more diffuse or less quantifiable activities, incentive or traditional control techniques were preferred (e.g., best practices, phase-outs, subsidies, etc.). The initial choices should be revisited from time to time, however, because an increasing number of techniques should likely be included in the cap-and-trade or offset system as we learn more.

There was a fairly broad consensus that increased flexibility for meeting the established cap using credits from off-system emission reductions of other greenhouse gases, from carbon sinks, and from international trading would be helpful in addressing economic and political concerns and could be done in a manner that would not compromise environmental effectiveness.

First, land-use related carbon sequestration projects offer an important opportunity to slow accumulation of greenhouse gases in the atmosphere while

transitioning to lower emitting fuels and technologies. Opportunities to store carbon in forests or soils vary in size, measurability, and rate-of-return. Projects with a larger rate of return and more certainty of the carbon sequestered were thought to provide the best offset opportunities. Examples of currently available offset opportunities include afforestation and energy plantations. Other efforts may currently be more diffuse or raise monitoring issues. As with some sources of non-CO₂ gases, a spectrum of approaches may be warranted.

For international land-use projects, questions about fungibility and verifiability were raised. Ultimately, the goal would be to have the domestic system link successfully with a coherent and sound international trading scheme. In the shorter term, a domestic system could recognize credits accepted by sanctioned trading programs or approved through the Clean Development Mechanism. One option offered, but not fully discussed, was that credits for sinks could be time limited (e.g., to the first phase of the program), but not discounted or held to a certain percentage of allowable credits.

There was general agreement that for all these categories (non-CO₂ gases not covered in the initial cap-and-trade system, land-based sequestration, and international offsets) that where reductions are real, quantifiable, and verifiable, credits should be allowed into the system unfettered. Some participants noted, however, that to win political support aimed at driving domestic mitigation efforts, limits to the use of offsets may need to be incorporated into a program. For source categories of limited size or monitoring capability, other programs such as controls, incentives, education, or discounted offsets may be most appropriate. As experience and technological proficiency is gained, practices could move from the incentive/standards category to offsets.

Technology Policy

Whatever the short-term reduction policy, the group found that it should be supplemented by research and efforts to promote a transition to new fuels and technologies. There was discussion of the need to secure reliable, sustained funding for technology R&D and to support diffusion of GHG-friendly technologies. This should include both policies to bring nearer term technologies to the market and to encourage longer term paradigm shifts such as hydrogen or carbon capture and storage. In addition to general tax revenues, two funding options

were discussed in some detail: (1) regulatory surcharges on transmission lines and pipelines; and (2) revenues from allowance auctions (recognizing that there was not support for auction of allowances other than 5%), whether implemented by the government or by a fiduciary body. There was no consensus on which source was preferable and some objection to using surcharges. Whatever the source, however, there was support for using such funds to aid both public and private sector research efforts.

Finally, the influence of other government policies and incentives on climate policy was noted. Actions the government takes on energy and transportation policy can create barriers to or opportunities for addressing climate change. Natural gas supplies are critical to a transition to a lower carbon economy. Incentives in the transportation sector to build roads or expand public transit have an impact on the ability to address rising GHG emissions. The relationship of climate policy to the broader domestic policy agenda needs to be understood and addressed.

Conclusion

The Climate Policy Framework described here is suggested by participants in the Aspen Institute dialogue as a viable design option for a domestic program to reduce greenhouse gas emissions. Developed in broad-brush, it represents a starting point for further dialogue regarding more specific design features.

While all details of program design were not articulated or agreed upon, and there was no attempt to recommend levels of emissions reductions or dates, it is noteworthy that a varied group of people from different sectors and constituencies reached substantial agreement on a framework for program design — an initially modest but subsequently declining absolute emissions cap on large sources and transportation fuel suppliers, supplemented by tradable efficiency standards and offsets, and coupled with a long-term commitment to technology development and diffusion — and on which sectors, gases, and sources should be covered.

We believe the results of this dialogue provide a hearty basis for further discussion among additional stakeholders, analysts, and policymakers.