



Climate Change Mitigation: Process and Policy Options for State Greenhouse Gas Plans

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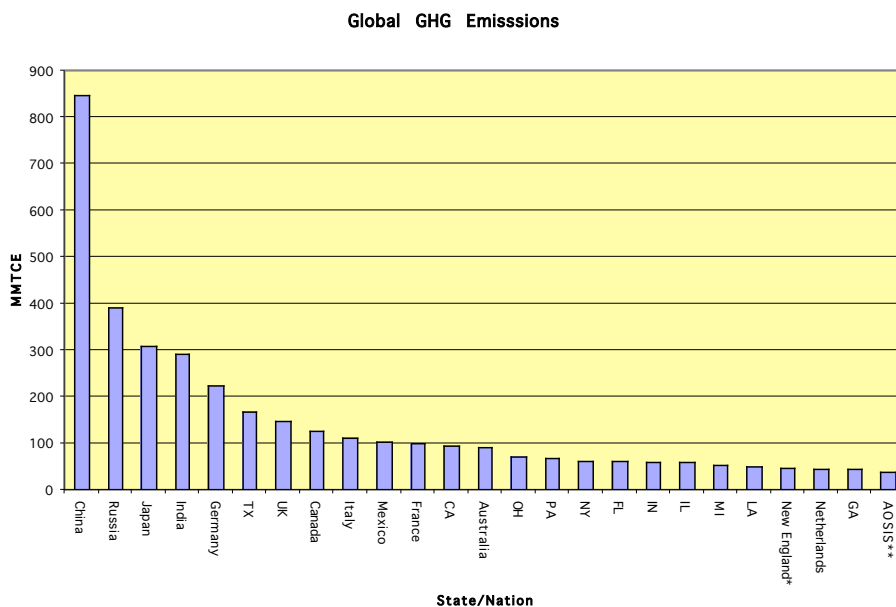
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Author's Note: The Center For Clean Air Policy prepared this report to assist states in developing options for state climate change policy plans. Conclusions are based on a limited set of observations and reviews of existing state planning processes and may not be completely systematic. Reviews of this paper were provided by Ned Helme and Jake Schmidt of The Center For Clean Air Policy, Adam Rose of Penn State University, and Don Brown of the Pennsylvania Department of Environmental Conservation. Copy editing was provided by Caroline Polk of Polk Editorial Services, and technical assistance was provided by Tony Tubiolo of CCAP. Funding for this effort was generously provided by the Energy Foundation and the Surdna Family Foundation – Tom Peterson, Domestic Policy Director

EXECUTIVE SUMMARY

A majority of the world's leading scientists, agree that global climate change is real, regional effects are discernable, and future projections imply challenging human circumstances without mitigation (IPCC, NAS, Eric Barron PSU 2002, Richard Alley PSU 2002). At the same time, a reservoir of science and policy skeptics continue to oppose this consensus and, in some cases, represent economic interests opposed to mitigation action.

It is well known that the United States is the world's largest emitter of greenhouse gases (GHGs) at 22.5 percent of the world total, but less recognized that U.S. states and regions are also some of the largest global emitters (Figure 1 below). If U.S. states were ranked as nations, they would rank as 12 of the top 25 global emitters of carbon dioxide (the primary GHG), or 34 of the top 50. The Mid-Atlantic and Northeast region would rank as the seventh largest world emitter of CO₂, the New England Region would rank 23rd, and the West Coast (OR, WA, CA) would rank as the eighth largest emitter (DOE, EPA GHG inventory data 1998-99). Future growth in all states is expected to be significant without a variety of policy responses. Because GHGs are global in dispersion and cumulative over time, actions by states can make a significant dent in the reducing the world's GHG surplus in coming years.



States increasingly find themselves in the wake of global climate change and typically bear the brunt of climate change impact and expenses. For instance, temperature and precipitation patterns impact human health (heat stress and disease), infrastructure (damage to roads, waterways and buildings), agriculture (altered precipitation patterns, over-wintering of pests, water supply changes, crop damages), natural landscapes (decline of forests and wildlife species, watersheds, and recreation and tourism resources, farmland) and other climate related damages that trigger state program responses. States are also likely to face a significant share of climate mitigation expenses in the future if national programs delegate states responsibility for action in the future as they have in the past (e.g. Clean Air Act). States typically have many constructive and creative options in the near and mid-term for reducing GHG emissions. Other public needs may addressable in the process. These include improved economic development, energy conservation and diversity, fiscal reform, technology and trade, and transportation efficiency. Finally, public pressure for action is growing from a number of directions.

As a consequence, many governors see advantages in crafting sensible and strategic climate solutions. Several states and localities are now formulating GHG targets and mitigation action plans in the absence of federal action. These contain both common and location-unique policy actions (see CCAP Roundup of State Climate Actions, 2002) that demonstrate political willpower and a broad implementation pathway for solutions.

Climate mitigation planning is an intensive process that involves a significant number of diverse constituencies, policy actions, and potentially high political and economic stakes. To date, 28 states have developed climate action plans (EPA), with significant variation in design and adoption. Most were developed in the mid to late 1990s in response to potential U.S. involvement in the Kyoto Protocol. They have generally focused on inventories and sketch plans versus detailed baselines, targets, or implementation packages. Some states have established, or are establishing, statewide targets, including CT, IA, ME, MA, NH, NJ, NY, OR, RI, VT and the New England Region and Eastern Canadian Provinces (NEG/ECP) (see table below). Several other states are contemplating action at various levels. The most recent climate planning efforts (CT, MA, ME, NJ, NY, RI) are the most comprehensive, detailed, and implementation focused.

The Center for Clean Air Policy (CCAP) has been directly involved in facilitation, analysis and/or comment on a number of planning efforts (CT, MA, MD, NJ, NY, WI) and is familiar with others that have been completed or are in progress (CA, IL, ME, NEG/ECP, OR, RI, WA). CCAP's State Climate Change Roundtable (a group of 15 leadership states, one county, two local governments, and three state-based organizations that have met regularly since 1998) has been an important source of shared information about these efforts. CCAP has also been involved in international climate mitigation plans and trading systems related to the Kyoto Protocol in the European Union, Eastern European nations, and some developing nations.

A number of patterns and key lessons have emerged from state and local climate planning efforts that relate to both policy and process. Top findings include:

1. **Lead from the top.** Most plans developed in the 1990s involved little, if any, involvement by governors or cabinets, and were not implemented at any significant level. Plans created with the direct backing of governors and cabinet officials have fared better

and led to significant institutional and market changes. State agencies and programs play a critical technical role in climate mitigation planning, but cannot substitute for political leadership at the highest levels. Legislative leadership is also crucial to adoption of measures requiring new authority or funding. Invariably, comprehensive plans have identified priorities requiring legislative action. Processes often require intervention from the top to keep them on track and respond to unexpected events. Given the range and difficulty of policy issues that need to be addressed, teamwork at the cabinet level is important.

2. **Set the right goals and parameters.** A number of threshold issues should be addressed prior to the launch of a process. Other parameters can be proposed to stakeholders and finalized at the beginning of a process. Potential goals include: the desire for implementable solutions (and a commitment by the state to act on them); the level of effort envisioned (and its metrics); the level of consensus and public support desired; and deadlines. Key parameters include: scope (coverage of sectors, gases, policy actions, role of the state and other parties (stakeholder v. advisor); level of public participation; legislative involvement (during and after recommendations); establishment of targets (statewide and/or sectoral); quantification for actions; method of setting goals and targets; decision criteria; stakeholder role and selection; the meeting schedule; and budget constraints.
3. **Move one step at a time.** States have not had good luck jumping into GHG plans without first addressing a number of preliminary organizational and political issues. Many successful processes have been preceded by efforts to address energy, air quality or other issues, and then evolve to a more formal focus on climate change. Climate plans are typically the culmination of a much longer process of capacity building, public outreach, and action on related issues (e.g. energy efficiency, renewable energy, or transportation efficiency). In reality, many of the major elements of comprehensive GHG plans are typically well underway before the planning process starts and are folded into a comprehensive framework. This includes preliminary analysis of GHG inventories, baselines, and analysis of key actions at the sector level to flag key issues.
4. **Start with the big picture.** Policy processes have worked best when they start with a diverse and comprehensive framework of policy options and narrow using decision criteria that are acceptable to stakeholders (e.g. GHG reductions, cost per ton of GHG, ancillary issues). It is both difficult and risky to set policy priorities in advance of this process. Comprehensive discussions lead to a broader range of recommendations, lower costs, and greater public involvement than constrained efforts. In addition, pursuit of statewide GHG targets results in a zero sum game among stakeholders that results in positive encouragement from one sector to the next. For example, industries often press for transportation sector reductions to reduce their own share of the statewide burden, etc.
5. **Develop targets and timetables.** Numerical targets and goals for *individual programs* have been essential for successful implementation and tracking of GHG actions. *Statewide* GHG targets are harder to reach but important to set. Only one state (NJ) is on track to meet its target and timetable. Most other states have set targets based primarily

on quantified analysis of actions with an additional “stretch” to cover non quantified actions and to motivate the search for new measures. Statewide targets are typically non-binding and indexed to the NEG/ECP system, with a base year of 1990, stabilization at 2010, and a ten percent reduction by 2020. Numerical targets require quantification of baselines and mitigation actions.

6. **Quantify GHG mitigation actions.** Quantification of benefits (GHG reductions) and costs (dollars per ton of GHG) objectifies debate, opens the door to creative new options, and provides structure for planning toward a numerical target and tracking program. States that do not quantify actions have difficulty addressing hard policy issues (typically where the major GHG reduction options exist) and tend to revert to easy, low-GHG reduction issues. Quantification enables stakeholders to reach consensus on technical issues and assumptions first, and then proceed to agreements on alternative policy designs. This stepwise process tends to work more effectively compared to processes that jump into policy decisions without building a solid technical consensus. Quantification typically requires outside assistance on many issues, although standardized actions and data are becoming more available.
7. **Use a democratic decision process.** Public planning processes are more complex, time consuming and expensive (in the short term) but result in stronger recommendations, higher rates of implementation, and save time and money in the long term. As more states act and actions become increasingly aggressive, transparency and inclusion become even greater needs. States have typically involved stakeholders to some degree, and are increasingly using open public processes to avoid process related challenges. States have also tended to use nonbinding and informal process to avoid procedural traps that slow or water down recommendations. This requires development of a follow up process (typically internal) by the state to finalize a decision by the Governor and or legislature.
8. **Seek but don't mandate consensus.** Unanimous consent is difficult to reach on unsettled issues where stakes are high. Most “big-ticket” GHG reduction actions fit in this box. Where full consensus is required plans tend to revert to “no-regrets” or “low hanging fruit” actions that involve small-scale GHG reductions. When plans open up to majority and minority views, they result in more aggressive and diverse options, greater levels of overall effort, and more choices for ultimate adoption by states (assuming the stakeholder process is nonbinding). Development of iterative policy designs is important in reaching maximum consensus, and the iteration is critical. By allowing recommendations with less than full consensus to move forward states have expanded the set of recommended solutions, and given voice to a broader spectrum of constituencies.
9. **Get help and don't go it alone.** Most states do not have the expertise or capacity to tackle all tasks in creating a comprehensive GHG plan, but they bring important skills. As a result, GHG plans have typically involved teamwork of agencies, stakeholders, and third party experts under a central coordinator and or oversight group. Third parties provide stakeholder and technical work group facilitation, policy analysis, process design and management assistance, networking, and funding assistance. Selection, coordination and teamwork among facilitators and analysts is critical. Facilitators are more effective

when they are both expert *and* impartial, and must deal with a wide range of unresolved policy issues. Facilitation of policy agreements works better when tightly integrated with technical analysis and facilitation. Outside funding from foundations has been critical to cash strapped states needing assistance and public credibility.

- 10. Keep learning.** The perfect process has yet to be designed. External circumstances change, and every state is different. Processes should be reasonably flexible and adjust as necessary. They should not, however, easily stray from founding goals and parameters. Changes in public attitudes, markets and technology have opened the doors to many new policy options in the last few years that were regarded as infeasible recently. Technical support teams should, therefore, be capable of formulating new approaches that are customized to local circumstances. The level of GHG reductions required to stabilize the earth's atmosphere at safe levels in the next century is beyond our current capacity, and major paradigm shifts in attitude and technology must occur in the long term. Current solutions will not be enough, and continuous improvement by states will be necessary. Both processes and policies will need to change to keep pace with the need for progress.

1. OVERVIEW

Global climate change policy is not a “settled” political issue and may require pathbreaking actions by jurisdictions that choose to address it. However, public support and templates for policy action have grown to the point that many states and localities are now formulating comprehensive and quantitative targets and action plans (CCAP, 2002).

Climate mitigation planning is an intensive process that involves diverse constituencies, many policy actions, and potentially high political and economic stakes. To be successful, it requires optimal configuration of many organizational and process-design variables that together synchronize process, policy, and political goals. To date, no single model has been used by states, but a number of patterns are emerging.

The purpose of this paper is to identify (1) the key policy elements of a comprehensive state climate mitigation plan, (2) a set of process options for plan development that are based on experiences of a few states and localities that have undertaken serious climate planning efforts, and (3) emerging patterns among leadership states. The paper does not provide *recommendations*; instead, it is intended to provide an array of *choices* and *lessons learned* to inform development of mitigation plans. Political goals and strategies are not addressed.

This paper does not identify all conceivable process approaches. Additional references and brainstorming may be helpful in generating new options. In particular, papers by Adam Rose (2003) on mitigation action plan development and John Dernbach (2000) on state climate policy development are helpful companion papers (see Section 2, “Policy Options”).

To date, as many as 28 states have developed or are working on climate action plans (U.S. Environmental Protection Agency [EPA], September 10, 2003, appendix 1), which vary significantly in design and adoption. Most plans were developed in the middle to late 1990s in response to potential U.S. involvement in the Kyoto Protocol. They have generally focused on inventories and sketch plans rather than baselines, targets, or detailed implementation packages. Some states, including Connecticut, Maine, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and the New England region and eastern Canadian provinces (NEG/ECP) have set or are establishing statewide targets (see table). Several other states are contemplating action at various levels. The most recent climate planning efforts (CT, MA, ME, NJ, NY, RI¹) are the most comprehensive, detailed, and implementation-focused initiatives to date.

The Center for Clean Air Policy (CCAP) has been directly involved in facilitation, analysis or comment on a number of planning efforts (CT, MA, MD, NJ, NY, WI) and is familiar with others that have been completed or are in progress (CA, ME, NEG/ECP, OR, RI, WA). CCAP’s State Climate Change Roundtable (a group of 14 leadership states, one county, two local governments, and three state-based organizations that has met regularly since 1998) has been an important source of shared information about those plans. CCAP has also been involved in international climate mitigation plans and trading systems related to the Kyoto Protocol in the European Union, Eastern European nations, and some developing nations. These provide useful

¹ For the sake of brevity, relevant state action plans are referred to in this document by the corresponding state postal abbreviation.

comparisons to jurisdictional approaches to climate action in the United States (see CCAP papers).

Conclusions in this paper are drawn primarily from familiarity with states that have recently undertaken comprehensive planning processes for climate policy (CT, MA, MD, ME, NE/ECP, NY, RI) and, to a lesser extent, older or less comprehensive plans (CA, NJ, OR, WI). The paper notes some local and national programs and sector-specific state policies as well as emerging state efforts (WA). For a complete list of state climate change actions and individual programs, see CCAP (2002), EPA (2003), International Council for Local Environmental Initiatives (2003), Pew Center on Global Climate Change (2002), and Science Applications International Corporation (SAIC, 2003).

GOAL SETTING

States have found that it is important to set some key parameters at the outset of processes. The degree to which goals are established at the outset of the planning process for state climate plans varies, as does flexibility and response to stakeholder preferences along the way. This section summarizes some of the key goal-setting issues that arise at the outset of stakeholder processes.

- **Climate mitigation vs. other objectives:** States must decide on a convening purpose for GHG planning. Will the process focus on multiple objectives (e.g., air quality, economic development, energy), or will it be restricted to GHG issues and address other objectives only as ancillary issues? In practice, climate discussions involve all of these issues, but the convening authority, process, and participants can vary and have multiple objectives (e.g., state implementation plans, state energy plans). States may also wish to combine objectives (e.g., by addressing attainment of Clean Air Act requirements and integrating GHG actions into a broader plan, as in Wisconsin).
- **Sketch vs. implementation plans:** States must decide whether they are willing to develop more than scoping and technical assessments, and address implementation issues that will be required for adoption. In some cases, sketch plans have preceded detailed efforts (CT, MA) and set the stage for high-level political support and stakeholder processes.
- **Binding vs. nonbinding process:** Typically, state officials have not chosen to bind themselves by stakeholder recommendations (CT, MD, NY). On some sector-specific issues, however, states have launched rulemaking processes that are both formal and binding (e.g., California tailpipe standards and Massachusetts, Oregon, and Washington utility rules). States may also wish to differentiate between requests for options and requests for recommendations. They may only want options initially (MD).
- **Degree of consensus:** Decisions on consensus affect the design and duration of a process as well as political expectations. Typically, states have not required unanimous consent and instead prefer a spectrum of views (CT, MD, NY). In others, unanimous consent has been set as a goal (RI, WI), and participants are expected, sometimes implicitly, to support all final recommendations. In Maine, for instance, recommendations with unanimous

consent will be passed directly to the Governor and or legislature for action while non consensus actions will be forwarded to Maine Department of Environmental Protection for further deliberation.

- **Targets and quantification:** The degree and method of quantification required for baselines, actions, and targets affects design, participation, and output of a process. Without quantification, objective debate and negotiation on controversial issues becomes difficult (and ultimately rhetorical) and tracking of implementation programs is virtually impossible. It is important to get agreement on technical assumptions; many stakeholders and state officials do not have a clear sense of the source of many numbers. Some states that have pursued quantitative targets initially resisted them out of fear of accountability (NY). Others endorsed numerical indicators as a leading strategy (NJ indicators). Done properly, quantification has helped manage controversy and provide credibility to planning and subsequent requests for authority to implement (CT, NY, NEG/ECP, RI). Indeed, the technical component of a stakeholder process may be its most determining factor of success.
- **Executive vs. legislative implementation:** Legislative constraints vary among states and are important to planning. The choice of whether to allow stakeholders and agencies to make legislative recommendations comes up eventually in every process, and it is best addressed at the outset to avoid wasted time or conflicting expectations (MD). Some states have remained open to actions requiring new legislative authority but have reserved the right to make independent determinations of priority and acceptability (CT, NY). In some cases, legislation requiring statewide analysis (California petroleum dependence) or stakeholder process (Maine state targets) has preceded executive branch planning.
- **Open vs. closed process:** States must decide whether they want an open, democratic process involving outside parties or a more controlled, internal decision-making process. States must also resolve broader issues of public participation. Open processes have high levels of public credibility and support (CT, RI); provide greater buy in to final decisions; and result in a broader set of policy choices (when unanimous consent is not required), including policies that may be controversial (NY). Internal processes can be faster and more focused at initial stages (NJ). If an open and inductive process is preferred, states must decide what degree of guidance to provide the group on goals, decision criteria, and specific issues as well as parties' specific roles and responsibilities. States must also support open processes with appropriate oversight, facilitation, and technical and logistical support. They must be prepared to deal with issues of inclusion, transparency, visibility, and pressure for special treatment by particular stakeholders or factions (CT, MD, NY).

2. POLICY OPTIONS

DEFINITION OF COMPREHENSIVE PLANS

Fully comprehensive state climate mitigation plans include the following components:

- Consideration of important co-benefits and side issues
- Coverage of all GHGs
- A statewide target, with timetables and sectoral goals
- Linkage to local, regional, national, and international programs
- All necessary implementation mechanisms (voluntary and mandatory)
- Coverage of all emitting sectors
- An inventory and reporting system.

In practice, most states have developed plans that are limited in scope. The greatest limiting factors to a fully comprehensive plan appear to be data availability, funding for technical and facilitative assistance, time available for the planning process, competing political priorities, facilitator expertise, and degree of public support.

ROLE OF CO-BENEFITS AND SIDE ISSUES

Most GHG planning efforts have involved significant overlap with one or more side issues, including air quality (WI), energy (NY), and technology (CT). One of the advantages of this approach has been creation of a less politically charged atmosphere for key issues that can later be refined and integrated into a GHG plan (NY). Another advantage has been development of public and stakeholder support, particularly through technical education programs and events (CT). For convening purposes, climate change is sometimes seen as less salient than related issues, such as energy, technology, transportation, or air quality. Public opinion research can play a critical role in structuring the purpose, goals, and design of a process.

Some co-benefits issues that have been used to convene GHG processes include the following:

- **Advanced technology:** hydrogen fuel cells (CT)
- **Air quality:** ozone attainment requirements (WI)
- **Energy:** state energy plans (NY), legislative mandates on petroleum dependence (CA), and energy efficiency (MD)
- **Transportation/land use:** transportation reform and smart growth (ME, NY).

Other co-benefits that have been important in launching and framing GHG efforts are as follows:

- **Biodiversity:** forests and wildlife (CA, OR, WA)
- **Economic development and redevelopment:** urban redevelopment (MA, NY), technology export (CA, CT)

- **Land and water conservation:** water supply/saltwater encroachment in the Bay Delta (CA); loss of snow pack and water supply (OR, WA); decline of forest health as a result of forest fires, insect damage, and salvage logging (CA, ME, OR, WA); coastal protection (CA, CT, MA, NJ, RI); loss of fall foliage (CT, MA); cold water fishing (CA, CT, MA, ME, OR, WA).
- **Trade:** Brokerage of emissions credits (NY), technology exports (CA, CT, OR, WA)
- **Recreation and tourism:** Effects on winter sports and skiing (NEG/ECP, OR, WA), loss of fall foliage (NEG/ECP).

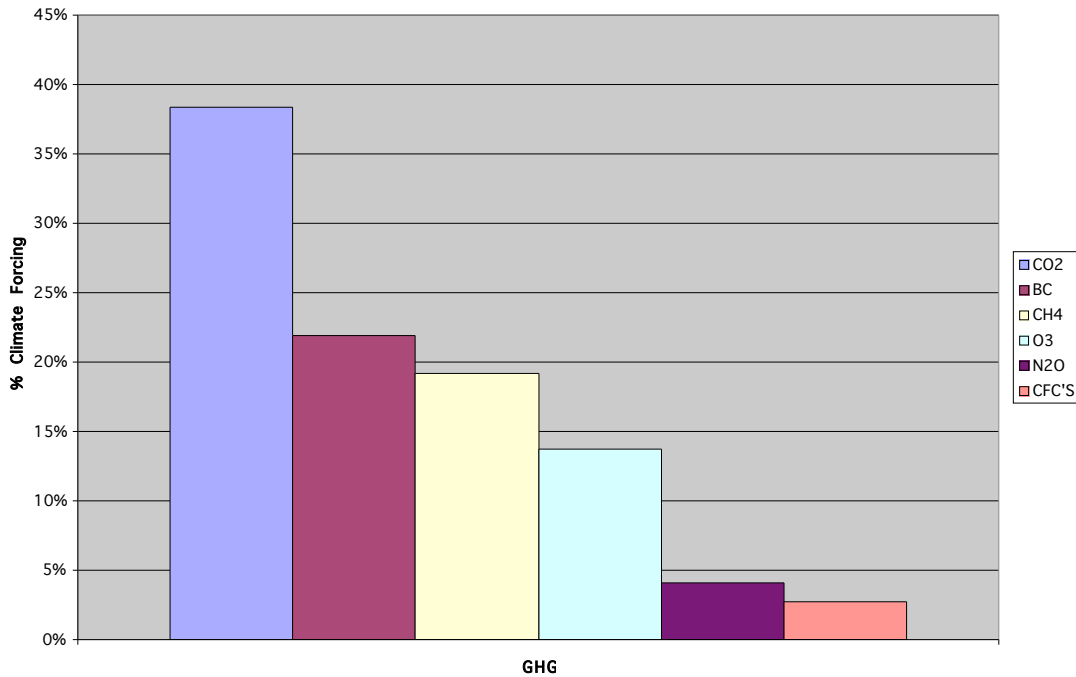
COVERAGE OF GREENHOUSE GASES

To various degrees, states have attempted to address the full suite of GHGs, which are listed below:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Perfluorocarbons (PFCs)
- Synthetic Fluorocarbon Six (SF-6)
- Hydrofluorocarbons (HFCs)
- Black carbon (potentially).

As a practical matter, most have only focused on carbon dioxide and methane due to the prominence of carbon dioxide in the GHG mixture, data availability, and familiarity with energy and waste related mitigation actions (MD, NY). Inclusion of other GHGs, where possible, has helped avoid a perceived bias toward fossil energy issues. Black carbon has emerged as a potentially significant cause of radiative forcing, second behind carbon dioxide, according to some estimates (Figure 2 below). Unlike GHGs, black carbon does not mix in the global atmosphere and has more localized, temporary effects. Because carbon particulates may have significant health effects, states may focus more on this pollutant in the future (CT, ME).

Figure 4: Climate Forcing of Greenhouse Gases (GHGs) Since 1850



TARGETS AND TIMETABLES

Measurable targets and specific timetables for implementation affect the long-term success of climate plans. Typically, plans without quantitative targets or tracking mechanisms lead to limited implementation (IL, PA), as do targets that are not perceived as realistic. As previously noted, a number of states have established cross-cutting action plans without targets or clear intentions to implement, and they have been accompanied by low levels of programmatic implementation. The institutional effect of targets, timetables and tracking programs can be significant.

Methodology for Setting Targets

Two basic methods—and a hybrid of the two—exist for setting statewide or sector-specific targets:

1. **“Bottom-up”**: Analysis and aggregation of specific, measurable actions (NJ)
2. **“Top-down”**: Establishment of a numerical target, often based on precedents by comparable jurisdictions (NEG/ECP, ME)
3. **A combined approach using an initial “straw” target**: A final target set based on bottom-up analysis and a “stretch” (bottom-up plus subjectively added percent) goal (CT, NY)

Each method has risks. Because analyzing long-term technology is uncertain, bottom-up targets can underestimate the potential for development of options in the long term and thus “low ball”

achievable targets (MD). They can, however, provide a clearer path to implementation. Top-down targets can be rhetorical and unachievable if they overshoot realistic potential for adoption. However, they may provide a strong organizing principle for driving additional actions and technology not considered during the course of climate action plan development (NEG/ECP). Hybrid approaches may not provide a clear or consistent method—other than facilitated consensus or political motivation—for adding stretch to the bottom-up goal (CT, NY).

Baselines vs. Targets

The method by which targets are set for states or individual programs (e.g., utility cap-and-trade) becomes important in negotiations over regional cooperation (i.e., *interstate* actions) and cross-sectoral cooperation (i.e., *intrastate* actions). One of the key criteria for mutual recognition of programs across jurisdictional or sectoral lines is a *comparable level of effort*—that is, the net difference between a gross target and a baseline. Both costs (dollars per ton GHG removed) and benefits (tons GHG removed) are important baseline variables. A common currency of reduction efforts between programs is required for trading or offsets. Baselines, therefore, are crucial to the establishment of targets as well as of trading or offset programs.

Facilitation of a consensus on baseline assumption, along with facilitation of assumptions for mitigation analysis and design, is one of the most critical tasks of a stakeholder process (see Section 3, “Process Options”). However, overemphasis on a perfectly accurate baseline may bog down the discussions of mitigation actions. A balance between accuracy and resource needs is often struck.

As noted earlier, baselines vary depending on many variables. Baseline methodologies and principles, however, can be harmonized (CT, ME, NY) to provide a comparable framework for planning and cooperation.

Economy-wide Targets

Several states have implemented or are establishing statewide targets. The presence and form of targets can significantly affect policy analysis, the planning process, and implementation approaches.

Statewide targets have been difficult to meet through bottom-up analysis of in-state actions. For instance, the New York Greenhouse Gas Task Force recommended 25 major actions across all sectors that together closed 55 percent of the gap between 1990 and its goal of 5 percent below 2010 baseline; it identified 53 percent of its goal of a 10 percent reduction below 1990 levels in 2020. The Connecticut plan (in progress) has identified 85 percent of the potential emissions reductions needed to reach a 1990 stabilization target by 2010, and it has identified 66 percent of the reductions needed to meet a 10 percent reduction below 1990 levels in 2020. Conversely, New Jersey is on schedule to meet its 2005 target of 3.5 percent reductions below 1990 levels.

New state efforts are likely to face similar challenges in setting targets that are based on specific mitigation options. This likelihood does not mean that targets are necessarily unachievable or irrelevant, but that methods of setting and meeting targets—and their actual levels—are very important (CT, NJ, NY).

Sector-Specific Targets and Goals

Sector-specific GHG targets and goals for specific implementation and tracking programs can be critical to establishment and success of GHG action plans. Several sector-specific programs that have measurable performance standards are now involved in rulemaking or implementation phases, including the Massachusetts power plant offset rule; the New Hampshire power plant rule; Northeast utility cap discussions; New York transport emissions reporting; New Jersey covenants; California tailpipe standards; New York Renewable Portfolio Standard; and Washington power plant controls (see CCAP, 2002 for further discussion).

Mandatory vs. Voluntary Targets

To date, no state has set a binding GHG target for a statewide plan. However, binding targets have been set for some sectors and specific programs, as noted above. State climate plans typically involve a combination of mandatory and voluntary mechanisms under a voluntary state target. This portfolio approach (CCAP, 2003b; see also Dernbach, 2000) raises potentially complex issues for accounting and crediting of actions between sectors and jurisdictions (discussed later), but it offers a pragmatic path for addressing a wide variety of issues. It has become the preferred model for jurisdictions everywhere (CCAP, 2003b). Scoring and reporting on progress are important to building momentum toward new measures.

Single vs. Multistate Targets

Theoretically, targets can be set for aggregations of states, and interstate programs for burden sharing or joint action can be developed. To date three multi state (i.e., regional) GHG programs have been launched. The NEG/ECP agreement set regional targets and timetables using a top-down method and established a series of policy committees to develop templates for mitigation options. Committee approval of options requires unanimous consent; state adoption of those options is voluntary. This approach relies on a strategy of sharing and peer pressure. It has had limited success in developing mitigation actions beyond the level of “no regrets” (i.e., those that are essentially free of cost), but it has been very effective at motivating individual states to launch comprehensive planning and or stakeholder efforts (CT, RI, MA, ME).

In May 2003, following recommendations from the state’s own stakeholder process, New York Governor Pataki invited nine northeastern governors to join forces in creating a regional cap-and-trade program known as the Regional Greenhouse Gas Initiative (RGGI). Implementation of this program will likely require individual states to create programs that are mutually recognized by other members of the region and allow companies within those states to trade with each other to meet commitments. This process is just starting.

On September 22, 2003 the states of Oregon, Washington, and California agreed to launch of a cooperative effort to develop regional programs in several key policy areas, including ports, vehicle emission standards, power plant standards, and development of a company registry. Details have not been worked out on links among individual state efforts, but presumably they would lead to mutually recognized programs in each state with mechanisms for trading, shared action or other recognition.

Caps vs. Rate-Based Targets, and Hybrids

Targets can be expressed in absolute or relative terms against a base year or a base rate. Absolute targets typically are structured as a percentage reduction against 1990 levels in 2010, 2020, and beyond (CT, ME, NEG/ECP, NY, OR, RI) and have the advantage of environmental certainty. Rates can be indexed on a per capita GHG basis or on a per gross state product basis and have the advantage of accommodating growth. To date no state has set a rate-based target at a statewide level, but some individual programs (e.g., Massachusetts power plant output standards, California tailpipe standards) are rate based. Reporting systems can convert rate-based caps to absolute emissions levels (and vice versa) to provide a common currency for tracking and crediting of comprehensive plans. Other reference bases are worthy of consideration, such as energy use and population (see, e.g., Rose & Zhang, in press).

Flexibility and Cost-Saving Mechanisms

Because GHGs mix quickly in the global atmosphere, mitigation actions have identical effects regardless of location. As result, low-cost actions in one jurisdiction may be of interest to reduction goals in another. Trading or joint actions between jurisdictions or between entities within them may open the door to lower cost options than would otherwise be available. Several studies and experiments suggest that the savings can be quite large.

A number of policy options have been identified to provide flexibility and cost savings to parties that are under compliance targets; these options are well documented in the literature and include trading, offsets, baseline adjustments, banking, and borrowing. States have detailed experience with NO_x and SO₂ trading, but have only recently focused on GHG rules (MA, NH, OR, WA) and related flexibility (e.g., Northeast states utility cap discussions, California tailpipe standards; for additional information on trading and flexibility, see CCAP, 1997; CCAP & Foundation for International Environmental Law and Development, 1999 Rose, 2003; and Rose & Oladosu, 2002).

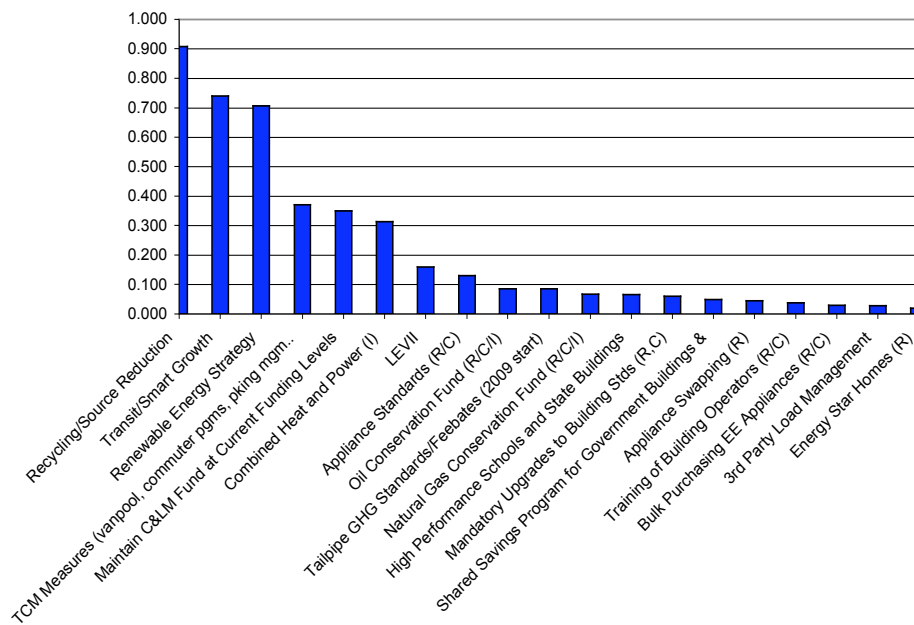
ACTION PLANS

State action plans fall into two categories: comprehensive and restricted. Comprehensive plans cover all major sources of emissions and typically include the following sectors (or some variant thereof):

- **Transportation:** vehicle efficiency, low GHG fuels, reduced travel demand
- **Power generation:** low-GHG supply options (e.g., renewables, advanced technology), demand-side efficiency programs
- **Residential:** buildings and appliances
- **Commercial:** buildings, equipment, and processes
- **Industry:** buildings, equipment, processes and distribution
- **Agriculture:** waste management, production process, soil management
- **Forestry:** waste management, silviculture (fire, disease, harvest), forest and soil protection
- **Waste management:** capture and flaring of landfill methane, waste-to-energy conversion, recycling

As noted earlier, few states have implemented planning efforts to address all sectors. Although that approach involves a more intensive process than single-sector approaches, it provides greater options for reduction and flexibility. It also creates an effective negotiating framework if combined with the pursuit of a quantitative target because of the “zero-sum game”—that is, as one sector balks at proportional levels of effort, other sectors must do more to compensate, and stakeholders exert peer pressure in response. This effect has been particularly evident in discussions on transportation reductions (CT, NY). Transportation now comprises the bulk of emissions inventories in many states (e.g., California, at 58 percent) and is the fastest growing sector nationwide (CCAP, 2003b). An important outcome of baseline analysis and stakeholder discussions has been reinforcement of the need for a maximum effort in this area (CT, MA, MD, ME, NY).

Preliminary data from the Connecticut Climate Change Dialog (Figure 3 below) shows an example of comprehensive action planning toward a specific target.



Geographical Coverage

Comprehensive stakeholder efforts typically identify actions that can be implemented at four levels:

1. **In state or locality only:** actions that a state or locality can implement unilaterally; typically the primary or initial goal of a process
2. **Multistate/regional:** actions that can more easily or effectively be implemented by a collection of states, such as appliance standards, utility caps, and ports
3. **National:** actions that can more easily or cost effectively be implemented by all states, such as industry-wide standards or technology funding

4. **International:** actions that can more easily or cost effectively be implemented by nations, typically driven by the need for access to low-cost mitigation options.

State processes generally have focused on in-state actions and identified regional and national programs only after exhausting in-state options (CT, NY). The degree to which states have moved beyond in-state issues depends on the level of motivation from a gap in a target and the amount of time and technical expertise available. Typically state processes start with an assumption that although federal programs ultimately might be more effective in many action areas, there is a need to move forward absent federal action (CT, ME, NEG/ECP, NJ, NY, RI).

One point that is often not well understood at the outset of state planning processes is the role states might play under national climate legislation. Indeed, one common line of opposition to state planning efforts is the notion that the federal government is the more appropriate authority for GHG action (MD, NY). States have responded, among other ways, by suggesting that a significant degree of state delegation will likely be involved in a federal approach (consistent with the Clean Air Act) and that future national programs are likely to be developed sooner and better if led by state action (CT, NEG/ECP, NY). In addition, states are likely to identify low-cost or revenue-generating options that will be lost if they wait for federal legislation. Based on experience with past legislation, states and the companies within them are likely to fare better in future equity judgments by Congress if they act prior to national legislation and track reduction efforts clearly.

Policy Mechanisms

State action plans typically incorporate a variety of implementing mechanisms for policy options due to the diversity of emissions sources and state authorities.

- **Administrative vs. legislative:** Comprehensive plans may result in actions that require new legislative authority. Actual planning efforts have been mixed in this regard; some have been deliberately limited to actions that can be implemented under existing authority (MD), whereas others have intentionally involved legislative recommendations (CT, NY). Planning approaches that exclude legislative implementation issues may not avoid legislative oversight and action altogether. Lack of attention to legislative proposals by the executive branch may encourage legislative oversight and action.
- **Single vs. multiple implementation mechanisms:** Theoretically, a comprehensive GHG reduction plan could be based on a single crosscutting policy mechanism, such as a carbon tax or “upstream” cap-and-trade system (i.e., caps set where carbon fuels enter the economy). No jurisdiction inside or outside the United States has adopted this approach for the entire economy, although some European countries and Japan have adopted carbon taxes for specific sectors or groups of companies. Instead, states have opted for a combination of mechanisms across a variety of sectors in a “portfolio” approach (see CCAP, 2003b; Dernbach, 2000). Controls or incentives under those systems occur at the end-use level (i.e., “downstream”), as opposed to upstream.
- **Voluntary vs. mandatory programs:** States have tended to combine voluntary and mandatory programs, depending on the sector and its circumstances. One of the major tasks

of a planning effort is to sort through a long menu of potential actions and policy mechanisms to determine which items are appropriate for the state in question and to identify which gaps must be filled with new approaches (CT, MD, ME, Puget Sound). This is a critical task of facilitation (see Section 3, “Process Options”).

1. *Mandatory* policy mechanisms include the following general categories:
 - Caps and standards
 - Regulations
 - Covenants
 - Funding restrictions.

2. *Voluntary* policy mechanisms include the following general categories:
 - Funding assistance
 - Information and education
 - Voluntary agreements.

INVENTORY AND REPORTING SYSTEMS

Inventory and reporting systems link action plans from a variety of sectors and track progress toward goals and targets. They coordinate a variety of programs under a coherent, comprehensive framework and provide measurable results. Such systems require the ability to consistently count emissions from a variety of sources and avoid double counting. EPA has developed standard inventory procedures, but state tracking systems typically require more detail at the subsector, program, and entity levels than specified by EPA methods. In some cases, this detail is provided under other mandates, such as Clean Air Act Title V requirements for energy and criteria air pollutants by major sources; CO₂ levels are easily derived from those measures (CCAP, 2003b). State environmental disclosure laws (NY State Environmental Quality Review Act (SEQRA) or state implementation programs (under the Clean Air Act) are often viewed as a natural opportunity for integration of a CO₂ inventory at a state level under an existing multisector framework. In some cases, states have opted to create new reporting requirements for tracking and accounting, such as effects on transportation (CCAP, 2003b).

Several states have enacted registries that, to various degrees, track emissions and establish baselines (EPA). Some efforts were intended to *induce* private-sector actions in the absence of state plans (CA), as opposed to *implementing* actions required in state plans (NY). Registries fulfill part of the inventory and reporting function and are typically used for private entities. They do not track public programs, small private sources of emissions, or all emissions sources—which are critical to climate mitigation plans. The California registry, for instance, tracks emissions from private entities under a standard protocol, but it does not forecast emissions baselines for those entities or imply creditable actions from emissions. The Northeastern States for Coordinated Air Use Management process is evaluating the use of the California registry for New England States. The New York GHG Task Force outlined numerous issues to be addressed by a state climate registry (CCAP, 2003a), including implications for trading, credits and offsets (see also CCAP & FIELD).

3. PROCESS OPTIONS

Policy goals and framework choices have a major impact on the design of optimal policy development processes. Processes tend to work best when policy needs are considered in advance, but not all issues must be resolved at the outset. Some issues can be framed initially, then implemented with continuous feedback (CT). A number of important process decisions are discussed below.

STATE DECISION MAKERS: WHO'S IN CHARGE?

As noted, comprehensive planning efforts typically conclude that *both administrative and legislative actions are needed to address climate mitigation goals*. Existing authority is often limited with regard to mandatory GHG controls, and voluntary programs are limited in effectiveness. States must decide at some point whether planning processes will be open to both avenues or will be limited to executive or legislative branch authorities. This decision has implications for the degree and form of legislative involvement. Planning efforts are typically led by governors after an executive- or legislative-branch decision to mandate a GHG plan.

Legislative Involvement and Coordination

The options for legislative involvement in an executive branch planning process include the following:

- **Legislative stakeholders:** This group includes party or committee leaders and interested members.
- **Legislative observers:** This group consists of committee or personal staff.
- **Legislative briefings:** This group involves committees or personal offices.
- **Liaison between executive and legislative branch offices:** Typically, this role includes the governor's office, key agencies, or third parties.
- **Public observation and input:** Transparency and inclusiveness often alleviate legislative concerns raised by constituents.
- **Analysis and discussion of bills and legislative alternatives:** Legislative proposals can be raised in technical work groups as potential options, or they can be mandated for consideration.

Executive Branch Leadership

In some of the earlier climate mitigation plans, executive branch involvement was nonexistent or limited. Recent climate mitigation plans, however, typically are chartered and led by the executive branch at one or more levels, including the governor, cabinet, subcabinet, agencies, or independent agencies. For instance, in New York the governor's chief of staff co-chaired the stakeholder process.

Cabinet-level teams tend to be more effective at managing major crosscutting policy issues requiring high-level negotiation and commitment than are individual officials (CT, NY). Teamwork by multiple cabinet officials can be especially effective on legislative issues. In some

cases, quasi-public entities can chair cabinet-level teams in a relatively independent fashion. The Governor's Steering Committee in Connecticut is chaired by the CEO of Connecticut Innovations (the administrator of the state system benefit funds). This position is politically independent and well respected by stakeholders. This arrangement has provided the chair with an effective ability to manage cabinet-level issues for the governor.

Announcement and Oversight Options

Some configurations for chartering and overseeing the policy development process include the following:

- **Governor or cabinet official announces and oversees process:** Questions are raised if the governor does not assume direct responsibility for convening a process that will ultimately require decisions at his or her level (CT, NY, MD). Northeastern utility cap discussions, for instance, were initiated through a letter to other governors by the Governor of New York, and subsequent discussions were announced by the New York Department of Environmental Quality (DEQ) secretary. Oversight may also be by a cabinet team or steering committee, as with the Governor's Steering Committee in Connecticut.
- **Governor's office or cabinet co-chairs process with a facilitator:** Governor's staff and Cabinet may not have the time or expertise to effectively oversee or facilitate a process, but can effectively team with a neutral facilitator (NY).
- **Agency chairs and oversees process:** Agencies (below cabinet) typically lack the clout to manage GHG processes alone and are more effective in overseeing technical elements of a planning process. In most cases, an interagency team is formed under leadership from the governor or cabinet (CT, MD, NY). If a single agency is given sole responsibility, it may become isolated and lack political support on issues of jurisdiction by other agencies, such as transportation, utility regulation, agriculture, or procurement. Interagency teams tend to be more effective at developing comprehensive plans.
- **Quasi-public agency chairs cabinet steering committee for governor:** This method works well if the chair has an effective relationship with the governor and cabinet, and is respected by the public and key stakeholders (CT).
- **Third-party (nongovernmental) facilitator convenes and chairs state process:** Third parties do not have credible authority to convene or oversee a state decision making process unless there is overt support by the Governor. More appropriately they participate in an advisory role or as stakeholders. This is particularly true where they act as advocates in the state political system. However, nongovernmental groups may convene organizational discussions that are helpful in informing the formation of a state process (CT, ME, RI).

POLICY INPUT: MEMBERS OF THE ROUNDTABLE

States must decide on internal or external processes. External processes may involve agencies, stakeholders, the public, the media, and outside experts in climate policy development to various degrees and at different stages of the process. In general, a higher level and frequency of outside participation increases the level and speed of downstream consensus on issues (CT, NY, WI). This approach requires more intensive facilitation and planning at the early stage of a process, but it reduces iterations at later stages and increases the probability of state and legislative adoption (CT, MD, NY, RI).

Interagency vs. Stakeholder or Public Participation

Some states have created processes that are relatively closed, whereas others have created open processes that include stakeholders and the public. When processes are restricted to agencies, they may be followed by some public or legislative review (MD).

Stakeholder groups typically include representatives from the following organizations:

- Nongovernmental organizations (NGOs)
- Industry
- Academia
- State government
- Other government (local, regional, federal, international)
- Citizens
- Legislators.

Key Issues

Issues that arise during stakeholder selection include the following:

- **Who picks stakeholders: the state, a neutral third party, or the stakeholders?** States have generally preferred to have final say on stakeholder selection to ensure appropriate representation. States have varied in the degree to which they have conferred with outside parties on stakeholder selection. In New York, the stakeholder selection process was relatively closed. In Connecticut, the process was open to nominations and preceded by a summit involving many stakeholders.
- **Role of state agencies: advisors or stakeholders?** The state must decide the role of agencies in the process. If they participate only as advisors, they cannot support or reject proposals (but they can make decisions in subsequent internal deliberations). If agencies are voting members of the process, they can strongly influence outcomes, but they also commit themselves more directly to the recommendations of the stakeholder group (CT, NY).
- **Individuals and companies vs. associations:** Associations bring established positions to the table and have less flexibility to think outside the box. They do, however, represent constituencies that are important to determinations of political feasibility. If they are not included as stakeholders, they can be included on technical work groups or as public observers (CT). Member companies are a good alternative (NY, CT, NJ).

- **Size of the group:** Groups of more than 40 individuals are difficult to facilitate (MD). If additional parties are included, some of the more effective options include public observer status, participation on technical work groups, public meetings for review and input, and Web-based information sharing and feedback (CT, RI).
- **Proactive vs. reactive role:** Two distinct facilitation styles have been used or contemplated:
 - Stakeholders periodically review the products of a work group or consultant and provide guidance for next steps. This role is relatively passive.
 - Stakeholders participate on specific technical work groups (along with technical experts and public representatives) and make recommendations to a larger stakeholder forum on data, methods, and policy design (CT, ME, NY, Puget Sound, RI). When stakeholders are less involved in technical decisions, processes may not resolve controversial issues and fail to generate buy in to the technical analysis and the recommendations that follow.
- **Continuity:** To be effective, stakeholder groups must climb a steep learning curve and develop shared commitments to progress. This requirement is difficult to achieve if representatives shift between meetings or the process is too short. The degree of consensus achieved in stakeholder processes appears to be directly related to the number and quality of technical discussions. Quality is a function of available information and expert facilitation.
- **Support of process and goals:** If too many groups oppose an open process, they may align into factions that severely constrain the process, either by boycott (sometimes subtly) or block voting.
- **Degree of expertise:** Stakeholders typically are not experts in all climate policy areas, but they eventually need to understand issues at a reasonable level of detail. They must be willing to invest the time it takes to reach this level of expertise, and not all interested parties are willing to do so.
- **Vested interests:** Most interested parties have some vested interest, which should be openly understood and balanced during stakeholder selection.

Technical Experts

States have incorporated expertise from universities, NGOs, consultants, individuals, and companies into climate policy development processes in a variety of ways:

- Initial understanding and framing of problem
- Technical education on policy options
- Response to skeptics
- Liaison with stakeholders and agencies on science and policy
- Scoping of baselines and actions
- Development of policy proposals

- Analysis of stakeholder or agency proposals
- Technical review of proposals and draft decisions
- Participation in stakeholder processes, either as advisors or stakeholders
- Facilitation of stakeholder processes or specific parts of processes
- Facilitation of technical work groups on specific proposals
- Review of technical assumptions by technical work groups.

Investment in technical support and education appears to be strongly correlated with success in resolving new and difficult issues (CT, NY). One particular area that stands out is the reduction of transportation demand and related land use and infrastructure spending issues (CT, NY). Another key issue is establishment of a common understanding of the GHG emissions problem and a comprehensive framework for solutions (CT, NY, Puget Sound). Agreement on data sources and methods has been critical in many areas, including the use of dispatch modeling to understand electric utility options (CT, NY).

Public Input

The desire for public input in stakeholder processes appears to be growing (CT, MD, ME, RI). States have incorporated public input into climate policy development in a variety of ways:

- Public citizen stakeholders
- Public observers of stakeholders or interagency groups
- Public participation on technical work groups
- Public review and input of stakeholder or interagency process
- Media coverage
- Web posting and input
- Surveys and opinion research.

CONSENSUS BUILDING

As noted, the degree of consensus desired by the state at the conclusion of a process is a critical variable that needs to be addressed at the outset. This decision can be made unilaterally by the state (NY) or with feedback from stakeholders (CT). A unilateral approach (NY) allows for rapid startup of the process and a clear method for responding to process-related questions, but it results in somewhat reduced stakeholder ownership and trust. Under a consultative approach (CT), the state establishes initial goals (e.g., unanimous consent is not required, and alternative views are recognized), and rules for developing and measuring consensus are facilitated with stakeholders and the state. This approach takes longer, but it tends to be more strongly supported as the process unfolds.

The following sections describe issues related to consensus building.

Formal vs. Informal

Statewide climate plans are typically informal and occur in advance of formal program development, rulemaking, or legislative actions. A few recommendations may involve new or existing rules or legislative actions (e.g., the Massachusetts offsets rule, the Connecticut

generation performance standard), but they typically follow an informal process that sets priorities within a general plan. Legislative recommendations are generally developed in a package format and are divided into tax and spending categories when finances are involved. Stakeholder processes may be timed to provide recommendations in advance of a legislative session (CT).

States may create formal advisory or input processes for climate policy development (as they do in other policy areas), but they have opted not to do so to preserve flexibility in process cost, design, speed, timing, and participation and to avoid binding recommendations.

Binding vs. Nonbinding

Development of statewide climate plans has not involved formally binding processes (as noted above), but some approaches have implied binding commitments in cases in which stakeholders were asked to reach unanimous consent (ME, RI, WI). Downsides of this approach may include constraints on resolving controversial issues (and default to “low-hanging fruit” options) and creation of an easy target for opposition groups (i.e., minority views can block unanimous consent).

Other states (CT, MD, NY) have created processes that are explicitly nonbinding. After stakeholder or agency recommendations are made to a cabinet-level group, the group enters subsequent deliberations on final recommendations to the governor. In some cases, timelines for this decision path are explicit (CT); in others, it is not (NY). If the decision path of binding decisions that follow a nonbonding process is clear, stakeholders take the process more seriously and devote more resources to its success (CT). Where follow-up processes are unclear, stakeholders may reserve input and support (MD).

Technical vs. Policy

Two important levels of consensus exist: (1) technical agreement on data sources, quantification methods, and technical feasibility of options and (2) political agreement on policy design alternatives and implementation mechanisms. In some cases, the two steps are not separated clearly, in which case policy agreements often get bogged down in disagreements over basic technical assumptions (e.g., which economic growth rate to use, the realistic degree of market penetration for an option, the effectiveness of a waste conversion technology, or accuracy of a market simulation model).

When technical and policy agreements are phased (technical agreements first, then policy agreements), later stage policy agreements have a better and broader chance for success (CT, NJ, NY, RI). Phased processes are longer, more deliberative and more resource intensive (in terms of data and analysis), but they also can be faster and cheaper in the long term by reducing iterations on alternative data and policy design (CT, NY).

A facilitator’s ability to facilitate technical and policy agreement is a critical variable in choosing providers of facilitation services (see “Facilitator Choices,” below).

Approval Levels

As noted earlier, the desired level of consensus is an important parameter for a planning process. Choices tend to focus on either (1) unanimous or virtual consent or (2) different levels of support, including minority views.

When unanimous consent is desired, processes tend to lead to one of two results:

- Policy recommendations are noncontroversial and are quickly reached (and typically provide low GHG reductions).
- Processes are protracted and expensive due to the difficulty of achieving consensus. In practice, minority factions exist on almost all difficult issues and can easily block consensus. In some cases, facilitation of alternative design or implementation scenarios can resolve those conflicts and produce unanimous consent (e.g., New York transport recommendations), but this step is difficult to implement without the option of reverting to a minority recommendation. If a process requires unanimous consent, disgruntled factions know the *best alternative to a negotiated agreement* is no recommendation, but their best alternative shifts to an action alternative when a recommendation by others can go forward without them (Fisher & Ury, 1991).

When minority views are accepted, they tend to fall into four categories of agreement: unanimous (no opposition), supermajority (significantly more than 50 percent), majority (more than 50 percent), and minority (less than 50 percent but significantly more than none).

Note that the length of a process can play an important role in the degree of consensus possible. Experience with facilitated processes that involve various levels of stakeholder expertise indicates that a steep learning curve exists for many participants (CT, MD, ME, NY, RI). The early stages of a process typically involve substantial technical education on a range of science and policy issues, and it is difficult to have meaningful policy negotiations during this period. (A preparatory phase for stakeholders may help bridge this gap.)

For example, in New York no public education effort preceded the formation of the New York GHG Task Force, and it took 18 months to develop a final plan. In Connecticut, a year-long planning and outreach process culminated in a climate summit comprising government, industry, and NGO leaders and experts. The Connecticut Climate Change Process will deliver a similar report in a 9 month period. Even with this preparatory process, a steep learning curve was found in participants' understanding of analysis and policies.

Measurement of GHG Reductions and Transparency?

A variety of formal and informal voting techniques exist and can be deployed during consensus making. Votes can be taken openly by voice or show of hands within a group (and in front of public observers), or voting can be done privately to avoid attribution. The latter approach can be important when stakeholders or agencies fear retribution. It is especially important to protect stakeholders from attribution on controversial issues when organizations are expected to depart from standing positions on issues and explore second-best alternatives. As noted, associations tend to have less flexibility than individuals or member companies.

Typically, governors and cabinet officials want to know the “political landscape” on key issues, but stakeholders do not want to be singled out by political bodies (CT, NY). When final recommendations involve minority views, reports have tended to make attribution by sector and general sentiment, rather than by individual positions per se (CCAP, 2003b). However, some processes (RI, ME) have required opposing views to document their reasons for opposition for later attribution. As a practical matter, the views of stakeholders become clear during participation, although some participants withhold views, prompting facilitators to draw them out. If too many stakeholders withhold views for too long, a process can die.

FACILITATOR CHOICES

Facilitators for state processes generally fall into two general categories: (1) *technical facilitators*, who assist with quantification and preliminary design of policy actions, and (2) *policy facilitators*, who develop agreement on final policy recommendations.

Ideally, these two functions should be seamless, but that depends on the structure of the process and the teamwork of the parties involved. When technical discussions are separated from policy discussions, processes can bog down or become superficial. For instance, when stakeholders are not involved in technical analysis and design and are limited to periodic review of technical results, they find it easy to dodge hard issues and have difficulty creating meaningful alternatives. When stakeholders are involved in the bottom-up design and analysis of options, they tend to be more committed, more capable of setting priorities, and more effective at negotiating alternative designs (CT, NY).

Facilitator Choices

As described below, facilitators for climate plans may include agency officials and staff, third parties, or combinations of the two, depending on need and preference.

- **Governor’s office:** The role of the governor’s office has typically been to charter and oversee a process, but not to facilitate. In New York, for instance, Governor Pataki’s chief of staff co-chaired the Greenhouse Gas Task Force with CCAP, although he was not present at most meetings and delegated facilitation to CCAP. His leadership played a critical role at key points. For instance, when some stakeholders questioned the governor’s commitment to a follow-up decision, he reiterated the governor’s intention to make binding decisions on the basis of stakeholder input. He also arranged for the governor to directly review draft recommendations during the process. When the September 11, 2001, tragedy struck, stakeholders questioned whether the process would continue, and he directed the group, at the governor’s request, to move forward, to be resourceful, and to “find ways to address the problem of global warming in good times and bad.” In short, he kept the process on track when it was called into question by circumstances or stakeholders.

In Connecticut, the governor’s office plays an arm’s-length role through a governor’s steering committee chaired by the CEO of Connecticut Innovations, a quasi-public entity charged with administering the state’s system benefits funds. The chair does not share

facilitation responsibilities, but he co-chairs stakeholder meetings and represents the state role in the process.

- **Cabinet:** Cabinet officials typically are more involved in policy facilitation and often have the assistance of staff or outside facilitators. In New Jersey, for instance, the Department of Environmental Quality commissioner chaired an internal process and external review-and-comment process by key stakeholders and experts.
- **Subcabinet:** Subcabinet officers (often agency directors) typically assist policy and technical facilitation in a hands-on fashion because of their familiarity with program details. They may have a co-chair role and use staff or third-party facilitators (NY).
- **Agency staff:** In some cases, line agency staff play a facilitative role, particularly on specific issues of jurisdiction or expertise. Some states (ME) employ full-time facilitators who can manage climate discussions; typically, they fall under the direction of a central facilitator.
- **Third-party neutrals and advocates:** NGOs and universities have provided facilitation services to part or all of climate mitigation plans. They generally provide facilitation skills as well as some degree of policy expertise, although their knowledge may vary significantly from issue to issue. It is difficult for either type of organization to facilitate effectively if it also engages in advocacy on related issues, particularly in the state political system. As a consequence, NGOs that lobby or take defined positions on specific issues generally face a conflict of interest and more appropriately play the role of stakeholder. Expertise on issues, however, does not necessarily imply advocacy, and think tanks, universities and institutes play this role in addition to research and public education.

Overlapping functions may also lead to perceived conflicts of interest. In New York, CCAP was directed under contract to provide stakeholder views on policies *as well as its own independent recommendations*; this dual role proved awkward on some key issues, such as utility caps.

Hybrid teams: A number of potential hybrid team configurations exist:

- State official and third party co-facilitate. (NY)
- State official directs third-party facilitators.
- Third party directs state facilitation team.

FACILITATION OF TECHNICAL ANALYSIS AND ASSUMPTIONS

A threshold question for climate mitigation efforts is the degree to which quantification of costs (dollars per ton GHG reduction) and benefits (GHG reductions and ancillary benefits) is required as a part of the planning process. Quantitative processes are helpful in objectifying debate and negotiation, and they increase the odds of implementation. Unlike qualitative approaches, quantitative processes are more resource and skill intensive, at least at the outset. They typically

involve several iterative stages of analysis and consultation (Rose, 2003). It is important to have agreement on assumptions and sensitivity analysis prior to seeking consensus on policy designs.

CCAP is most familiar with planning efforts that involve a significant degree of quantification of GHG reductions and costs. Some of the key issues at stake in technical facilitation are discussed below.

- **Policy issues.** As noted earlier, a comprehensive plan involves analysis of a GHG inventory, baselines, policy actions, and integrative assessments of combined policy scenarios.
- **Dealing with uncertainty.** Analytical decisions can involve significant uncertainty on key assumptions (see also Rose, 2003, for an extended discussion of cost–benefit issues and process). In many cases, such as baselines, uncertainty cannot be resolved empirically and requires a *consensus of reason* by facilitators, outside experts, or stakeholders.

CCAP prefers to facilitate technical agreements directly with stakeholders to avoid disagreement at later decision stages. In the case of dialogues in New York and Connecticut, for instance, stakeholders sit on technical work groups and make recommendations on data sources and methods for full stakeholder discussion and approval. They have both authority and responsibility for technical assumptions and have the assistance of technical experts and facilitators. Stakeholder perceptions of process and results are important.

- **Selecting tools.** Standard methods and data (i.e., templates) are available for an increasing number of climate mitigation actions and can be scaled and adjusted to new jurisdictions. Facilitation of these technical approaches is relatively straightforward. For other climate mitigation actions, however, standard approaches and data do not exist, and primary analysis is needed, particularly when markets, institutions, and preferences vary and economic stakes are high.

For instance, actions to reduce transportation demand may hold great potential for GHG and energy savings (CCAP Transportation and Climate, 2003), but the configuration of actions and implementation mechanisms depends on unique state and local relationships and institutions. Policy actions must be highly customized and involve intensive facilitation (CCAP, 2003b).

Electric power supply actions may also hold great potential for GHG reductions, but the configuration of local and regional (i.e., multistate) markets, institutions, and policies can have a decided impact on performance of policy options (CCAP, 2003b). In addition, ancillary issues, such as mining jobs and health risk, can be significant and entail more layers of analysis and technical agreement. Advance modeling can help facilitation by identifying key assumptions and sensitivities and providing an objective discussion framework (Connecticut and New York Integrated Planning Modeling).

Selecting Assistance Providers

As noted, a number of choices for technical facilitators exist.

- **In-house agency facilitators.** States have used agency experts or leaders to facilitate technical work groups. In New York, agencies led some technical work groups, and CCAP led others. In practice, both entities served in a co-facilitator capacity and managed logistics or discussions. This approach resulted in some inefficiency from redundant functions and additional coordination at the co-chair level. Intensive coordination among the co-chairs served to build consensus between agency leaders and facilitators on key decisions, however, and reduced disagreement in the large group.

One key issue is coordination between work group facilitators and the central facilitator of the stakeholder process. If this coordination breaks down, the process fractures. It is important that all technical facilitators report clearly to the lead facilitator(s) of the process, even if they come from different institutions.

- **Third parties (NGOs).** As noted, think tanks, universities, and consultants have been used as third-party facilitators, but advocacy groups have not. Instead, advocates have been invited to contribute expertise to processes convened and managed by others. For instance, CCAP has facilitated a number of stakeholder and technical work groups for states (CT, MD, NY, WI). Jonathan Rabb and Associates, Ltd. facilitated technical work groups in the Rhode Island GHG plan. In New York, a law firm facilitated discussions on inventory, reporting, and registry issues.

In addition to expertise, objectivity is a key issue. Opponents of controversial proposals can be expected to claim facilitator bias to constrain discussions (CT, MD, NY, RI). It is imperative for facilitators to guard against bias by using appropriate methods. One approach is to structure facilitation contracts with clauses for impartial facilitation (CT, MD). Another is recusal from discussions when facilitators have a specific stake in the outcome or an established and inflexible position. Facilitators may also need to disclose positions and clients.

In practice, stakeholders have been supportive of facilitation by policy experts who may have taken positions on policy approaches if those positions were derived from some objective process (academic research or expert consensus) and if they are part of an ongoing attempt to build an open body of knowledge (CT, NY, RI).

Hybrids. Any number of hybrid team configurations for technical facilitation can be developed, including

- Agencies That Co-Chair Technical Work Groups With A Third Party (NY),
- A Third Party That Directs Agency And University Staff (CT, ME, Puget Sound), And
- A State That Directs A Third-Party Facilitator And Consultant (MD).

Facilitation of Policy Design and Implementation

Facilitation of *policy consensus* is the final phase of a process that runs in parallel with *technical analysis and consensus*. Many of the issues germane to technical facilitation also relate to final policy recommendations, including objectivity, integration of technical and policy issues, and participation by stakeholders and experts. In general, processes that leapfrog these initial

technical steps and do not fully integrate technical and policy issues experience higher failure rates. Processes that invest more in technical facilitation and advance preparation usually require less policy facilitation to reach consensus (CT, NY).

- **Facilitator qualifications and techniques:** Policy processes are sensitive to the qualifications and techniques of policy facilitators and their support staff. In particular, processes are sensitive to the institutional biases of facilitators; the scope and depth of their issue expertise; their capacity to manage logistical, technical, and policy tasks; their commitment and reputation for democratic decision making; and their ability to team with others. Policy facilitators also must be adept at managing a highly visible public process and at interacting with high-level decision makers on sensitive issues.

The choices for assistance providers (as noted earlier) include in-house as well as third-party facilitators and an array of hybrid combinations. Some facilitating organizations provide technical analysis, whereas others do not provide technical analysis and must team with other parties.

- In New York, CCAP provided both facilitation (as a co-chair) and technical analysis; this dual role was helpful in integrating issues.
- In Connecticut, CCAP is only providing facilitation of stakeholders and work groups. This approach requires stakeholders and agencies to provide data analysis and technical support in coordination with CCAP. In practice, the capacity for this support function by the state and stakeholders has been limited, and CCAP has provided templates, standard data, and straw proposals to the process to move it along. A third-party technical consultant (such as a university or institute) would have helped fill this gap.
- In Maryland, SAIC was contracted to provide technical analysis; CCAP was later asked to bring stakeholder input to the company's analysis on a short-term basis. Stakeholders found it difficult to digest the issues at stake and confer adequately with the consultant. A longer, more integrated, and more iterative process probably would have resulted in a clearer set of discussions and recommendations.
- **Single vs. multiple facilitators and processes:** In practice, climate mitigation processes have relied on a single organization to facilitate policy recommendations by stakeholders with heavy state coordination (CT, NY, RI). Processes have typically used multiple technical work group facilitators who report to a central policy facilitator (CT, NY, RI) and who require substantial logistical support. Given the scope and scale of mitigation discussions, states may want to assemble larger facilitation teams in the future. This approach may strengthen a planning process, but it may also confuse it by having too many discussion leaders. Issues of coordination and support are important.

If states approach mitigation plans one sector at a time with the intention of linking efforts later in a comprehensive framework (NJ), they should identify ways to provide consistency between efforts, both in policy framework and consensus processes. In this area, states are interested in linking to regional efforts (NEG/EPC).

4. CONCLUSIONS

No single model has emerged as the preferred approach by states in developing climate mitigation plans, but some patterns are becoming evident, including the following:

- Blended stakeholder dialogues as a public input mechanism
- Bounding of policy goals in response to constraints
- Focus on CO₂ and CH₄, but expansion to other GHGs where possible
- Growing national and international awareness of state actions
- Increasing attention to regional, national and international partnerships
- Informal and nonbinding decision processes
- Integration of technical, policy, and implementation issues
- Integration with co-benefits and ancillary issues
- Oversight at the governor or cabinet level
- Reliance on a mixture of implementation mechanisms
- Transparency and inclusiveness of process
- Use of quantification and technical support
- Use of standard policy templates and data
- Use of third-party experts and facilitators
- Variation in legislative involvement.

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