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## THE COMPLEXITIES OF CARBON CAP-AND-TRADE POLICIES: EARLY LESSONS FROM THE STATES

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## EXECUTIVE SUMMARY

Trading of emissions under a cap-and-trade regime continues to receive prominent attention as a possible approach to reduce carbon dioxide emissions that contribute to climate change. This model draws heavily on earlier American experience with conventional pollutants such as sulfur dioxide. It has been embraced by a wide range of policy analysts and activists as a policy tool that can harness market forces and deliver substantial reductions at relatively low cost. The European Union has already launched such a system, known as the Emissions Trading Scheme, and the 110<sup>th</sup> Congress has featured considerable debate over comparable approaches, most notably the Climate Security Act sponsored by Senators Joseph Lieberman (I-CT) and John Warner (R-VA). But well before any federal legislation can be enacted, much less implemented, at least one regional cap-and-trade program, involving ten Northeastern states, has already begun operation through an initial auctioning of carbon allowances on September 25. In turn, thirteen other states, located in the Pacific West and the Great Lakes Basin, are considering similar strategies. This poses many important issues of federalism, as the federal government begins to play catch-up with states and will have to give thought to sorting out federal and state responsibilities. But the Northeastern experiment also affords an early glimpse into an American effort to launch a carbon cap-and-trade regime, the Regional Greenhouse Gas Initiative (RGGI). Many accounts of emissions trading programs simply assume that such policies self-implement since they are “market-based” and because of the widely-heralded success of the American trading program for sulfur dioxide. This account notes the considerable achievements to date in the multi-state RGGI process but also highlights important implementation challenges that face it as well as any plausible federal adaptation of a carbon cap-and-trade program in coming years. The lack thus far of serious federal-state dialogue over possible forms of intergovernmental collaboration or possible federal policy learning from early state experience may only accentuate the difficulties of future policy development and implementation.

## **The Complexities of Carbon Cap-and-Trade Systems**

The idea of developing a system of carbon emissions trading as the primary vehicle for addressing climate change was generated in the United States, pushed aggressively by American negotiators on their reluctant counterparts in deliberations leading to the 1997 Kyoto Protocol. This proposal was based on earlier American experience in transitioning from traditional command-and-control regulation toward more flexible systems that were used effectively to phase out the use of lead in gasoline and reduce sulfur dioxide emissions from coal-burning power plants. In the run-up to Kyoto, the United States consistently argued that this method could deliver cost-effective reductions in greenhouse gases. Despite resistance from the European Union and some other Kyoto signatories, the American case prevailed. The launch of Kyoto led to the exploration of a global mechanism for imposing a carbon emissions cap that would then allow for substantial trading among various emission sources to reach reduction targets with maximal flexibility and efficiency.

Ironically, this very concept is now embraced enthusiastically in the European Union but has been resisted thus far in Washington, D.C. In January 2005, the original 15 members of the EU launched their Emissions Trading Scheme (ETS) as a central plank in their strategy to meet Kyoto reduction targets. The ETS has experienced a series of implementation problems, stemming from flawed understanding of actual emissions and excessive allocation of permits to EU Member States. This has led to allegations of “windfall profits” for many European utilities and minimal evidence of demonstrable emission reductions thus far. ETS defenders contend that these implementation issues will be resolved in subsequent rounds as the program expands to cover the newer members of the EU and address more sectors of the economy. The 110<sup>th</sup> Congress has featured a flurry of new carbon cap-and-trade proposals, most notably the Climate Security Act, but neither the House or Senate have ever formally approved such a policy. Both presidential nominees have endorsed the basic tenets of this approach and some version of a cap-and-trade bill is likely to emerge as an important focal point of the 111<sup>th</sup> Congress, although the road to passage remains highly uncertain.

Federal inaction, however, is not the end of the American story for carbon emissions trading. Massachusetts established a carbon cap-and-trade program for within-state utilities in 2001 and New Hampshire followed with its own legislation a year later. These early steps prompted a number of other states to consider the viability of enacting their own version of such a program, using their powers for regulating air emissions and governing the environmental performance of electricity-generating utilities (Rabe 2004). One of the most

thorough review processes occurred in New York, in conjunction with a comprehensive analysis of various policy options for reducing greenhouse gases in the state. This review prompted New York Governor George Pataki in 2003 to formally invite his six counterparts from New England as well as governors of four other states to begin exploration of the viability of a Northeastern regional strategy.

After protracted inter-state negotiations, eight states agreed to establish and participate in RGGI by 2006 and two more entered the fold in early 2007. At least two other states and the District of Columbia continue to monitor the process and may consider membership in coming years. There is also periodic discussion about linking RGGI with somewhat similar initiatives emanating from other regions, such as the Western Climate Initiative (WCI) being guided from Sacramento. RGGI establishes a cap-and-trade system for carbon dioxide emissions on all power plants that generate more than half of their electricity from burning fossil fuels and produce more than 25 megawatts per year. The formal cap will go into operation in early 2009, set at a level of 121.3 million short tons of carbon dioxide, which is “approximately equivalent to 1990 emissions” (RGGI 2005). That level will be maintained through 2014, when the emissions cap decreases by 2.5 percent per year, designed to reach a 2018 level that is ten percent below current emissions. Still a work in progress, RGGI offers numerous insights into the challenges of taking an appealing policy idea and implementing it across jurisdictions and amid competing interests.

### **Attempting to Make Regionalism Work**

RGGI may rank among the most complex and ambitious regional undertakings in American history, either in environmental policy or in any other sphere. Its founders make no small claims for its potential impact; the December 2005 Memorandum of Understanding that serves as RGGI's founding document declares that “the Signatory States wish to establish themselves and their industries as world leaders in the creation, development, and deployment of carbon emission control technologies, renewable energy supplies, and energy-efficient technologies, demand-side management practices, and increase the share of energy used within the Signatory States that is derived from secure and reliable sources of Energy” (RGGI 2005, 1-2). Indeed, central figures within this regional process have laid claim to national, continental, and even international leadership in establishing RGGI as a viable model for carbon emissions trading that could warrant emulation nationally or abroad.

Meeting such lofty objectives will not be easy. But the construction of RGGI has been eased greatly by the substantial experience among participating

states with previous forms of emissions trading. All states were involved in the national trading programs for lead in gasoline and sulfur dioxide. But many RGGI states also gained unique experience in operating the first regional cap-and-trade system for emissions of air pollutants when the federal government delegated responsibility for reducing nitrogen oxide emissions to the Northeastern states in the 1990s. Working under the auspices of the Ozone Transport Commission, nine participating states ultimately pursued a path with some similarities to RGGI. This included a series of inter-state agreements that outlined a regionally-based emissions trading system and resulted in significant emission reductions with very high compliance levels and no discernible signs of adverse economic impact. Moreover, these states tend to have extensive working relationships between their respective lead departments for environmental protection and energy development, which proved essential in crafting RGGI. This has given these units a substantial edge over federal entities such as the federal Environmental Protection Agency and Department of Energy, which have no comparable history of collaboration and yet will need to invent ways to work together under any conceivable federal climate regime. Ironically, most federal cap-and-trade proposals say remarkably little about how these and other federal agencies might replicate the kinds of collaboration achieved among their state-level counterparts.

*Maximizing Flexibility.* The absence of any federal marching orders concerning the design of the carbon emissions trading system and the very broad language in much of the MOU left substantial room for state officials to weigh the pursuit of the intellectually optimal trading system against political realities and ways in which various provisions might be modified to sustain broad political support. Indeed, the various RGGI Staff Working Group subcommittees have continually tinkered with key design features. They have attempted to remain consistent with the overall goal of RGGI but take advantage of the latitude they had to try to keep every state—and participating state agency—on board. Contrary to much of the literature on emissions trading, which is dominated by economic analyses that have largely ignored political factors and imply that market-based emission trading systems largely self-implement, the RGGI experience demonstrates the necessity of deft political maneuvering to sustain multi-state and stakeholder coalitions. Bars of soap have been jokingly awarded to state officials who have insisted on “pure” decisions rather than temper them to reflect political pressures.

RGGI developers also attempted to navigate among a range of diverse stakeholders, each of whom potentially stood to lose or gain financially depending upon the definition of the cap-and-trade arrangements. This resulted in a dizzying set of provisions known as “early reduction credits,” “triggers,” “safety valves,” and “offsets,” each of which was designed to maintain flexibility in cap-and-trade implementation and sustain support from various constituents.

Some of these issues have yet to be fully resolved, despite years of deliberations and the current shift into implementation. In the case of early reduction credits, carbon dioxide generators who would be covered under the RGGI cap were adamant that they receive flexible terms for any early action between the signing of the MOU in 2005 and the launch of the cap in 2009. This would entail formal recognition of early reduction actions, leading to allowances that “would be issued in addition to the state budget.” This issuance of early credits has long been contentious in the phase-in of new regulatory programs, including those that have an emissions trading provision, but this willingness to add flexibility boosted support among states and firms that anticipated pre-2009 reductions.

Triggers and safety valves refer to a complex set of formulae, whereby any future increases above anticipated costs for emission allowances allow greater flexibility in compliance. This added flexibility might entail formal extension of deadlines for compliance or more liberal use of offsets to compensate for emission levels that remain within allowed levels. The list of activities eligible for consideration as an offset includes methane capture from landfill gas, re-forestation strategies to sequester carbon, and end-use energy efficiency, among others. Generators can use offsets to cover up to 3.3 percent of their reported emissions for any compliance period. “This number had nothing to do with climate science or economics,” explained a senior state official. “One group wanted a high number, another wanted no number. This basically split the difference.”

Every dimension of this process is contentious, guided by a blend of science and policy analysis but tempered by political calculations. Utilities generally favor maximal flexibility in all areas whereas many environmental groups fundamentally opposed the entire idea of offsets as antithetical to the mission of a cap-and-trade program. Policy development evolved within a multi-state Staff Working Group, with subcommittees assigned to each particular category. Once some degree of internal consensus was reached, public hearings were held that allowed for input from any interested stakeholder within or outside the region. At that point, the Staff Working Group revisited the issue and made further modifications, with the intent of assembling a package in the final model rule that could sustain regional support and win formal endorsement within each participating state.

Navigating each of these provisions is not unique to this particular emissions trading system but presents a particular challenge and opportunity for state staff working on a regional context. Individual staff must contemplate what is best for overall greenhouse gas reduction in the region, weighed against the interests of their particular state’s pressures from various stakeholders. Thus far, the staff-driven policy process has successfully struck a nuanced set of

agreements that have sustained a fairly broad and diverse coalition of support, using negotiations over each provision as a bargaining chip to hold together a large body of constituents. This political skill clearly draws on many years of prior experience for most of these state policy professionals, both in the design of previous emissions trading programs and regulatory programs intended to operate on a regional basis. An early sampling of likely complexities facing a federal counterpart emerged in the 110<sup>th</sup> Congress, given the flurry of proposals for special treatment from various industries, proponents of new technologies, and state governments seeking recognition of their particular circumstances (Rabe 2008). It is not at all clear that badly-fragmented federal institutions such as Congress can be nearly as effective as their Northeastern state counterparts have been in maintaining serious deliberation and reaching workable compromises, which will prove an enormous challenge for the 111<sup>th</sup> Congress and its successors if they intend to begin thinking seriously about climate change.

## **The Challenge of Sustaining Regional Comity**

The evolution of RGGI from George Pataki's 2003 letter of invitation to his gubernatorial colleagues into something approximating a full-blown regional system for cap-and-trade regulation of carbon emissions a half-decade later underscores the political feasibility of large-scale development of climate policy on a regional basis. Indeed, RGGI is clearly well on its way to joining the European Union's ETS as the world's second multi-jurisdictional entity to oversee implementation of a sophisticated emissions trading program to achieve reduction of greenhouse gas emissions.

At the same time, RGGI remains a work in progress rather than a finished product. Inter-state negotiations have continued over several years, with numerous issues requiring continuous renegotiation before being approved through appropriate political channels in each state. Some of the most significant challenges to sustaining multi-state collaboration and moving forward to implementation are outlined below and these underscore the challenges facing any expansion of RGGI to other regions or on a national basis

*Institutional Uncertainty.* RGGI has, in many respects, been a model of multi-state collaboration and cooperative networking between lead state officials. But translating this initial cooperation into a more permanent governance structure remains an ongoing challenge. During its first four years of operation, RGGI had little organizational form other than a State Working Group, a web site, and an ongoing set of stakeholder meetings that rotated from place to place. These years of deliberations focused primarily on many technical provisions,

from offsets to safety valves, with far less attention devoted to the question of longer-term institutionalization of this regional partnership.

The RGGI MOU did call for the establishment of a “regional organization with a primary office in New York City.” Such an organization would operate on a non-profit basis and be guided by an executive board with two representatives per state. According to the MOU, this body would serve as “the forum for collective deliberation and action among the Signatory States in implementing the Program,” with responsibility for managing emissions trading, allowance tracking, offsets development and implementation, and numerous other responsibilities inherent in the operation of an emissions trading program (RGGI 2005, 7-8). In July 2007, “RGGI, Inc.” was unveiled, a non-profit entity that followed the basic lines set out in the MOU. The organization has hired an executive director and is assembling a staff to oversee all aspects of implementation. This includes continued deliberation with all participating states and stakeholders while attempting to avoid the early mistakes from the EU. Thus far, the RGGI state coalition has held together and even weathered a decision by Massachusetts and Rhode Island to withdraw in 2005 before returning in 2007. Looking ahead, future federal agencies will not likely have to contend with state secession from the union but will have to reinvent many core activities. It is highly unclear whether such entities as the Environmental Protection Agency are prepared to tackle federal cap-and-trade legislation, as many state agencies have had far more support from elected officials to ramp up for climate policy implementation in the past decade and have demonstrated far greater ability to work under such a network structure of governance than their federal counterparts.

*Power Asymmetries and Sustaining Collaboration.* RGGI's progress to date has hinged on a high level of cooperation achieved through multiple rounds of inter-state bargaining. Indeed, the network of state policy professionals who comprise the core of RGGI has built on established relationships and facilitated this extended collaboration in an atmosphere of considerable trust. It displays many of the qualities of a robust epistemic community in domestic policy making (Montpetit 2003). At the same time, tensions have surfaced periodically within RGGI that reflect the relative imbalance of influence among member states and call into question whether New York has attained disproportionate influence and thereby dominated most key decisions.

This dynamic suggests a potential power asymmetry that has been mitigated in part by giving all states full participation in all regional deliberations and the right to decide unilaterally whether or not they will remain engaged in RGGI. Nonetheless, concerns have arisen among both moderate and small-



sized states about substantial New York influence on RGGI design. These concerns intensified during the hiatus from RGGI of the “second banana state” Massachusetts, although the Commonwealth’s subsequent return to the fold fostered greater balance. At the federal level, concerns have already begun to emerge about “rewarding” states that have taken “early action,” particularly those such as California with an expansive portfolio of enacted climate legislation and the largest delegation in the House of Representatives or those that might be represented by potential swing votes in the Senate.

These types of problems have continued to surface among RGGI participants, even after years of negotiation and in the final stages leading up to the initial allowance auction. In recent months, Connecticut’s Governor and Attorney General have squabbled over whether RGGI could be modified to rebate a portion of auction revenues to rate-payers, while New Jersey and three other states had to skip the initial auction process because of a failure to establish key regulations in time. Even New York Governor David Paterson, a long-time RGGI supporter, created a stir in September 2008 when he said the state might need to withdraw from the program because of a new regulatory review process and concerns that state-based businesses might move outside the RGGI zone in search of cheaper energy. Paterson later reiterated his support for continued involvement in RGGI but these continuing challenges underscore the complexity of sustaining collaboration into implementation. Similar design challenges are already evident in the early stages of developing a West Coast supplement to RGGI via the WCI.

*Circling the Wagons and Deterring Leakage.* Any regionally-based cap-and-trade zone will have to confront the challenge of “leakage,” whereby electricity produced outside the regulated area could prove less expensive given the absence of carbon regulation. This is an inevitable problem for many kinds of potential climate programs that lack a fully global scope. But it may be particularly salient in a region such as the northeastern United States where there is substantial movement of electricity across American state and Canadian provincial jurisdictions and no easy mechanism to encapsulate power generated exclusively within RGGI territory.

The current set of states that comprise RGGI already span three interconnected power markets, each of which is operated by separate transmission regions. A considerable portion of New Jersey sits within the so-called PJM Interconnection, which means that at least 12 states may feed electricity to its providers, only one of which (Maryland) is a RGGI signatory. For New York and many New England states, there are also a large pool of states outside RGGI that provide some portion of their electricity as well as Quebec and the Atlantic provinces. Canada has ratified the Kyoto Protocol but has a rate of

greenhouse gas emissions growth well above the United States and has struggled to put together its own federal cap-and-trade or any other serious climate policy (Rabe 2007). Many nearby state and provincial jurisdictions already generate electricity below the average price for power produced within the RGGI region; any potential cost increase in RGGI states due to carbon emissions trading could create a further incentive to import electricity and thereby bypass the carbon caps. Ultimately, the impact of significant leakage could be to neutralize any potential carbon reduction of RGGI and even create substantial sinks that could accentuate the attractiveness of electricity produced in non-regulated states and provinces. According to one skeptic from the Business Council of New York State: “We’ll have the worst of both worlds; higher energy costs in New York to implement a program that has no discernible impact on worldwide greenhouse gas emissions” (Arrandale 2008).

RGGI leadership is cognizant of this challenge and has been exploring ways to address leakage (RGGI 2007). This issue has also begun to surface in other regional initiatives, such as the WCI and a range of unilateral California efforts to impose its preference for emission reductions on states from which it imports electricity. But any likely policy response to leakage faces a series of technical challenges as well as Constitutional ones, given the limited ability of individual or collective states to restrict the movement of commerce (including electrons) across their borders.

*Allocating Allowances.* RGGI implementation was further complicated in 2007, when some RGGI states began to discuss the possibility of auctioning all allowances rather than adhering to its initial plan to distribute the majority of them free of charge. The concept of auctioning has enormous appeal in the eyes of most environmental groups and policy analysts, as it by-passes the possibility of some major ETS pitfalls and puts more pressure on emission sources to respond to the cap-and-trade system. But this RGGI shift triggered vehement opposition from many electricity generators and large consumers, who contend that this shift constitutes a late-stage “bait and switch” that deviated markedly from earlier agreements over how this process would unfold. “It is clear that the balance promised in the multi-state process has been lost,” lamented one set of utility and industry leaders in a 2007 statement. The RGGI allowance allocation issue underscores the enormous political sensitivity of this aspect of cap-and-trade policy development, particularly for as complex and ubiquitous an emissions source as carbon dioxide (Raymond 2003). Deliberations of the 110<sup>th</sup> Congress further underscore the sensitivity of this issue, amid debates not only over the auctioning option but the innumerable possibilities for allocating any revenue that might be generated by the federal government through such a process.

*Federalism without the Federal Government?* Perhaps the single most surprising dimension of RGGI is that such a complex, multi-state endeavor is being undertaken with remarkably little state government conversation with, much less engagement by, the federal government. There is, of course, ample precedent for multi-state ventures to operate without federal involvement, including the experience of neighboring renewable electricity mandates to attempt to work out common terms of definition and trade. But RGGI represents, in many respects, an extension of existing federal clean air legislation and experience in emissions trading to carbon dioxide. It involves a conscious decision by a collection of states to act in the absence of current or imminent federal action, as well as a decision by those states to bypass any formal interaction or negotiation with Washington, D.C.

Under other circumstances, one indeed might anticipate that RGGI would be a candidate for an interstate compact. This would allow for formalization of its provisions and provide a formal endorsement by the federal government. One can envision many scenarios, perhaps building on the NOx Ozone Transport Commission process, involving regional entities such as the Northeast States for Coordinated Air Use Management (NESCAUM) or even engaging the regional offices of the Environmental Protection Agency in constructive ways. Indeed, many scholars have deemed formal and constructive federal engagement as highly valuable to making regional strategies viable, serving as a catalyst for inter-state cooperation, an honest broker of information, and a safeguard against non-compliance by individual members (Butler and Macey 1996, 44-45; Derthick 1974, 214).

However, RGGI proponents have been understandably skeptical that they could secure formal support from Congress or federal agencies. They have instead decided, given these circumstances, that the initiative can best be handled through a MOU between state participants that is then ratified by actions of individual state governments and monitored by a non-profit regional oversight body. An enduring concern of state officials engaged in RGGI is that not only have federal institutions been non-supportive but that they might actually attempt to undermine their initiative. State officials frequently invoke the fear that the federal government will pursue some variation of a preemption strategy that attempts to strip state governments of any ability to develop a cap-and-trade system for carbon, either unilaterally or on a multi-lateral basis (Posner 2005; Teske 2005). Many proposed federal cap-and-trade bills introduced in the 110<sup>th</sup> Congress call for some form of protection for state policies that were put into operation prior to any federal steps. But many of these provisions are extremely vague and have been overshadowed by hints of preemption from some prominent legislators.

Beyond the legislative branch, many contend that the Bush Administration and senior levels of the Environmental Protection Agency have worked to undermine RGGI. “At one level, the feds are kind of a non-player in all of this,” explained one state official involved in RGGI deliberations. “But they have actually spent more than two years trying to sabotage it, whether by trying to rally corporations and [think tanks known for their opposition to early action on greenhouse gas reduction] to oppose it or bombarding RGGI with information requests.” Ironically, state participants note a different relationship at lower levels of EPA and with select Congressional staff eager to advance some version of a national cap-and-trade program. “There are many folks at EPA who are privately cheering us on and helping us where they can,” explained one senior staff official. “And there are a few Congressional staff who have talked with us about how to reward early state action in any future federal program.” It remains entirely unclear how a new President and Congress will respond to this situation come January 2009, but clearly real opportunities for intergovernmental learning and partnership have been squandered due to federal disengagement to date. Ironically, RGGI is scheduled to launch fully its formal operations before those new leaders take their oaths of office, much less attain consensus on new policy steps.

## **Looking Ahead**

The RGGI experience along with other forms of regionalism for developing climate policy among multiple states underscores the continuing dynamic of bottom-up policy development of American environmental and energy policy in recent decades. Collectively, these policies do not add up to a comprehensive American climate plan. But as they expand and take some semblance of a regional form, they become increasingly significant, both in terms of potential reductions of greenhouse gases and in constructing an extensive laboratory for testing what does and does not work effectively in climate policy. As of October 2008, 27 states had enacted renewable portfolio standards (RPS), which mandate a steady increase in the amount of electricity provided by renewable sources. In turn, more than a dozen states have embraced California’s carbon vehicle emissions standards that have been stalled by EPA’s unprecedented step to deny a waiver request under federal air regulations.

Not only do these programs include many states with large populations, but they literally represent regions that generate substantial amounts of greenhouse gases. Moreover, the kinds of policies reflected in these various regional formulations are far more than modest, voluntary experiments. Instead, they call for significant changes, whether increasing renewable energy to supplant thermal sources or steady reductions in carbon emissions from vehicles or power plants. Although all of this functions amid a classic patchwork quilt,

some regional zones of the United States now operate climate protection policies that clearly rival those of other federal or multi-level systems of government that have ratified Kyoto, such as the European Union, Japan, Australia, and Canada (Rabe 2008).

At the same time, all of this American sub-national experimentation goes forward in the awkward never-never land that comprises the current state of American federalism. States are keen to capture any economic and environmental benefits from taking early action and yet step cautiously so as not to trigger potential federal political challenges in the form of preemption or legal challenges over Constitutional powers granted to states. Almost eerily, there has been stunningly little constructive conversation under way between increasingly active states and continually disengaged federal entities such as regulatory agencies and Congress. All of these state efforts, perhaps most notably the cap-and-trade provisions of RGGI, could indeed benefit from constructive dialogue with the federal government. Instead, American climate policy has lumbered forward in two parallel but essentially isolated intergovernmental worlds, potentially fused at some future juncture through some form of collision. The 110<sup>th</sup> Congress has begun to open some avenues of dialogue but clearly the essential intergovernmental conversation has yet to be joined. Indeed, of the 148 climate change hearings held in this Congress alone, few offer anything that approaches serious discussion of how Washington might learn from state policy experience, much less build a viable intergovernmental partnership on this issue.

In the absence of intergovernmental dialogue, the various state climate policies continue on the path of implementation. Each of the 27 RPS states continue to work out details on tradable renewable energy credits and other provisions essential for implementation just as California and its state allies continue to formalize the regulations designed to achieve their carbon emission reduction goals from vehicles in the hope that they ultimately secure approval from Washington. At the same time, RGGI states must contend with countless challenges, from stemming the threat of emissions leakage to devising a sustainable regional governance structure where only memoranda and handshakes exist at present. Much like the European ETS, RGGI has assembled considerable policy architecture in a short period of time, building on substantial precedent and a strong network of devoted policy professionals. But it demonstrates that emissions trading arrangements are inherently political and technically complex entities, particularly when the federal government in which the regional effort is embedded is indifferent at best and hostile at worst. Ironically, most legislative proposals that call for some national version of RGGI extend for hundreds of pages, and yet devote scant attention to the fundamental questions of federalism or institutional development that will be so essential if any future federal policy is to be implemented successfully.

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## REFERENCES

Arrandale, Tom. 2008. "Carbon Goes to Market," *Governing* (September), pp. 26-30.

Butler, Henry N., and Jonathan R. Macey. 1996. *Using Federalism to Improve Environmental Policy*. Washington, D.C.: American Enterprise Institute.

Derthick, Martha A. 1974. *Between State and Nation: Regional Organizations of the United States*. Washington, D.C.: Brookings Institution.

Montpetit, Eric. 2003. *Misplaced Distrust: Policy Networks and the Environment in France, the United States, and Canada*. Vancouver: University of British Columbia Press.

Posner, Paul L. 2005. "The Politics of Preemption: Prospects for the States," *PS: Political Science and Politics*, vol. 38, no. 3 (July), pp. 371-374.

Rabe, Barry G. 2004. *Statehouse and Greenhouse: The Emerging Politics of American Climate Change Policy*. Washington, D.C.: Brookings Institution.

Rabe, Barry G. 2007. "Beyond Kyoto: Climate Change Policy in Multilevel Governance Systems," *Governance: An International Journal of Policy, Administration, and Institutions*, vol. 20, no. 3 (July), pp. 423-444.

Rabe, Barry G. 2008. "States on Steroids: The Intergovernmental Odyssey of American Climate Policy," *Review of Policy Research*, vol. 25, no. 2 (March 2008), pp. 105-128.

Raymond, Leigh. 2003. *Private Rights in Public Resources: Equity and Property Allocation in Market-Based Environmental Policy*. Washington, D.C.: Resources for the Future.

Regional Greenhouse Gas Initiative. 2005. *Memorandum of Understanding*. (December 20).

Regional Greenhouse Gas Initiative. 2007. *Potential Emissions Leakage and the Regional Greenhouse Gas Initiative (RGGI): Evaluating Market Dynamics, Monitoring Options, and Possible Mitigation Mechanisms*. (March 14).

Teske, Paul. 2005. "Checks, Balances, and Thresholds: State Regulatory Reinforcement and Federal Preemption," *PS: Political Science and Politics*, vol. 38, no. 3 (July), pp. 367-370.