

MITIGATING GLOBAL CLIMATE CHANGE IN THE UNITED STATES: A REGIONAL APPROACH

KIRSTEN H. ENGEL*

I. INTRODUCTION

Many state and local governments in the United States are taking the lead in addressing global climate change, tackling a problem that would be otherwise considered the province of the President working with Congress in cooperation with the international community.¹ These state initiatives are the source of

* Professor of Law, James E. Rogers College of Law, University of Arizona. The author wishes to thank the Law College Association for receipt of a summer research grant used to complete this essay and the editors of the *New York University Environmental Law Journal* both for the opportunity to participate in the journal's March 2004 colloquium on "State Roles in U.S. Environmental Law and Policy" and to submit this research for publication.

¹ The President's plenary authority over international affairs is traced to Article I, Section 2 of the United States Constitution, which grants the President power to make treaties with the advice and consent of the Senate and to appoint ambassadors. *See also* *United States v. Curtiss-Wright Exp. Corp.*, 299 U.S. 304, 320 (1936) (upholding an extremely broad vision of Presidential powers by recognizing the "very delicate, plenary and exclusive power of the President as the sole organ of the federal government in the field of international relations—a power which does not require as a basis for its exercise an act of Congress"). A couple of commentators go a step further than simply arguing that the regulation of carbon dioxide is primarily the responsibility of the federal government and contend that state programs regulating carbon dioxide emissions are preempted because they conflict with an alleged federal foreign policy decision that the United States should work through international bodies to craft a coordinated response to global climate change. *See* Norman W. Fitchthorn & Allison D. Wood, *Constitutional Principles Prohibit States from Regulating CO2 Emissions*, 26 *ANDREWS ENVTL. LITIG. REP.* 11 (2005). The better view of the current Administration's federal foreign policy, however, is that the Administration is simply opposed to federal mandatory emissions limitations but is not necessarily opposed to state regulation. Indeed, the Environmental Protection Agency's ("EPA") website introduces state climate change actions, including many regulatory actions with the following comment: "Action at the state level is a key component of the US response to the potential impacts posed by climate change." *See* U.S. EPA, *Global Warming: Actions: State*, <http://yosemite.epa.gov/oar/globalwarming.nsf/content/ActionsState.html> (last visited Nov. 7, 2005).

much interest and many commentaries.² Indeed, it defies economic logic that small subglobal jurisdictions, such as state and local governments in the United States, should be doing much of anything to mitigate their comparatively minor contribution to a global environmental phenomenon. Standard economic theory—exemplified by Garret Hardin’s tragedy of the commons parable³—would argue that small individual exploiters of the commons (here the global atmosphere) have little incentive to reduce the degree of their exploitation for the good of the whole in the absence of an agreement to do so that is binding on all commons users.⁴ Those state and local governments in the United States that are addressing climate change are doing so in the absence of the federal government’s participation in the Kyoto Protocol, a binding international agreement to reduce greenhouse gases, or mandatory national limits upon greenhouse gas emissions.⁵

² See, e.g., Margaret Kriz, *Warm-Up Drills*, 37 NAT’L J. 906 (2005); Laura Kosloff & Mark Trexler, *State Climate Change Initiatives: Think Locally, Act Globally*, 18 NAT. RES. & ENV’T 46 (2004); Robert B. McKinstry, Jr., *Laboratories for Local Solutions for Global Problems: State, Local and Private Leadership in Developing Strategies to Mitigate the Causes and Effects of Climate Change*, 12 PENN ST. ENVTL. L. REV. 15 (2004); BARRY G. RABE, *STATEHOUSE AND GREENHOUSE: THE EMERGING POLITICS OF AMERICAN CLIMATE CHANGE POLICY* (2004); CTR. FOR CLEAN AIR POLICY, *STATE AND LOCAL CLIMATE CHANGE POLICY ACTIONS* (2002), available at http://bronze.nescaum.org/greenhouse/CCAP-state_actions.pdf; John Dernbach, *Moving the Climate Change Debate from Models to Proposed Legislation: Lessons from State Experience*, 30 ENVTL. L. REP. 10,933 (2000); Pew Ctr. on Global Climate Change, *State and Local Net Greenhouse Gas Emissions Reduction Programs*, <http://www.pewclimate.org/states.cfm> (last visited Nov. 7, 2005).

³ Garrett Hardin, *Tragedy of the Commons*, 162 SCI. 1243, 1244 (1968).

⁴ See also Carolyn Kousky & Stephen H. Schneider, *Global Climate Policy: Will Cities Lead the Way?*, 3 CLIMATE POL’Y 359, 360 (2003) (the trend exemplified by municipalities enacting climate change policies seemingly contradicts economic theory when climate change is viewed as a global public good; economic theory predicts that rational actors will “free ride” on the provision of the good by others rather than providing it themselves).

⁵ Neither the administration of President George W. Bush nor the U.S. Congress has acted to develop or enact a mandatory program to reduce greenhouse gases either as part of a cooperative international agreement such as the Kyoto Protocol or through a unilateral federal program. In 1997, the U.S. Senate passed the Byrd-Hagel Resolution, which stated the sense of the Senate that the United States should not be a signatory to the Kyoto Protocol. See S. Res. 98, 105th Cong., 143 CONG. REC. S8138 (1997). President Bush has indicated he has no intention of submitting the Kyoto Protocol to the Senate for ratification. See The White House, Text of a Letter from the President to

Nevertheless, the attention being lavished on state and local efforts should not detract from the fact that, thus far, comparatively few state programs promise much in terms of greenhouse gas reductions. Considered by themselves, most of the state or local initiatives currently being contemplated are unlikely to have a big effect upon global climate change, although they could contribute importantly to moving forward the overall politics of greenhouse gas regulation. There are a few policies that do have potential for reducing U.S. emissions: California's recently proposed standards for greenhouse gas emissions from passenger vehicles⁶ and the many state renewable portfolio standards, which would collectively result in U.S. emissions reductions of approximately 1 to 1.5 percent below "business as usual" by 2015–2020.⁷ Expansion of these policies beyond those states currently planning them could increase the magnitude of reductions correspondingly.⁸

Given the relatively minor nature of the absolute reductions in greenhouse gas concentrations they are projected to achieve, the long-term significance of state and local climate change programs

Senators Hagel, Helms, Craig, and Roberts (March 13, 2001), *available at* <http://www.whitehouse.gov/news/releases/2001/03/20010314.html>. In the meantime, in 2003, the Senate narrowly defeated the Climate Stewardship Act, a bill that would have required the EPA to limit greenhouse gas emissions from the electricity, transportation, industrial and commercial sectors. *See* S. 139, 108th Cong., 149 CONG. REC. S13572, S13598 (2003) (rejecting Climate Stewardship Act fifty-five to forty-three). Most recently, the Senate passed a "Sense of the Senate" resolution that "Congress should enact a comprehensive and effective national program of mandatory, market-based limits and incentives on emissions of greenhouse gases that slow, stop, and reverse the growth of such emissions at a rate and in a manner that (1) will not significantly harm the United States economy; and (2) will encourage comparable action by other nations that are major trading partners and key contributors to global emissions." S. Res. 866, 109th Cong., 151 CONG. REC. S7033, S7033 (2005).

⁶ In 2002, California enacted a law requiring the "maximum feasible" reductions of greenhouse gas emissions from motor vehicles. CAL. HEALTH & SAFETY CODE § 43018.5 (West Supp. 2005). The California Air Resources Board recently issued regulations implementing this mandate. *See* CAL. CODE REGS. tit. 13, §§ 1900, 1961, 1961.1 (2005).

⁷ *See* Kirsten H. Engel & Scott R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 *ECOLOGY L.Q.* 183, 212 n.86 (2005). Recently, two economists estimated that subnational governments in the United States that have adopted climate change policies that are similar in scope to Kyoto's recommendations represent about 24 percent of the U.S. population and about 27 percent of the nation's gross domestic product. Brendan Fisher & Robert Costanza, *Brief Communications: Regional Commitment to Reducing Emissions*, 438 *NATURE* 301 (2005).

⁸ Engel & Saleska, *supra* note 7, at 212 n. 86.

is best evaluated in terms of the degree to which they may prompt or enhance mitigation efforts by larger geographic jurisdictions, such as mitigation efforts at the regional or national levels. Such enhancement can come about in several ways: by developing programs or legislation that can later serve as a model for federal regulators, by helping to create the political and legal climate necessary to induce enactment of a federal regulatory program (what might be termed a “domino effect”), and by banding together with other states in the same region to craft and develop regional plans for reducing greenhouse gas emissions.

As a previous work by the author deals with the first two mechanisms for aggregating the influence of a single state or local government’s climate change program,⁹ this essay will focus on the third method: the aggregation of state or local government responses to climate change through regional cooperation. Indeed, some of the most promising climate change initiatives currently under development are being pursued by states acting as a group. Such approaches are proceeding without federal oversight or approval, but instead upon simple cooperation. This is in contrast to most environmental regulation, which generally proceeds on a state-by-state basis, much of it according to statutory programs delegated to the states by the federal government.¹⁰ It is also contrary to most examples of regional cooperation on environmental matters. Such cooperation is usually observed with respect to the use or preservation of natural resources whose location spans the boundaries of more than one state¹¹ or where

⁹ See *id.* at 223–29.

¹⁰ For a description and analysis of such delegation programs, following the “cooperative federalism” approach, see in this symposium issue, Robert L. Fischman, *Cooperative Federalism and Natural Resources Law*, 14 N.Y.U. ENVTL. L.J. 179 (2005).

¹¹ See, e.g., COUNCIL OF THE GREAT LAKES GOVERNORS, THE GREAT LAKES CHARTER 1985, available at <http://www.cglg.org/projects/water/docs/GreatLakesCharter.pdf> (partnership of the Governors of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin and the Canadian Premiers of Ontario and Quebec to, among other things, “protect and conserve the environmental balance of the Great Lakes Basin ecosystem”); Michaela Stickney et al., *Lake Champlain Basin Program: Working Together Today for Tomorrow*, 6 LAKES & RESERVOIRS: RES. & MGMT. 217, 222 (2001) (describing the Lake Champlain Basin Program, an effort on behalf of representatives of New York, Vermont and Quebec to develop a comprehensive management plan for Lake Champlain that will reduce phosphorous pollution, prevent toxic contamination and manage invasive aquatic species); Delaware River Basin Compact, DEL. CODE ANN. tit. 7, §§ 6501, 6511 (1991) (establishing

cooperation is necessary to remediate a pollution problem resulting from regional economic or social patterns.¹² Even here, the federal government is usually intimately involved in the creation, oversight or approval of such programs.¹³ The involvement of the federal government is to be expected given that these regional programs involve a commons, and a central regulator is often thought necessary to prevent the over-exploitation of the commons.¹⁴

This essay argues that, because a regional interstate cooperative approach will likely lead to greater emissions reductions, it constitutes a more effective and efficient approach to climate change than leaving the matter to individual states. The prediction of greater emissions reductions follows from the opportunities, under a regional program, to aggregate the efforts of individual states. It also follows from the potential for more uniform regulation across a multistate area, which lowers the costs of emissions reductions. Finally, because there is “strength in numbers,” a regional approach may enhance the resolve of individual state policymakers to address climate change.

Nevertheless, not enough is currently known about regional climate initiatives in practice to be sure of these predictions, especially concerning the possible trade-offs between the scope of greenhouse gas sources encompassed in a regional approach and

commission to protect the Delaware River Basin on behalf of Delaware, New Jersey, New York, and Pennsylvania).

¹² For example, Congress created the Northeast Ozone Transport Region to address the severe ozone problem in the northeast corridor, a product of regional transportation patterns. Each state within the region, which consists of States of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, parts of Virginia and the District of Columbia, serves on the Northeast Ozone Transport Commission (“OTC”), which is responsible for adopting regulatory strategies that will result in the regional attainment of the national standard for ozone under the Clean Air Act—the ozone national ambient air quality standard. 42 U.S.C. § 7511c (2000). Similarly, the Lake Champlain Basin Program is a product of federal legislation. *See* 33 U.S.C. § 1270 (2000).

¹³ For example, the OTC, discussed *supra* note 12, was established by Congress in the 1990 Amendments to the Clean Air Act. 42 U.S.C. § 7511c (2000). In addition, the Administrator of the EPA must approve the additional ozone control measures suggested by the Commission; the Commission suggestions are merely recommendations until approved by the federal EPA Administrator. *See* 42 U.S.C. § 7511c(c) (2000).

¹⁴ *See generally* Hardin, *supra* note 3 (describing the tragedy of the commons).

the stringency or aggressiveness of the regional programs established. The critical unanswered question is why states are cooperating with each other. Is it to have a greater impact on climate change (or at least to be compatible with such a result), or to obtain “political cover” for weak or nonsubstantive programs? This is not a case where cooperation may yield an efficient solution to a problem of interjurisdictional pollution spillovers in that the problem is not limited to the states that are cooperating.¹⁵ Regional arrangements could be the result of efforts to restrain states that are being too aggressive in addressing climate change, with the result that regional cooperation might be leading to less action on climate change at the state and local level than would otherwise occur, rather than more. Empirical research on this point is needed to understand the real world dynamics of regional cooperation in the climate change arena.

This essay concludes with a discussion of the impact of the United States’ federalism framework for the cooperative regional approach to climate change. Despite the advantages of the cooperative interstate approach, states within the United States are not completely sovereign entities, and hence their powers to enter into alliances with other states and even foreign nations in pursuit of common environmental goals is limited by the framework and doctrines of federalism. These constitutional or quasi-constitutional requirements limit the degree to which groups of states, either working with each other or with foreign countries, can impose binding requirements on each other or create barriers between themselves and other non-participating states. These restrictions may limit the potential effectiveness of such interstate cooperation.

By definition, a regional approach cannot be compelled. Thus this essay concludes with a list of recommendations for how the regional approach to climate change can be promoted by capitalizing upon existing regional institutions.

¹⁵ See Wallace E. Oates, *A Reconsideration of Environmental Federalism* 19–20 (Resources for the Future Discussion Paper 01-54, 2001) (discussing regional cooperation as a potentially more efficient solution to the problem of interjurisdictional pollution spillovers than centralized regulation).

II. STATE AND LOCAL ACTION ON CLIMATE CHANGE

Most state and local climate change initiatives are being pursued unilaterally by the government units involved. For instance, many cities¹⁶ and states¹⁷ are independently developing action plans containing targets for greenhouse gas reductions. Other states are developing inventories or registries of their in-state sources of greenhouse gas emissions.¹⁸ Still others have adopted tax and other incentive programs to encourage greater use of renewable energy, energy efficiency and conservation.¹⁹ The northeastern states are developing a plan to limit emissions from power plants.²⁰ Finally, as discussed above, California has proposed standards for cutting greenhouse gas emissions from motor vehicles.²¹

Standard economic analysis cannot explain the multitude of greenhouse gas reduction activities occurring on the state and local level. The atmosphere, which is being polluted by an overabundance of greenhouse gases, is a classic “commons.”²²

¹⁶ Many cities have committed to specific greenhouse gas emission reduction targets: Portland, Oregon (establishing target of greenhouse gas emission reductions of 10 percent below 1990 levels by 2010); Salt Lake City, Utah (establishing target to reduce greenhouse gases by 7 percent below 1990 levels by 2012); Austin, Texas (establishing a target of greenhouse gas reductions of 20 percent below 1990 levels by 2010); Seattle, Washington (establishing goal of meeting municipality’s electric needs with no net greenhouse gas emissions). See CTR. FOR CLEAN AIR POLICY, *supra* note 2, at 6. In addition, more than 140 U.S. cities and counties and over 560 cities worldwide are members of Cities for Climate Protection, a program sponsored by the International Council for Local Environmental Initiatives. International Center for Local Environmental Initiatives, CCP Participants, <http://www.iclei.org/index.php?id=1121> (last visited Oct. 12, 2005). See also Kousky & Schneider, *supra* note 4, at 360 (presenting results from survey of municipal officials in cities that are members of the CCP program).

¹⁷ Examples of states committing to reduce greenhouse gas emissions include New York (establishing a goal to reduce emissions to 5 percent below 1990 levels by 2010 and 10 percent below 1990 levels by 2020); New Jersey (voluntary goal to reduce emissions by 3.5 percent below 1990 levels before 2005); and Oregon (the Oregon Department of Energy has recommended a strategy, dependent in part by state actions to reduce emissions by at least 2 million tons in 2015). See CTR. FOR CLEAN AIR POLICY, *supra* note 2, at 5–6.

¹⁸ See Pew Ctr. on Global Climate Change, *supra* note 2.

¹⁹ See *id.*

²⁰ See Anthony DePalma, *9 States in Plan to Cut Emissions from Power Plants*, N.Y. TIMES, Aug. 24, 2005, at A1.

²¹ See CAL. CODE REGS. tit. 13, §§ 1900, 1961, 1961.1 (2005).

²² See Elinor Ostrom et al., *Revisiting the Commons: Local Lessons, Global*

According to Garrett Hardin's "tragedy of the commons" parable, which describes the dilemma facing the small user of a commons, only an enforceable collective agreement, binding on all or most users, should be sufficient to motivate the small commons user to take effective action to preserve the commons.²³ Otherwise, the lack of immediate correlation between emissions reductions and climate change mitigation would render a small commons user's efforts to preserve the commons economically irrational.²⁴ Because the United States has refused to consider ratifying the Kyoto Protocol, the states are not subject to any binding international greenhouse gas targets.²⁵ Unlike the United States taken as a whole and many other large countries, such as China and India, most individual U.S. states and cities emit comparatively small quantities of greenhouse gases.²⁶ As a result, unlike the big emitting nations, cities and states cannot expect that

Challenges, 284 SCIENCE 278, 278–79 (1999).

²³ See Hardin, *supra* note 3, at 1244.

²⁴ This should be true only for the small greenhouse gas emitting jurisdiction; while not optimal, unilateral emissions reductions by larger emitters, such as the United States, is rational even under standard economic assumptions. See Engel & Saleska, *supra* note 7, at 203–09 (discussing two models that illustrate the comparative economic incentives of large emitters and small emitters to take action to reduce greenhouse gases acting unilaterally as opposed to as part of a cooperative international effort).

²⁵ The U.S. is subject to the United Nations Framework Convention on Climate Change, but the Framework Convention does not establish any binding greenhouse gas emission limits. United Nations Conference on Environment and Development, May 9, 1992, *United Nations Framework Convention on Climate Change*, art. 2, U.N. Doc. A/AC.237/18 (Part II) Add.1 [hereinafter UNFCCC]. However, the Administration is attempting to comply with the Convention through voluntary means. See The White House, President George W. Bush, *Global Climate Change Policy Book* (Feb. 14, 2002), <http://www.whitehouse.gov/news/releases/2002/02/climatechange.html>; see also Barnaby J. Feder, *Economy and Business; Some Businesses Take Initiative to Voluntarily Reduce Emissions*, N.Y. TIMES, Dec. 1, 2003, at C9 (reporting that, in contrast to the voluntary approach adopted by the Bush Administration, many businesses are pursuing much more ambitious greenhouse-gas reduction programs).

²⁶ This is not to say that the emissions of U.S. states are insignificant; indeed, many individual states rank higher than many nations in terms of amount of greenhouse gas emissions. For instance, Texas, which annually emits 167 million metric tons carbon equivalent ("MMTCE") emits 2.7 percent of the world's total carbon emissions, more than either the United Kingdom, Canada, Mexico or France. See CTR. FOR CLEAN AIR POLICY, *supra* note 2, at 3. Similarly, California, Ohio, Pennsylvania and Florida, which each emit between 1.0 and 1.5 percent of the world's total, also rank among the world's largest emitters. See *id.*

unilateral cutbacks in their levels of greenhouse gas emission will result in much, if any, cost savings from reductions in the local impacts of climate change. Hence from a traditional efficiency analysis, it makes little sense for an individual state or city to undertake unilateral emissions reductions. Thus for a typical U.S. state, under standard economic theory, pursuing greenhouse gas emissions appears presumptively irrational.

Why, exactly, some state and local governments that are minor contributors to climate change on the global stage are nevertheless taking action, is a complex question. A number of explanations are plausible, including: political advantages from state leadership on an international issue which the federal government is mostly ignoring; competitive advantages over other regions associated with the early adoption of regulations that may soon become widespread; concern over the public health and environmental impacts of climate change; and prior success in influencing national environmental policy.²⁷ Empirical data suggests that local governments pursue climate policies because of the perceived cost savings associated with climate policy and because of other expected co-benefits, such as a reduction in traffic congestion, reduced maintenance and operating costs from more energy-efficient technologies, reduced air pollution, and a decrease in the volume of municipal solid waste generated.²⁸

Some combination of these factors is probably at work in each of the states that have taken on the problem of climate change. A recent state climate change related rulemaking by the State of California provides a rare glimpse of how one state rationalizes

²⁷ Ken Colburn, Executive Dir., NESCAUM, U.S. Climate Change Leadership: Where's it Stand and Where's it Going?, Presentation at COP10, United Nations Framework Convention on Climate Change, (Dec. 11, 2004), available at http://regserver.unfccc.int/seors/file_storage/FS_184920093#384.

²⁸ Kousky & Schneider, *supra* note 4, at 367. Based on interviews with local officials and staff in twenty-three U.S. cities, Kousky and Schneider found that a large majority of cities claimed to be pursuing climate protection policies that generated, or could generate, cost savings. *Id.* at 360–61. Other researchers have found an overlapping list of co-benefits driving climate policy at the local level. See Michele M. Betsill, *Mitigating Climate Change in U.S. Cities: Opportunities and Obstacles*, 4 *LOC. ENV'T* 393, 397–98, 404 (2001), available at <http://www.colostate.edu/Depts/PoliSci/fac/mb/Local%20Environment.pdf> (finding local policymakers justify greenhouse gas reductions as a response to local (nonglobal) concerns, such as rising energy costs, ill effects from air pollution, the need for transportation alternatives and concerns over the livability of their cities).

regulatory action to address a global environmental problem. After discussing how greenhouse gas emissions from California light-duty vehicles constitute less than one percent of total greenhouse gases in the world, which means that California's newly proposed regulation of greenhouse gas emissions from light-duty vehicles will not wholly mitigate the consequences of climate change in California, the California Air Resources Board declared that "[i]t does not necessarily follow, however, that California should do nothing."²⁹ The Board's Staff report lists a variety of reasons why the State should still implement a significant transportation-related climate change measure, including the "no regrets" nature of the regulation, California's long history of environmental stewardship and of pioneering technology-forcing regulation, and strong public support for State control of greenhouse gases.³⁰

The important point for present purposes is that, in the absence of the incentive provided by a causal relationship between local action and global outcome, state action on climate change is dependent upon various local economic, political and social motivations like those listed by the California Air Resources Board. The presence of these factors and the degree to which they motivate policymakers varies tremendously from state to state. The result is great variation across states in terms of both motivation to address climate change and the aggressiveness of the initiatives that result.

For these reasons, the ultimate significance of state actions on global climate change lies in the degree to which such actions influence the policies of the larger jurisdictions of which the states are a part—either the federal government or the international community. State climate change policies can have this kind of influence in a number of ways. One way of influencing these larger jurisdictions is by developing new programs or approaches that are subsequently adopted by the federal government based on the idea of the states as "laboratories of democracy."³¹ History is

²⁹ CAL. ENVTL. PROT. AGENCY AIR RES. BD., INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING, PUBLIC HEARING TO CONSIDER ADOPTION OF REGULATIONS TO CONTROL GREENHOUSE GAS EMISSIONS FROM MOTOR VEHICLES 145 (2004), *available at* <http://www.arb.ca.gov/regact/grnhsgas/isor.pdf>.

³⁰ *Id.*

³¹ *See* *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis,

rife with examples of federal legislation that has drawn heavily from ideas being developed at the state level, social security being a prominent example.³² A relevant environmental example is the nitrogen oxides trading programs implemented by Midwestern and Northeastern states that formed the basis of a federal emissions trading program under the Clean Air Act.³³

A second mechanism for state influence of broader policy is for such local action to function as a catalyst for regulatory action by higher jurisdictional levels of government encompassing a larger geographic scope. Regulation by a state or local government might trigger regulation at a higher jurisdictional level as a result of: (1) interest group appeals to regulators to level the competitive playing field; (2) the search for larger markets by substitute product producers; or (3) a desire to regulate the environmental problem through the use of a market mechanism, such as a tradable permit. Through these mechanisms, a state can trigger regulatory action by governments that contribute a larger percentage of global greenhouse gas emissions, and thus have a greater potential for reducing emissions through regulation.³⁴ Many U.S. federal environmental laws and multilateral international environmental agreements came about partly in reaction to the regulatory measures implemented by lower-level jurisdictions.³⁵

Finally, state and local governments can magnify the importance of their climate change initiatives by banding together with other states and local governments to form regional coalitions

J., dissenting).

³² See Joseph A. Ranney, *The Rise of Labor and Wisconsin's "Little New Deal"*, WISC. LAW., Oct. 1994, at 22 (describing Wisconsin's contribution to the creation of the federal social security program). See also Wisconsin Historical Society, *Social Security: The Wisconsin Connection*, <http://www.wisconsinhistory.org/topics/socialsecurity/index.asp> (last visited Oct. 8, 2005).

³³ See ANDREW AULISI ET AL., WORLD RES. INST., GREENHOUSE GAS EMISSIONS TRADING IN U.S. STATES 6 (2005), available at http://pdf.wri.org/nox_ghg.pdf.

³⁴ For a more extensive treatment of this triggering mechanism, see Engel & Saleska, *supra* note 7, at 223–29.

³⁵ See Engel & Saleska, *supra* note 7, at 224–27 (finding that interest group appeals for uniform regulation has been responsible on the domestic level for, among other regulatory programs, uniform federal vehicle emission standards and energy efficiency standards for appliances and on the multilateral international level, for the phase-out of chlorofluocarbons under the Montreal Protocol).

or other interstate groups that address climate together. The remainder of this essay will address the status and potential impacts of these regional efforts.

III. THE REGIONAL APPROACH TO GLOBAL CLIMATE CHANGE IN THE UNITED STATES

Many of the more promising domestic climate initiatives today involve regional cooperative behavior between states or between states and foreign governments. On the more formal end of the spectrum of interstate cooperation are situations where state politicians are working cooperatively with one another to frame and implement climate change mitigation goals. Probably the most significant of these arose out of the Conference of New England Governors and Eastern Canadian Premiers, a preexisting cooperative forum dedicated to the discussion and development of policy responses to economic, environmental and energy issues common to their shared region.³⁶ In 2001, this Conference adopted a joint Climate Action Plan.³⁷ Under the Plan, the governors and premiers agreed to specific and aggressive goals: (1) by 2010, to reduce anthropocentric greenhouse gas emissions to 1990 levels; (2) by 2020, to reduce greenhouse gas emissions to 10 percent below 1990 levels; (3) ultimately, to reduce greenhouse gas emissions to levels necessary to avoid harmful impact on the climate, presently assessed at 75 to 85 percent below current levels.³⁸ The plan lists nine action items designed to help achieve these goals, including the establishment of a standardized regional greenhouse gas emissions registry to facilitate emissions trading.³⁹

The “Regional Greenhouse Gas Initiative” (“RGGI”) is a

³⁶ “The Conference of New England Governors and Eastern Canadian Premiers was established in 1973.” New England Governors’ Conference, Inc., The New England Governors & The Eastern Canadian Premiers, <http://www.negc.org/premiers.html> (last visited Oct. 5, 2005). It lists as its major achievements: expanding economic ties among the states and provinces, fostering energy exchanges, advocating on environmental issues and sustainable development and coordinating on issues such as transportation, forest management tourism, small-scale agriculture and fisheries. *See id.*

³⁷ COMM. ON THE ENV’T. & NE. INT’L COMM. ON ENERGY, CONFERENCE OF NEW ENGLAND GOVERNORS & EASTERN CANADIAN PREMIERS, CLIMATE CHANGE ACTION PLAN 2001 (2001), *available at* <http://www.negc.org/documents/NEG-ECP%20CCAP.PDF> [*hereinafter* NEW ENGLAND GOVERNORS & EASTERN CANADIAN PREMIERS].

³⁸ *Id.* at 7.

³⁹ *See id.* at 8–18.

cooperative initiative of seven Northeast and Mid-Atlantic states to eventually develop a regional cap and trade program.⁴⁰ The states involved have just concluded a Memorandum of Understanding (“MOU”) that outlines the primary features of the cap and trade program. Next, the states are scheduled to publish a model rule allowing the actual implementation of the cap and trade program, which each state will separately promulgate under its own legal authorities.⁴¹ According to the MOU, the states agree that each state’s base annual carbon dioxide budget will decline by 2.5 percent each year, such that, by 2018, its budget will be 10 percent below its initial budget beginning with the program’s implementation in 2009.⁴² Initially, the program will cover only carbon dioxide emissions from power plants, but may be expanded to include other sources after the initial phase.⁴³ Because the combined greenhouse gas output of the group is 14 percent of U.S. emissions and 3.2 percent of world emissions, or about the amount emitted by Germany each year,⁴⁴ RGGI has the capacity to reduce a substantial portion of U.S. emissions and to serve as an example for a national emissions trading regime.

While the cooperative regional approach finds most examples in the northeastern United States, there are a few examples of such cooperative behavior in other parts of the country. For example, the states of California, Washington and Oregon have teamed up to create the West Coast Governors’ Global Warming Initiative.⁴⁵ As

⁴⁰ See Reg’l Greenhouse Gas Initiative, About RGGI, <http://www.rggi.org/about.htm> (last visited Jan. 7, 2006). Those seven states are Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York, and Vermont. In addition, Maryland, the District of Columbia, Pennsylvania, the Eastern Canadian Provinces and New Brunswick are participating as observers in the RGGI process.

⁴¹ MEMORANDUM OF UNDERSTANDING OF THE REGIONAL GREENHOUSE GAS INITIATIVE 6 (Dec. 20, 2005), available at http://www.rggi.org/docs/mou_12_20_05.pdf.

⁴² *Id.* at 3.

⁴³ Reg’l Greenhouse Gas Initiative, *supra* note 40.

⁴⁴ William A. Pizer & Kentaro Tamura, *Climate Policy in the U.S. and Japan: Prospects in 2005 and Beyond, Workshop Summary* 4–5, available at <http://www.iges.or.jp/en/cp/pdf/activity3/summary.pdf>.

⁴⁵ See Press Release, Offices of the Governors, Gary Locke, Washington; Gray Davis, California; Theodore R. Kulongoski, Oregon, Statement of the Governors of California, Oregon and Washington on Regional Action to Address Global Warming (Sept. 22, 2003), available at http://www.climatechange.ca.gov/westcoast/releases/2003-09-22_GOVS_RELEASE.PDF.

part of the initiative, the Governors agreed to certain recommendations, including an agreement to collaborate on the purchase of hybrid vehicles, to increase retail sales of renewable energy annually by one percent in each state, and to adopt energy efficiency standards for products not regulated by the federal government.⁴⁶ A staff report contemplates yet more aggressive measures.⁴⁷

Another example is the efforts of the Western Governors Association on energy issues. The Association recently resolved to examine the feasibility of attaining, and actions required to attain, a goal of 30,000 megawatts of clean energy by 2015 and a 20 percent improvement in energy efficiency by the year 2020.⁴⁸ The Western Governors' Association has created the Clean and Diversified Energy Advisory Committee to help plan for the development of energy technologies necessary to meet this goal.⁴⁹

Less formally, a diverse group of state officials, industry participants, agriculture representatives, and renewable energy advocacy groups in the upper midwest are working together on a regional basis on energy and agriculture initiatives that address climate change while at the same time promoting regional economic development. This group, known as "Powering the Plains," includes representatives from North Dakota, South Dakota, Iowa, Minnesota, Wisconsin, and the Canadian Province of Manitoba.⁵⁰ Model projects of the group include a "regional, renewable, hydrogen fueling station," a "manure digester" project designed to provide power and heating to South Dakota State University, and "wind energy-compressed air storage pilots."⁵¹

The plan generated by the New England Governors and

⁴⁶ See Press Release, West Coast Governor's Global Warming Initiative, West Coast States Strengthen Joint Climate Protection Strategy (Nov. 18, 2004), available at http://www.climatechange.ca.gov/westcoast/releases/2004-11-18_JOINT_RELEASE.PDF.

⁴⁷ See generally WEST COAST GOVERNORS' GLOBAL WARMING INITIATIVE, STAFF RECOMMENDATIONS TO THE GOVERNORS (2004), available at <http://www.climatechange.ca.gov/westcoast/> (follow "Initiative Documents" hyperlink; then follow hyperlink for report).

⁴⁸ See Western Governors' Association, Clean and Diversified Energy Initiative, <http://www.westgov.org/wga/initiatives/cdeac/index.htm> (last visited Oct. 8, 2005).

⁴⁹ See *id.*

⁵⁰ Great Plains Institute, Powering the Plains, <http://www.gpisd.net/resource.html?Id=61> (last visited Oct. 8, 2005).

⁵¹ See *id.*

Canadian Premiers is an example of a larger regional undertaking by American states together with foreign counterparts. In addition to this type of relationship, there are many examples of more limited cooperation between states and foreign governments. For example, New Jersey, which has long cultivated a relationship with the Netherlands on environmental matters, adopted from the Netherlands the idea of sustainability covenants, which it has used to commit signatories—from major utilities to colleges and religious organizations—to statewide greenhouse gas reduction goals.⁵² Officials in New Jersey also entered into an agreement with the Netherlands to “collaborate on the design and implementation of an emissions banking system.”⁵³

IV. ANALYSIS OF THE REGIONAL APPROACH TO CLIMATE CHANGE

A. *The Advantages of a Regional Approach*

Though less effective than a national-level response, a cooperative interstate response to climate change is likely to be more effective and efficient than greenhouse gas regulation pursued by state and local governments acting independently of one another.

A regional program should lead to greater emissions reductions than programs that are limited to individual states for two reasons. First, and most obviously, a regional program is likely to encompass a larger geographic area and more centers of population, and thus is likely to have the potential to result in a larger contribution to climate change mitigation than an approach limited to a single state (though this obviously depends upon the size and population of the states involved). Thus the staff recommendations of the West Coast Governors’ Global Warming

⁵² See RABE, *supra* note 2, at 120–22. Another recent example of a state-foreign climate partnership is the Memorandum of Understanding entered into between California and São Paulo, Brazil. See Press Release, Cal. Env’tl. Prot. Agency, California and São Paulo Environmental Protection Agency Secretaries Sign Climate Change Agreement (Dec. 6, 2005), available at <http://www.calepa.ca.gov/PressRoom/Releases/2005/PR19-120605.pdf>.

⁵³ RABE, *supra* note 2, at 133. Early efforts between New Jersey and the Netherlands to enable the companies in the Netherlands to obtain credit for emissions reductions projects performed in New Jersey under New Jersey’s Open Market Emission Trading system ultimately failed when environmental groups and others questioned the quantification protocols and it became clearer that the United States would not ratify Kyoto. See *id.* at 134.

Initiative note that “the [three] states’ combined carbon emissions, if compared against other countries in the world, rank seventh globally. A significant reduction in regional greenhouse gas emissions would have a measurable global impact.”⁵⁴

Size matters, not only because of the potential for greater greenhouse gas emission reductions by virtue of the larger geographic area encompassed by a regional program, but also because, in an emissions trading regime, a greater number of sources makes possible a greater number of trades thus making the market more competitive.⁵⁵ RGGI’s proposal for a greenhouse gas emissions trading scheme is a case in point. It was developed after New York Governor George Pataki invited other northeastern states to join him in creating a regional emissions trading scheme;⁵⁶ the Governor apparently believed that such a scheme would not be feasible in New York State alone.⁵⁷

A regional approach should also lead to greater emissions reductions because it is more likely to employ a uniform approach to regulation. Such greater uniformity may, in turn, overcome industry resistance to greenhouse gas regulation. Even assuming such regulation will impose unwanted costs, to the extent the industry does business in more than one state within a region, the benefits of a uniform regional approach is likely to outweigh the benefits of particular “pockets” of less stringent regulation. Similarly, the opportunity to join in a more uniform regional approach may overcome political resistance to greenhouse gas regulation within the participating states by rendering such

⁵⁴ WEST COAST GOVERNORS’ GLOBAL WARMING INITIATIVE, *supra* note 47, at 4.

⁵⁵ Fredric C. Menz, *Transborder Emissions Trading Between Canada and the United States*, 35 NAT. RESOURCE J. 803, 813–14 (1995) (suggesting that a bi-national sulfur dioxide emissions trading program encompassing the United States and Canada would be more competitive than a market limited solely to either country because an expanded market would allow for a greater number of opportunities for emissions trades).

⁵⁶ See Press Release, Office of New York State Governor George Pataki, Governor Calls on Northeast States to fight Climate Change (Apr. 25, 2003), available at http://www.ny.gov/governor/press/03/april25_2_03.htm.

⁵⁷ For another example of the events leading to the establishment of a regional trading program, see WEST COAST GOVERNORS’ GLOBAL WARMING INITIATIVE, *supra* note 47, at 14. (recommending the West Coast states consider a regional carbon emission trading program and stating that “[i]t would be productive to explore the policy options and economics of a carbon allowance program at a regional level because a regional market for carbon reductions would be more efficient and effective than individual state markets”).

programs the regional “norm” against which nonaction might be seen as the aberrant regulatory response.

Second, a regional approach allows the states involved to capitalize upon their shared environmental resources and interconnected economies both to elevate the importance of climate measures and to address climate change in a cost-effective manner. Several regional climate action plans emphasize the predicted impacts of climate change upon the regional environment shared by the states involved. For example, the stated basis for action in the New England Governors and Canadian Premier’s Action Plan are the predicted consequences of climate change on the regional environment, such as sea level rise. The organization notes that the impacts of sea level rise “would be common to the Eastern Canadian provinces and to New England states,” and that “warming would stress our common natural resources—especially in the areas of agriculture, fisheries and forestry.”⁵⁸ The West Coast Governors similarly stress the negative impacts of climate change on their shared natural resources, including sea level rise, the impacts of a reduction in the mountain snow pack for exacerbating already tight water supplies, and the worsening of forest fires, smog and extreme weather events.⁵⁹ This focus on the regional environmental impacts of climate change appears to magnify and to dramatize the impacts of climate change and, by doing so, to galvanize support for climate change mitigation measures. Due to the global nature of the climate, the actions proposed by these regional action plans cannot, in and of themselves, mitigate the impacts discussed; they can only do so when combined with actions of others.⁶⁰

Regional approaches allow states to develop a joint strategy to reduce greenhouse gases, and, at the same time, ensure reliable energy sources for the region. Electricity production is a major source of greenhouse gases. Electricity is also provided on a regional basis in the U.S., which is divided into several regional grids. Given the regional nature of the electricity market, it is

⁵⁸ NEW ENGLAND GOVERNORS & EASTERN CANADIAN PREMIERS, *supra* note 37, at 3.

⁵⁹ See WEST COAST GOVERNORS’ GLOBAL WARMING INITIATIVE, *supra* note 47, at 6.

⁶⁰ See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2001: THE SCIENTIFIC BASIS 87 (J.T. Houghton et al. eds., 2001), available at http://www.grida.no/climate/ipcc_tar/wg1/index.htm (hereinafter IPCC).

difficult for a single state to significantly influence the amount of greenhouse gas emissions in the electricity sector. A regional approach to encouraging greater reliance on renewable energy sources and conservation is more effective because it targets the problem on a more relevant level of analysis. Also, by casting a wider net, it is more likely that a regional approach will cover the geographic areas serviced by the same group of electricity providers. This ensures that the providers subject to the climate program are not placed at a disadvantage by having to compete against other providers that are not subject to the same controls.⁶¹

Finally, a regional focus empowers the states to reap the economic benefits that attend investments in energy efficiency and renewable energy technologies. Working on a regional basis, states can create an environment that is attractive to companies specializing in energy efficiency or renewables or that are reliant upon such businesses.⁶²

B. *Is the Potential of Regional Climate Initiatives Being Realized in Practice?*

This essay has discussed how regional cooperation can function as a more effective and efficient method of addressing climate change at the subnational level. However, it is an open question whether the potential of such regional arrangements is being realized in practice. Thus far, such cooperation is relatively

⁶¹ Crafting a regional approach to greenhouse gas mitigation that does not disadvantage electricity providers within the region vis-à-vis providers outside the region is a major concern of the electricity industry with respect to the regional emissions trading scheme being developed by northeastern states. See Memorandum from Northeast Regional Greenhouse Gas Coalition to Bill Lamkin, Mass. Dep't Env'tl. Prot. 2 (Mar. 12, 2004), available at http://www.rggi.org/docs/ghg_modelrulememo.pdf.

⁶² Attracting energy efficient and renewable energy firms is already a primary goal of state politicians and economic development specialists. See, e.g., OR. DEP'T OF ENERGY, OREGON RENEWABLE ENERGY ACTION PLAN (2005), available at <http://egov.oregon.gov/ENERGY/RENEW/docs/FinalREAP.pdf> (detailing Oregon's plans to develop Oregon's renewable energy resources in order to stabilize electric rates, decrease reliance upon petroleum, create jobs, avoiding pollutants and greenhouse gases); COLLABORATIVE ECON., GREAT VALLEY CENTER, RENEWABLE ENERGY: STRATEGIC OPPORTUNITIES FOR THE GREAT CENTRAL VALLEY (2003), available at http://www.greatvalley.org/nvc/projects/coecon/energy_report.pdf (detailing the strategic opportunities available to Central Valley California policymakers to produce renewable energy for local use and to subsequently export such power, creating a vibrant export industry).

new and unstudied; many questions remain unanswered. The first is whether regional cooperation is actually functioning in a manner that results in greater greenhouse gas emissions reductions than what would occur in the absence of regional cooperation. There are reasons to believe that greater reductions are occurring, a primary reason being that regional cooperation should, in general, enhance the geographic scope of an area subject to a single climate change program and thereby increase the number of sources subject to the program and, at the same time limit the possibility that industries affected by the program will be in competition with industries not subject to it.⁶³ This could be expected to increase the amount of emissions reduced and, at the same time, serve to limit industry's opposition to the measures. Moreover, economic theory predicts that the optimal response to safeguard a commons resource is the result of a cooperative agreement among the parties using the commons.⁶⁴ With respect to climate change, a regional agreement is less complete than an agreement among all commons users, but it is obviously more complete than unilateral action by a single state.

The prediction that a regional arrangement will result in greater greenhouse gas reductions is also supported by assumptions regarding the political calculus of state and local politicians. Politicians may be able to satisfy constituencies concerned about climate change by joining a regional group, at least demonstrating that they are doing as much as neighboring jurisdictions on the matter, without risking the political capital involved in adopting their own program to address climate change. Hence, politicians may take action on climate change in the context of a regional arrangement where they would not if their only option was the unilateral adoption of a climate change mitigation program.

The real world dynamics of regional cooperation on climate change need to be examined empirically to determine whether these predictions are born out by practice. It is possible that regional cooperation could be functioning altogether differently

⁶³ See *supra* text accompanying notes 60–61.

⁶⁴ See William D. Nordhaus & Zili Yang, *A Regional Dynamic General-Equilibrium Model of Alternative Climate-Change Strategies*, 86 AMER. ECON. REV. 741, 752–53 (1996) (predicting greater greenhouse gas emissions reductions under a cooperative international agreement than through unilateral country actions).

than theory would suggest. Instead of leading to greater action on climate change, regional cooperation could possibly be leading to less. This could be the case if regional cooperation is occurring at the behest of politicians in state A that are generally opposed to addressing climate change in order to curb the activities of neighbor state B that is taking more aggressive actions to address climate change. The motivation of state A would be to reduce the apparent gap between jurisdictions which might otherwise reflect badly on the politicians opposed to the programs. Politicians from the states addressing climate change might join such regional arrangements as a way of both satisfying their environmental constituency (because they are clearly taking action on climate change) and, at the same time, satisfying the opposing constituency because their activities are capped at what their neighbors are doing—they are at least not going out “ahead” of their peers on the issue of climate change.

Which (if either) of these models—regional cooperation as a means to enhance a state’s response to global climate change or to minimize it—best approximates practice in the real world merits additional research. This essay is limited to fleshing out how regional cooperation could be used to enhance a state’s response, while recognizing that contrary dynamics may be at work in the real world of interstate politics.

C. *Limitations Upon the Regional Approach Imposed by Our Federal System of Government*

Our federal system of government provides no special powers or status to cooperative regional ventures between states. If anything, the Constitution is suspicious of regional cooperation supplanting federal power, and requires, under the Compact Clause, that any “Agreement or Compact” between states, or between states and foreign governments, receive congressional approval to be valid.⁶⁵ As a result of the Compact Clause and constitutional doctrines such as the dormant commerce clause, regional action on climate change is “safest” constitutionally if limited to voluntary, nonbinding efforts among participating states.

⁶⁵ Article I, Section 10 of the Constitution provides that: “No State shall enter into any Treaty, Alliance or Confederation No State shall, without the Consent of Congress . . . enter into any Agreement or Compact with another State, or with a foreign Power”

The following section provides examples as to how our structure of federalism could constrain the potential inherent in a regional approach to climate change.

1. *The Problem of Mandatory Regional Requirements*

Although limiting the action agenda to voluntary, nonbinding measures has many advantages, at times it may also be beneficial for provisions of a regional plan addressing climate change to contain measures that are binding upon the participants. In the absence of binding requirements, a prisoner's dilemma can arise, wherein each state has an incentive to "defect" from the agreed-upon goal.⁶⁶ Suppose, for example, that to achieve the reductions needed to achieve 1990 emissions levels by 2010, a New England state must cap the emissions of its in-state power plants. Fearing that such a cap will drive its in-state power plants out-of-business and result in the substitution of power supplied by such plants with power supplied by plants located outside the region, the state decides not to impose the cap. The result of this defection from the agreed-upon goal is to give this state an advantage as against the other state participants in the regional program. Binding requirements on all participants addresses this problem. To be credible, however, such requirements must be backed up by some sort of enforcement mechanism, such as a provision that triggers more onerous requirements in the wake of a state's failure to achieve an agreed-upon goal.

In order to include mandatory measures, however, federal approval in the form of congressional consent would probably be needed. Congressional consent would transform an interstate agreement into an interstate compact, which Congress has the power to enforce.⁶⁷ Although the Supreme Court has decreed that the Compact Clause does not apply to every "compact" or "agreement," it does apply to those "directed to the formation of any combination tending to the increase of political power in the States which may encroach upon or interfere with the just supremacy of the United States."⁶⁸ A regional agreement whereby

⁶⁶ See, e.g., MANCUR OLSON, JR., *THE LOGIC OF COLLECTIVE ACTION* 22–36, 49–52 (1965) (applying the prisoner's dilemma to the generation of public goods); Hardin, *supra* note 3, at 1244–45 (applying the prisoner's dilemma to the problem of overgrazing).

⁶⁷ See *Cuyler v. Adams*, 449 U.S. 433, 440 (1981).

⁶⁸ *Virginia v. Tennessee*, 148 U.S. 503, 519 (1893); see also *United States*

participating states can impose mandatory requirements upon one another would seem to increase the power of the states at the expense of federal power. In contrast, voluntary regional agreements containing only nonbinding provisions do nothing to either enhance the powers of the states involved or intrude upon the powers of the national government, and accordingly probably do not require congressional approval.

Thus far, the existing regional climate “action plans” contain only voluntary measures.⁶⁹ Even the most formal of these plans contain only mutually-shared goals that the participating states hope to achieve working together as well as independently of one another. As a result, whether a regional plan containing mandatory climate-related requirements must receive federal approval has not been tested legally. This lack of binding requirements in current regional climate action plans could reflect the states’ preference that these agreements contain only voluntary measures, or it could demonstrate upfront compliance with the Compact Clause.

2. *The Problem of the “Leakage” of Economic Benefits*

Further limitations on regional approaches to climate change are apparent in the context of proposals for emissions trading of greenhouse gases. As discussed above, such a program is currently under development by northeastern states that are part of RGGI. Other groups of states have expressed interest in developing their own regional emissions trading program.⁷⁰ In a traditional cap and trade program, a government authority establishes a “cap” upon the total amount of a pollutant that can be emitted by sources within the jurisdiction annually and then allocates those emissions to the sources. Sources whose emissions exceed their allowances can either reduce their emissions or

Steel Corp. v. Multistate Tax Comm’n, 434 U.S. 452, 471 (1978) (citing *New Hampshire v. Maine* 426 U.S. 363, 369 (1976)) (upholding, against a Compact Clause challenge, the formation of a multi-state tax commission formed to develop tax policy for various states, which would be implemented by each state individually, and finding that the Clause is “directed to the formation of any combination tending to the increase of political power in the States, which may encroach upon or interfere with the just supremacy of the United States”).

⁶⁹ See NEW ENGLAND GOVERNORS & EASTERN CANADIAN PREMIERS, *supra* note 37; WEST COAST GOVERNORS’ GLOBAL WARMING INITIATIVE, *supra* note 47.

⁷⁰ See, e.g., WEST COAST GOVERNORS’ GLOBAL WARMING INITIATIVE, *supra* note 47.

purchase allowances from sources whose emissions are less than their allocated allowances.⁷¹

Implemented on a regional basis, a group of states may encounter obstacles to maintaining the integrity of whatever uniform greenhouse gas emissions cap they choose to establish. In a traditional cap and trade program dealing with a pollutant with localized environmental effects, this difficulty means that program managers must be able to prevent “leakage,” to geographic areas outside that encompassed by the program, of emissions and the economic benefits associated with the activity generating the emissions.⁷² “Emissions leakage” refers to the migration of emissions that would otherwise occur within the regulated geographic area, to an area outside this geographic area.⁷³ This is problematic because emissions could shift to sources upwind of those located under the cap, thereby undermining the environmental quality benefit the cap seeks to create.⁷⁴ “Economic leakage” refers to the migration of industry or other economic benefits away from the geographic area covered by the cap, (“regulated area”), to a geographic area not covered by the cap, (“unregulated area”).⁷⁵ Because the location of greenhouse gas

⁷¹ See AULISI ET AL., *supra* note 33, at 4–5. One example of a cap and trade program is the acid rain program in the Clean Air Act. See 42 U.S.C. §§ 7651–7651(o) (2000).

⁷² See Jonathan B. Wiener, *Something Borrowed for Something Blue: Legal Transplants and the Evolution of Global Environmental Law*, 27 *ECOLOGY L. Q.* 1295, 1328–29 (2001).

⁷³ AULISI ET AL., *supra* note 33, at 13.

⁷⁴ This has been a worry with regional based cap and trade programs involving localized pollutants. For example, in 2000, the New York legislature passed a law which would have precluded utilities in New York State from selling sulfur dioxide pollution allowances, distributed under the federal Clean Air Act acid rain program, to other utilities in upwind states. See *Air Pollution Mitigation Law*, N.Y. Pub. Serv. L. § 66-k (requiring the New York Public Service Commission to assess an “air pollution mitigation offset” upon any New York utility whose sulfur dioxide allowances are sold or traded to one of fourteen upwind states). A federal district court struck down the New York law on the basis of both federal preemption under the Clean Air Act and the dormant commerce clause; the district court’s preemption ruling was affirmed on appeal. See *Clean Air Markets Group v. Pataki*, 194 F. Supp. 2d 147, 157–63 (N.D.N.Y. 2002), *aff’d in part*, 338 F.3d 82 (2d Cir. 2003). The leakage of emissions of sulfur dioxide and oxides of nitrogen to areas outside the regional cap was similarly a concern of the states engaged in the Transportation Commission’s NOx Budget Program, but subsequent analysis indicates that little leakage occurred. See AULISI ET AL., *supra* note 33, at 13–14.

⁷⁵ AULISI ET AL., *supra* note 31, at 13.

emissions is irrelevant to the impacts of climate change,⁷⁶ unlike a cap and trade program involving a localized pollutant, migration of greenhouse gas emissions to an unregulated area will not detract from the program's goals with respect to reducing pollutant levels within the area subject to the cap. Instead, the cap and trade program will simply be less effective at reducing global levels of the greenhouse gases and the states will be denied their ability to make a more effective contribution to reducing such global levels. The potential of a regional cap and trade program to result in the economic leakage is the same as that of a cap and trade program involving a regional pollutant. Beneficial economic activities that produce greenhouse gases may be tempted to shift their production to geographic areas outside the cap in order to avoid the costs involved in participating in the cap and trade program.

To reduce the extent of economic leakage, state officials submitting to a regional cap and trade program for greenhouse gases might wish to discourage greenhouse-gas emitting activities from shifting to geographic areas outside the cap. To remove the relocation incentive, states might consider banning the importation of goods produced through a carbon-intensive activity carried out in a geographic region not subject to an emissions cap. Thus, for example, the region might wish to ban the importation of electricity from generators located in states that are not participants in the regional greenhouse gas cap and trade program.

Such leakage-reduction efforts, however, clearly run afoul of the dormant commerce clause which prohibits states from discriminating against goods moving in interstate commerce.⁷⁷ State laws barring the importation of out-of-state power would be prohibited under this doctrine. For such discrimination to be legal, it must be authorized by the "unambiguous intent" of Congress.⁷⁸ An example of such congressional authorization of state discrimination against interstate commerce is found in the Low-Level Radioactive Waste Policy Amendments Act of 1985.⁷⁹ This

⁷⁶ See IPCC, *supra* note 60, at 267.

⁷⁷ See, e.g., *Wyoming v. Oklahoma*, 502 U.S. 437, 454–55 (1992).

⁷⁸ *Wyoming v. Oklahoma*, 502 U.S. at 458; see also *Prudential Ins. Co. v. Benjamin*, 328 U.S. 408, 427–31 (1946) ("This 'negative' aspect of the Commerce Clause prohibits economic protectionism—that is, regulatory measures designed to benefit in-state economic interests by burdening out-of-state competitors.").

⁷⁹ Low-Level Radioactive Waste Policy Amendments Act of 1985, Pub. L. No. 99-240, 99 Stat. 1842, 1845 (1986).

Act authorized states that joined a regional compact to dispose of low level radioactive waste to bar the import of such waste after a particular date.⁸⁰ While striking down a provision of the Act requiring states not joining a regional compact to “take title” to the radioactive waste generated within their jurisdiction, the Supreme Court upheld the provisions authorizing the waste ban.⁸¹ Such unambiguous intent to allow states to discriminate against electricity generated outside the area subject to the greenhouse gas cap and trade program would seem to be required for states to prevent economic leakage. Given its current stance on climate change, however, it is unlikely that Congress will aide regional greenhouse gas cap and trade programs by authorizing the states involved to discriminate against interstate commerce.

3. *The Problem of Linking Domestic and Foreign Climate Initiatives*

Because greenhouse gases are global pollutants whose emissions are the subject of mitigation efforts around the world, it is not surprising that policymakers crafting regional solutions to climate change in the United States have many opportunities to link their proposals to those being pursued by other nations. Normally such linkage would be pursued by the federal government or under the auspices of an agreement or treaty. But in the absence of strong federal leadership on climate change, the states are being left to work out the contours of international cooperation largely by themselves. This state–foreign nation linkage raises several questions: are states exceeding their authority by entering into cooperative agreements with foreign nations, and are the states subject to limitations upon linking a U.S. regional emissions trading program with a foreign government’s trading program?

One commentator claims that the joint regional climate change action plan developed by the New England Governors and Eastern Canadian Premiers exceeds the power of states under the

⁸⁰ 42 U.S.C. § 2021d(c) (2000).

⁸¹ See *New York v. United States*, 505 U.S. 144, 174 (1992) (holding that, unlike the “take title” provision that burdened states as sovereign entities, states affected by the waste ban provision “are not compelled by Congress to regulate, because any burden caused by a State’s refusal to regulate will fall on those who generate waste and find no outlet for its disposal, rather than on the State as a sovereign”).

Constitution.⁸² According to this commentator, Jon Reisman, the agreement is a “transparent attempt to implement the Kyoto Protocol, without reference to the complex terms of the Protocol itself.”⁸³ Consequently, according to Reisman, the plan violates Article I, Section 10 of the Constitution, which bars states from entering into a treaty, alliance, confederation, agreement or compact with another state or nation.⁸⁴ The agreement of the Governors and Premiers does commit both the New England states and several Canadian provinces to greenhouse gas emission reduction goals, though the goals are actually less stringent than the targets contained in the Kyoto Protocol for the U.S. and Canada. The Governors and Premiers are, however, doing little more than expressing their mutual intent to reduce greenhouse gases; nothing they are doing commits either nation as a whole to reduction targets or to any other requirement of the Kyoto Protocol. No aspect of the Governors’ nonbinding agreement with Canadian states would seem to enhance the powers of the states vis-à-vis the national government, and it would appear to stay outside of the Supreme Court’s modern definition of an “agreement” or “compact” subject to the Compact Clause.⁸⁵ Nevertheless, in executing the agreement, the states do appear to be standing in the shoes of the federal government.

A second group of issues result from the possibility of linking U.S. regional emissions trading regimes with those of foreign nations that have ratified the Kyoto Protocol. Greenhouse gas emissions trading regimes are up and running in both the European Union and Canada, which have both ratified the Kyoto Protocol.⁸⁶

⁸² *Joint Hearing Before the S. Comm. on Env’t and Pub. Works and Before the S. Comm. on Foreign Relations*, 107th Cong. 333–35 (2002) (statement of Jon Reisman, Associate Professor of Economics and Public Policy, University of Maine), available at http://epw.senate.gov/107th/Reisman_072402.htm.

⁸³ *Id.* at 334.

⁸⁴ *Id.* at 333 (citing U.S. CONST. art. 1, § 10).

⁸⁵ For a broad construction of the terms “treaty,” “agreement,” and “compact,” Reisman quotes from Chief Justice Taney’s opinion in *Holmes v. Jennison*, 39 U.S. (14 Pet.) 540, 570–72 (1840), according to which Section 10 of Article 1 was interpreted in the “most comprehensive terms” so as to “cut off all connection or communication between a State and a foreign power.” *Holmes*, 39 U.S. at 572. However, this broad interpretation has been replaced by the modern interpretation found in *United States Steel Corp. v. Multistate Tax Comm’n*, 434 U.S. 452, 464, 470–72 (1978). See also *supra* text accompanying note 67.

⁸⁶ The European Community ratified the Kyoto Protocol on May 31, 2002

The states involved in developing a regional greenhouse gas emissions trading market in the United States have discussed, with EU representatives, the possibility of linking their two emissions trading schemes.⁸⁷

On January 1, 2005 the EU kicked off an emissions trading program involving all 25 EU member states ("EU-ETS").⁸⁸ The first phase of trading will last for two years, until 2007, and is limited to carbon dioxide emissions from approximately 12,000 large facilities within certain key industrial sectors.⁸⁹ The second phase will span 2008 through 2012 and will involve tighter overall caps, additional sectors and possibly other greenhouse gases besides carbon dioxide.⁹⁰ Under the EU-ETS, sources trade carbon dioxide emissions allowances distributed by each individual EU member state according to their unique national allocation plan.⁹¹ Just as each member country has a different emissions reduction target, each also has a different plan for allocating allowances among covered sources located within the member country. Allowances distributed under each national plan are designed to

and Canada did so on December 17, 2002. *See* UNFCCC, Kyoto Protocol, Status of Ratification, <http://unfccc.int/2860.php> (follow "Status of Ratification" hyperlink) (last visited Oct. 8, 2005).

⁸⁷ *See* Charles J. Hanley, *U.S. States Group Seeks Global-Warming Action*, PHILA. INQUIRER, Dec. 17, 2004, at A31, Industry clearly favors such linkage because it would increase its options in complying with a U.S. regional cap and trade program. The Northeast Regional Greenhouse Gas Coalition (a major industry lobbying group representing major energy, technology, waste management, and pharmaceutical companies with significant operations in the Northeast) is strongly advocating such linkage between RGGI and the European Union's emissions trading program. *See* NE. REG'L GREENHOUSE GAS COAL., REGIONAL GREENHOUSE GAS INITIATIVE POLICY RECOMMENDATIONS 31 (2005), available at http://www.rggi.org/docs/neghg_recommend.pdf ("The European Union, Canada, and Australia are all designing CO₂ cap-and-trade programs. To increase the cost-effectiveness of reducing CO₂ emissions, RGGI should be designed to allow reciprocity with these emerging programs.").

⁸⁸ *See* Council Directive 2003/87, 2003 O.J. (L 275) (EC) (establishing a scheme for greenhouse gas emissions trading within the Community and amending Council Directive 96/61/EC); *see also* PEW CTR. ON GLOBAL CLIMATE CHANGE, THE EUROPEAN UNION EMISSIONS TRADING SCHEME (EU-ETS): INSIGHTS AND OPPORTUNITIES, available at <http://www.pewclimate.org/document.cfm?documentID=440>.

⁸⁹ These sectors are: electricity and heat production plants, oil refineries, coke ovens, metal ore and steel installations, cement kilns, glass manufacturing, ceramics manufacturing, and paper, pulp and board mills. PEW CTR. ON GLOBAL CLIMATE CHANGE, *supra* note 88, at 7.

⁹⁰ *See id.* at 16.

⁹¹ *See id.* at 7, 11–14.

reach that nation's cap and, under the European Union's burden-sharing agreement, collectively each EU member nation's cap is designed to achieve the EU's Kyoto commitment to reduce greenhouse gases by 8 percent below 1990 levels by the years 2008–2012.⁹²

As of now, Canada has no active climate change emissions trading program, though it has had pilot programs in the past and is currently engaged in stakeholder discussions about a future greenhouse gas emissions trading program.⁹³ Canada's first pilot program, implemented in Ontario in 1996, consisted of a voluntary, industry-led initiative according to which the government of Ontario provided credits and recognition to companies that reduced the emission of greenhouse gases and other pollutants in the Windsor-Quebec City corridor.⁹⁴ A second pilot, implemented in 1998 by the federal government, also covered greenhouse gases.⁹⁵

In theory, linking a regional greenhouse gas emissions trading program with a program in effect in either Canada or the EU has many advantages. First, it expands the geographic size of a regional United States trading market and thereby enhances the efficiency of the market.⁹⁶ Second, linkage with a foreign trading scheme would provide important experience harmonizing the rules behind emissions trading programs, experience that would be especially valuable for the U.S. sources participating in such a program.

Nevertheless, the linking of a regionally-based emissions trading program within the U.S., a country that is not a party to the Kyoto Protocol, with an emissions trading program in a country

⁹² See Council Directive, *supra* note 88, at 32, ¶ 4.

⁹³ See National Round Table on the Env't and the Econ., Canada: Progress on Greenhouse Gas Emissions Trading, http://www.nrtee-trnee.ca/eng/programs/ArchivedPrograms/Emission-Trading/overview_countries_Canada.htm (last visited Oct. 8, 2005).

⁹⁴ See *id.*

⁹⁵ See *id.* This pilot was known as the Greenhouse Gas Emission Reduction Trading Pilot ("GERT"). For more information about GERT, see GREENHOUSE GAS EMISSION REDUCTION TRADING PILOT BACKGROUNDER (2000), available at <http://www.gert.org/background/backgrounder.pdf>.

⁹⁶ See, e.g., Menz, *supra* note 55, at 814 (noting that, with respect to reducing sulfur dioxide levels in Canada, "[e]nhancing the size of the Canadian emissions allowance market by allowing trades with United States sources would expand the opportunities for emissions transfers and allow for a more competitive market than if transfers were limited to Canadian sources alone.").

that is party to the Kyoto Protocol, poses several issues. First, it has been suggested that such state-foreign trading would require congressional approval under the Compact Clause.⁹⁷ Second, because the United States is not a member of the Kyoto Protocol, should an emissions trading program in the U.S. be linked with a trading program in a country that has ratified Kyoto, the allowances could only be traded in one direction: into the United States. While nothing in the Kyoto Protocol prohibits parties from selling credits to sources in nonparty nations, it would appear that credits generated in nonparty nations cannot be used for compliance.⁹⁸ This significantly limits the benefits of linking the two trading regimes, as it would increase the pool of allowances available to U.S. sources and inflate the caps in place in the U.S. regional trading regimes. Excess allowances available from another country's emissions trading regime would ease compliance for U.S. sources as the availability of a greater number of excess allowances in the market would lower the price of an allowance and thereby make it more likely that sources would buy allowances to cover their emissions rather than seek out operational or technical solutions to reduce the quantity of greenhouse gases that they emit. Designers of a regional emissions trading program in the United States might anticipate this and restrict the number of allowances allocated domestically so as not to have the number of allowances available diluted by foreign allowances being traded into the regional market.

⁹⁷ It has been reported that Representative Joe Barton, Chair of the House Energy and Commerce Committee, has said that his committee would tend to look at any such arrangement "with a lot of skepticism." ROBERT MELTZ, GLOBAL WARMING: THE LITIGATION HEATS UP 18 n.64 (CRS Report for Congress, Order Code RL32764, 2005), available at <http://www.ncseonline.org/NLS/CRSreports/05jan/RL32764.pdf>. The same arguments applicable to whether the agreement between the New England Governors and the Eastern Canadian Premiers requires congressional approval would seem to apply. See *supra* notes 82–85 and accompanying text. An additional factor in the emissions trading scenario that militates against the need for congressional approval is the fact that emissions trades could be completed solely by the private sources involved and hence could be performed without government-level involvement.

⁹⁸ Kyoto Protocol, Article 16 bis, Conference of the Parties to the Framework Convention on Climate Change December 10, 1997, *Kyoto Protocol*, FCCC/CP/1997/L.7/Add.1, Art. 17 (restricting emissions trading to trades between parties to the Kyoto Protocol).

V. CONCLUSIONS AND RECOMMENDATIONS

Regional initiatives have the potential to enhance the contribution of state and local governments to climate change mitigation, though further research is needed to confirm whether this is in fact the result being achieved in practice. The following is a short list of recommendations for facilitating a regional approach to global climate change within the United States.

1. *Take advantage of existing regional organizations.*

To maximize the opportunities for regional cooperation on climate change, policymakers should take advantage of existing cooperative regional programs. This is the basis of the New England Governors and Eastern Canadian Premiers' Climate Action Plan, which is based on the longstanding relationship between New England and the Canadian states. Most existing regional environmental programs concern a natural resource shared by several states and perhaps countries on our borders—Canada or Mexico. The logic behind the regional approach is that it makes more sense for the group of states that have a direct and substantial interest in a matter to create a program to protect a resource, as opposed to requiring national legislation or leaving the matter to the efforts of individual states.⁹⁹ Although climate change mitigation does not require that states cooperate just with their immediate neighbors—due to the global nature of the problem, states could achieve the same impact through cooperation with states or foreign governments in completely different geographic areas¹⁰⁰—cooperation along geographic lines is nonetheless a good starting place as it exploits existing cooperative relationships that may have formed around preserving or protecting other shared resources.

⁹⁹ See Peter R. Jenetten, *State Environmental Agreements with Foreign Powers: The Compact Clause and the Foreign Affairs Power of the States*, 8 GEO. INT'L ENVTL. L. REV. 141, 142–45 (1995).

¹⁰⁰ Among interstate approaches to environmental problems, cooperation in addressing climate change is unique in that the states involved need not be geographic neighbors or even occupants of the same geographic region. Any reduction in greenhouse gas emissions will have the same environmental impact, regardless of where obtained geographically; as a global pollutant greenhouse gases do not have local concentrations, only a single global concentration measured in the atmosphere. States are thus not limited to their geographic neighbors when searching for climate partners and can enter alliances based upon economic or social advantages and compatibilities.

2. *Take advantage of the lobbying and promotional efforts of nonprofit regional environmental and energy organizations to craft joint responses to environmental issues by sharing technical information and administrative and legal expertise.*

In addition to taking advantage of existing regional cooperative arrangements, states should also take advantage of the lobbying and promotional efforts of regional environmental organizations. In the past, these organizations have been major players in furthering environmental initiatives across a particular region. For instance, the Northeast States for Coordinated Air Use Management (“NESCAUM”) was created in 1967 to coordinate the work of air quality agencies of the New England states plus New York and New Jersey.¹⁰¹ NESCAUM has provided technical and regulatory information in support of the northeastern states adopting California’s more stringent vehicle emission standards.¹⁰² Provided they survive legal challenge, this means that California’s recently proposed limits upon vehicle greenhouse gas emissions will be effective across the Northeast. Seven states—Rhode Island, Connecticut, Massachusetts, Vermont, Maine, New Jersey, and New York—have adopted the California automobile greenhouse gas standards.¹⁰³ Such copycat behavior is expected to result in clean car standards for 25 percent of the U.S. light-duty vehicle market.¹⁰⁴ This is just one example of how such regional

¹⁰¹ See Ne. States for Coordinated Air Use Mgmt., About NESCAUM, <http://www.nescaum.org/about.html> (last visited Nov. 11, 2005).

¹⁰² See NE. STATES FOR COORDINATED AIR USE MGMT., ADOPTING THE CALIFORNIA LOW EMISSION VEHICLE PROGRAM IN THE NORTHEAST STATES: AN EVALUATION (1991), available at <http://www.nescaum.org/pdf/mobile91.pdf>; NESCAUM, COMPARING THE EMISSION REDUCTIONS OF THE LEV II PROGRAM TO THE TIER 2 PROGRAM (2003), available at http://clf.org/uploadedFiles/CLF/Programs/Clean_Energy_&_Climate_Change/Energy_Efficiency/Vehicle_Efficiency_Standards/LEV_report_final.pdf. The Conservation Law Foundation (“CLF”), a regional environmental organization in the Northeast is working to push rulemaking and legislation to finalize the adoption of California’s climate change regulations in the northeast states that have yet to adopt them. See Conservation Law Found., Fighting Back: Clean Car Campaign, <http://www.clf.org/programs/projects.asp?id=570> (last visited Nov. 14, 2005).

¹⁰³ See CTR. FOR POLICY ALTERNATIVES, RESTORING THE PROMISE OF AMERICA: 2005 PROGRESSIVE AGENDA FOR THE STATES 204–206 (2004), available at <http://www.stateaction.org/publications/agenda/2005/2005agenda.pdf>.

¹⁰⁴ Jeff Plungis, *Canada Considers Curbs on Emissions*, DETROIT NEWS, Nov. 7, 2004, at C1.

organizations can work as conduits between the states, emphasizing their common aspects and doing much of the behind-the-scenes work involved in bringing together independent state governments to work on a common goal.

3. *Promote the development of model regulations and generously circulate such models among state policymakers.*

Finally, much can be accomplished on climate change through the creation and dissemination of model legislation and programs. For example, one of the most important climate change initiatives in recent years has been the renewable portfolio standard, where states require that a percentage of power supplied to their state come from renewable sources. Twenty-one states and Washington D.C. now have renewable portfolio standards.¹⁰⁵ Much of the spread of this idea is a result of the development of model legislation and guidelines issued by organizations such as the American Wind Energy Association.¹⁰⁶

At this point in time, regional cooperation on climate change is very much at its beginning stages. Whether the number of such cooperative ventures will increase remains to be seen. Given the many benefits of a regional approach to a global environmental problem such as climate change, regional cooperation merits more research. Such research should examine how regional cooperation is functioning – as a force for greater efforts to mitigate climate change, or as a way to address constituent calls for action without delivering meaningful action. Assuming regional cooperation is a means to more aggressive action to mitigate climate change on the sub-global level, there exist several ways to enhance its development: through the use of preexisting regional cooperative ventures, by taking advantage of the work of regional environmental nongovernmental organizations and by promoting the dissemination of model laws and programs which can be adopted by states individually within a given region.

¹⁰⁵ UNION OF CONCERNED SCIENTISTS, FACT SHEET: RENEWABLE ELECTRICITY STANDARDS AT WORK IN THE STATES 1 (2005), *available at* http://www.ucsusa.org/assets/documents/clean_energy/RES_in_the_States_-_01-05_Update.pdf.

¹⁰⁶ *See, e.g.,* AWEA, MODEL RENEWABLE ENERGY STANDARDS, http://www.awea.org/smallwind/toolbox/TOOLS/model_res.pdf (last visited Oct. 5, 2005).