RAYMOND A. BIERING* AND BRIAN S. BIERING**

Massachusetts v. EPA: Rescuing Icarus with Environmental Federalism

* Raymond A. Biering is Counsel for the San Luis Obispo County Air Pollution Control District, is a legal counsel committee member of the California Air Pollution Control Officers Association (CAPCOA), and has practiced environmental and administrative law in California in the public and private sectors since 1979. During his career, Raymond Biering served as senior Deputy County Counsel for the County of San Luis Obispo, California, represented numerous public agencies as general counsel, and handled trial and appellate cases in the fields of air pollution, solid and hazardous waste, environmental, land use, local agency formation, and administrative law. He is a member of the California State Bar, and is admitted to practice before the California courts, various federal courts, and the United States Supreme Court. Raymond Biering earned a J.D. from Loyola Law School, Los Angeles, in 1979, and graduated with a B.A. in History from University of California, Berkeley, in 1974.

** Brian S. Biering graduated from the University of Oregon School of Law in 2008. While there, he was a Senior Editor on the *Journal of Environmental Law and Litigation*. He has clerked for the California Energy Commission, and prior to law school, served as an Executive Fellow in the California Resources Agency. Brian Biering graduated from the University of California, Davis, with a B.S. in Managerial Economics.

Icarus is a character in Greek mythology whose arrogance led him to ignore the warnings of his father, Daedalus, and fly higher than he should with the wings he built from feathers and wax. When he flew too close to the sun, the wax holding his wings together melted, causing Icarus to fall to earth and drown. The lessons about the pitfalls of Icarus' arrogance are relevant to the climate change debate. The growing public concern over the issue may signal a recognition of past and present arrogance, and the myriad legal developments in both courts and legislatures can be seen as an attempt to warn us against getting too close to the sun. The purpose of this Article is to give an overview of legal developments on the federal level, and at the same time show that efforts at the state level may do the most to keep us from drowning.

Climate change is viewed by many as a global environmental catastrophe close to the "tipping point," while others see climate change as an alarmist prediction based on suspect science. Truth is rarely found in the extremes. Assuming that we should believe the Secretary-General of the United Nations and the Intergovernmental Panel on Climate Change (IPCC), the environmental crisis is apparently imminent. In his address on the IPCC Fourth Assessment Report (2007),[1] United Nations Secretary-General Ban Ki-moon stated:

> I come to you humbled after seeing some of the most precious treasures of our planet—treasures that are being threatened by humanity's own hand.
>
> . . . .
>
> Slowing—and reversing—these threats are the defining challenge of our age. The world looks to our climate brain trust to educate, inform and guide us.[2]

Our United States Supreme Court, or at least a 5-4 majority of the Justices, apparently agrees with the IPCC's science. In *Massachusetts v. Environmental Protection Agency* (*EPA*), the Court helped set in motion a more vigorous approach at all

1 INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT, SUMMARY FOR POLICY MAKERS (2007), *available at* http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf.

2 Ban Ki-moon, Sec'y-Gen., United Nations, Address to the Intergovernmental Panel on Climate Change (Nov. 17, 2007), *available at* http://www.un.org/apps/sg/sgstats.asp?nid=2869.

levels of government to address climate change.[3] Much has already been written about *Massachusetts*, particularly in the areas of standing and the Court's conclusion that carbon dioxide and other greenhouse gases are "air pollutants" under the Clean Air Act (CAA).[4] *Massachusetts* is arguably the Supreme Court's most important environmental case in recent years, although its significance lies not simply in what the Court said about standing and greenhouse gases, but where those holdings will ultimately take us in attempting to address climate change in the time we have left.[5]

The scope of this Article is not merely to "rediscover" what the Supreme Court held in *Massachusetts*, but rather to examine where the case takes us in furtherance of comprehensive, economy-wide greenhouse gas solutions, particularly at the regional and state levels. Clearly, at least a bare majority of the Justices recognized that climate change, and specifically the greenhouse gases contributing to climate change, present the most pressing environmental challenge of our time.[6] Ultimately, the recognition by the judiciary that something as ever-present as CO_2 might actually be an air pollutant has set in motion a dialogue aimed at moving beyond piecemeal regulation and towards economy-wide climate change solutions.

Although not necessarily as a result of *Massachusetts*, but significant nevertheless, Congress is responding to the global

3 *See* Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438 (2007).

4 *See, e.g.*, Robert L. Glicksman, *Balancing Mandate and Discretion in the Institutional Design of Federal Climate Change Policy*, 102 NW. U. L. REV. COLLOQUY 196 (2008), http://colloquy.law.northwestern.edu/main/2008/02/balancing-manda.html; Hari M. Osofsky, *The Geography of Climate Change Litigation Part II: Narratives of* Massachusetts v. EPA, 8 CHI. J. INT'L L. 573 (2008); Jonathan Z. Cannon, *The Significance of* Massachusetts v. EPA, 93 VA. L. REV. In Brief 53 (2007), http://www.virginialawreview.org/inbrief/2007/05/21/cannon.pdf; Arnold W. Reitze, Jr., *Controlling Greenhouse Gas Emissions From Mobile Sources*–Massachusetts v. EPA, 37 ENVTL. L. REP. 10,535 (2007); Jonathan H. Adler, *Warming Up to Climate Change Litigation*, 93 VA. L. REV. In Brief 63 (2007), http://www.virginialawreview.org/inbrief/2007/05/21/adler.pdf.

5 Consider the timeframe involved in the final adjudication of *Massachusetts*. The petitioners originally filed a rulemaking petition asking the EPA to regulate greenhouse gas emissions from new motor vehicles in 1999. *Massachusetts*, 127 S. Ct. at 1449. Ultimately, the case took almost eight years before the Supreme Court decided it in 2007.

6 *Id.* at 1446.

climate change issue with federal legislation.[7] Meanwhile, the EPA and other federal agencies are now obligated to grapple with greenhouse gas issues and can no longer rely on the purported "uncertainty" surrounding them.[8] Although *Massachusetts* arose in the context of regulation of mobile sources,[9] the federal government ultimately will be obligated to turn to stationary sources, as further explained in this Article.[10]

At the same time, various regulatory programs to address climate change are being developed at the regional, state, and local levels. The inevitable interplay between federal and state regulation of greenhouse gases will certainly raise substantive legal conflicts, particularly in the areas of federal supremacy, preemption, and Dormant Commerce Clause issues. The resulting legislative, regulatory, and judicial processes will take a long time to play out and time may not be a luxury we can afford.

It is ironic, and perhaps distressing, that *Massachusetts* was decided a decade after the Kyoto Protocol,[11] in which most of the world's nations joined in the international effort to address climate change. The United States declined and still struggles to implement meaningful solutions.[12] At the United Nations Climate Change Conference held in Bali in December 2007, the contentious two-week meeting concluded on a slightly optimistic note with the United States, facing criticism from other nations' delegations, finally relenting in its opposition to programs to

7 Numerous climate change bills were introduced in the 110th Congress, including an ambitious proposal by Senator McCain that seeks to create a cap-and-trade scheme. Climate Stewardship and Innovation Act of 2007, S. 280, 110th Cong. (2007). As proposed, Senate Bill 280 would cap emissions levels in certain business sectors at 2000 emission levels and would achieve the goal through a cap-and-trade emissions scheme. *Id.*

8 *Massachusetts*, 127 S. Ct. at 1463.

9 *Id.*

10 *See* 42 U.S.C. § 7411(a)(3) (2006) (defining "stationary sources" under the Clean Air Act as "any building, structure, facility, or installation which emits or may emit any air pollutant.").

11 Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 37 I.L.M. 22, 26 (1998).

12 INST. FOR ENERGY AND ENVTL. RESEARCH & LAWYERS' COMM. ON NUCLEAR POLICY, RULE OF POWER OR RULE OF LAW? AN ASSESSMENT OF U.S. POLICIES AND ACTIONS REGARDING SECURITY-RELATED TREATIES 111–14 (Nicole Deller et al. eds., 2003).

provide more technological assistance to developing nations.[13] Still, the Bali Action Plan produced by the Conference ultimately does not commit countries to specific climate change actions, but merely sets an agenda and schedule for further initiatives, and facilitates assistance for developing nations in terms of technology and financial assistance.[14] It is becoming increasingly imperative that the United States play a stronger role in addressing climate change.

If we accept the science and believe the United Nations' IPCC and our own Supreme Court, then we must accelerate our efforts as a nation towards reducing the risks of global climate change. Unfortunately, our legislative, legal, and judicial processes are not designed for this kind of expedited decision making, especially when an effective, "global" solution implicates regulation across the entire economy.[15] Meaningful solutions would balance the competing environmental and economic concerns over climate change, and with the powers behind these interests, that will take much time to effectively implement. Implementation would require complex program development, legislation, rulemaking, and litigation. Ultimately, it will likely be years or possibly decades before comprehensive, economy-wide environmental programs are in place on the national level that effectuate substantive reductions to the risks of climate change. To the extent that *federal* climate change initiatives continue to be limited to voluntary programs such as tax incentives, the efforts may be ineffective in the absence of more vigorous regulatory programs and mandates.[16]

13 Joseph Coleman, *Bali Climate Change Talks Reach Agreement*, WTOPNEWS.COM, Dec. 15, 2007, http://www.wtopnews.com/?nid=220&pid=0&sid=1302463&page=1.

14 *See* U.N. Framework Convention on Climate Change, *Bali Action Plan*, Decision

-/CP.13 (2007) (advance unedited version), *available at* http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf.

15 From the authors' experience, the timeframes involved in any significant environmental issue, in combination with administrative agency decision making, followed by trial court litigation over that decision making, followed by further appellate litigation, to reach the point of a final adjudication, ultimately takes years, not months, to complete. Five years is, perhaps, wishful thinking. Consider, for example, the decade it took simply to fully adjudicate *Massachusetts v. EPA*.

16 Most, if not all, of the climate change initiatives implemented by the Administration through the EPA are voluntary initiatives. *See, e.g.*, U.S. Envtl. Prot. Agency, Climate Change—U.S. Climate Policy, Current and Near-Term

More optimistically, the prospect of comprehensive federal, state, and regional approaches to climate change is not hopeless. The ultimate focus of this Article is an examination of the complex interplay between the existing federal and state regulatory programs available to address climate change and the legal issues inherent in that interplay. There are already numerous examples of effective federal and state co-regulation of environmental matters across the board in the areas of air, water, and solid/hazardous waste regulation.[17] There is no reason to assume climate change cannot be addressed similarly.

This Article first addresses the ultimate impact of *Massachusetts* in the context of the law of climate change in the United States. We analyze the immediate implications of probable regulatory actions at the federal level which are either mandated by *Massachusetts* or will likely follow as a result of the Supreme Court's decision. The Article then considers the existing regional and state climate protection efforts evolving independently of federal climate change initiatives. We argue that these "sub-national" initiatives are evolving in a "federal vacuum."[18] As a case study of sub-national climate change initiatives evolving in the federal vacuum, California's pioneer programs are looked to as an important economy-wide program that may also play a key role in furthering notions of environmental federalism. In light of the evolution of programs like those in California, this Article considers the potential federal and state conflicts that may arise as a result of regional,

Greenhouse Gas Reduction Initiatives, http://www.epa.gov/climatechange/policy/neartermghgreduction.html (last visited Mar. 29, 2008).

17 For example, the effective co-regulation of federal and state air law is discussed more fully below. Similarly, the federal Clean Water Act, 33 U.S.C. §§ 1251–1387 (2006); the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9601–9675 (2006); and the National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4347 (2006) all have comparable state counterparts.

18 "Subnational" refers to both regional and state policy such as the Northeastern Regional Greenhouse Gas Initiative. *See* Regional Greenhouse Gas Initiative: An Initiative of the Northeast & Mid-Atlantic States of the U.S.; California Global Warming Solutions Act of 2006, CAL. HEALTH & SAFETY CODE §§ 38500–38599 (West 2006); Regional Greenhouse Gas Initiative (RGGI), http://www.rggi.org/ (last visited Mar. 29, 2008) [hereinafter RGGI]. The term federal vacuum is a term used to describe the delay inherent in implementing comprehensive federal climate change policy.

state, and local climate change initiatives. Finally, the Article considers goals of environmental federalism, wherein preemption is limited and both federal and sub-national coordination of policy is maximized. By viewing the states as laboratories for effective policy, this conception of environmental federalism would further national reductions in greenhouse gases through the encouragement of sub-national efforts.

I
MASSACHUSETTS V. EPA: THE NEW SOLICITUDE FOR STATE ACTION

In *Massachusetts v. EPA*, the state of Massachusetts and other petitioners brought an action challenging EPA's refusal to regulate motor-vehicle emissions allegedly contributing to climate change.[19] The EPA argued that the Clean Air Act (CAA) did not authorize it to address climate change and that executive policy specifically addressing climate change warranted EPA's refusal to regulate vehicular emissions.[20] The Supreme Court disagreed.[21]

Essentially, the Supreme Court initially held that the petitioners had standing to challenge EPA's denial of their rulemaking petition since at least one of the petitioners (Massachusetts) had asserted a concrete injury essential for standing.[22] Once the Court found standing, it analyzed the applicable CAA provisions and held that, because greenhouse gases are clearly within the CAA's broad definition of an air pollutant, the EPA has the statutory authority to regulate the

19 Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438, 1446 (2007). The list of petitioners was extensive, including twelve states, the District of Columbia, American Samoa, New York City, Baltimore, and a number of private organizations. *Id.* at 1446 nn.2–4.

20 *See id.* at 1450.

21 *Id.* at 1463.

22 *Id.* at 1456. "Because the Commonwealth owns a substantial portion of the state's coastal property it has alleged a particularized injury in its capacity as a landowner. The severity of that injury will only increase over the course of the next century . . . ." *Id.* (internal quotation and citation omitted). The Court concluded: "With that in mind, it is clear that petitioners' submissions as they pertain to Massachusetts have satisfied the most demanding standards of the adversarial process." *Id.* at 1455.

emissions of such gases from new motor vehicles.[23] Significantly, the Supreme Court further held that, because it is undisputed that climate change threatens serious environmental harm, policy considerations are irrelevant to EPA's statutory mandate under the CAA to determine whether greenhouse gases contribute to climate change and whether motor vehicle emissions of such gases actually or potentially endanger public health or welfare.[24]

With regard to the issue of standing in *Massachusetts*, some scholars have viewed the Supreme Court's approach to standing as "somewhat unusual."[25] Interestingly, the Supreme Court observed that "[w]hen a State enters the Union, it surrenders certain sovereign prerogatives," but obtains "a concomitant procedural right to challenge the rejection of its rulemaking petition as arbitrary and capricious."[26] Moreover, the Court concluded, "[g]iven that procedural right and Massachusetts' stake in protecting its quasi-sovereign interests, the Commonwealth is entitled to special solicitude in our standing analysis."[27]

The implication of the Supreme Court's holding regarding Massachusetts' basis for standing and "special solicitude," and by extension to other states and possible parties, is the potential for new state and local efforts to compel the regulation of environmental programs and policies through the courts in areas previously regarded as beyond judicial inquiry.[28] In that regard, it is particularly noteworthy that the Court recognized a fundamental distinction between an administrative agency's discretion to initiate enforcement actions, as compared to its

23 *Id.* at 1459–60.

24 *Id.* at 1455, 1460.

25 Kathryn A. Watts & Amy J. Wildermuth, Massachusetts v. EPA*: Breaking New Ground on Issues Other Than Global Warming*, 102 NW. U. L. REV. COLLOQUY 1, 2 (2007), http://www.law.northwestern.edu/lawreview/colloquy/2007/17/index.html.

26 *Massachusetts*, 127 S. Ct. at 1454.

27 *Id.* at 1454–55.

28 *See, e.g.*, Jonathan H. Adler, Massachusetts v. EPA *Heats Up Climate Policy No Less than Administrative Law: A Comment on Professors Watts and Wildermuth*, 102 NW. U. L. REV. COLLOQUY 32 (2007), http://www.law.northwestern.edu/lawreview/colloquy/2007/20/index.html (broadly discussing the implications of standing).

discretion to adopt—or not adopt—regulations. The Court stated:

> As we have repeated time and again, an agency has broad discretion to choose how best to marshal its limited resources and personnel to carry out its delegated responsibilities. That discretion is at its height when the agency decides not to bring an enforcement action . . . .
>
> There are key differences between a denial of a petition for rulemaking and an agency's decision not to initiate an enforcement action. In contrast to nonenforcement decisions, agency refusals to initiate rulemaking are less frequent, more apt to involve legal as opposed to factual analysis, and subject to special formalities, including a public explanation. They moreover arise out of denials of petitions for rulemaking which (at least in the circumstances here) the affected party had an undoubted procedural right to file in the first instance. Refusals to promulgate rules are thus susceptible to judicial review, though such review is extremely limited and highly deferential.[29]

The Supreme Court's holding regarding standing based on "special solicitude" is especially interesting in the context of its potential to provide a judicial basis to compel agency regulation where a court concludes that an agency possesses a legislative mandate to act, but is otherwise refusing to act. In essence, although one could reasonably have expected the Court to accord some deference to EPA's position relative to greenhouse gas regulations,[30] the Court nevertheless was willing to effectively look beyond the possible political motivation for that decision and override EPA's administrative decision.[31]

On the other hand, the implications of the Supreme Court's recognition of CO_2 and other greenhouse gases as air pollutants are even more significant. Delivering the opinion of the Court in recognizing the science of the IPCC and other climate change scientists, Justice Stevens observed:

> [A] well-documented rise in global temperatures has coincided with a significant increase in the concentration of carbon dioxide in the atmosphere. Respected scientists believe the two trends are related. For when carbon dioxide is released into the atmosphere, it acts like the ceiling of a greenhouse, trapping solar energy and retarding the escape of reflected

29 *Massachusetts*, 127 S. Ct. at 1459 (internal quotations and citations omitted).

30 *See, e.g.*, *id.* at 1474–75 (Scalia, J. dissenting).

31 *See id.* at 1462–63.

> heat. It is therefore a species—the most important species—of a "greenhouse gas."[32]

Basing its decision on the "sweeping definition" of "air pollutant" in the CAA,[33] the Supreme Court concluded:

> On its face, the definition embraces all airborne compounds of whatever stripe, and underscores that intent through the repeated use of the word "any." Carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons are without a doubt physical [and] chemical . . . substance[s] which [are] emitted into . . . the ambient air. The statute is unambiguous.[34]

Ultimately, the Supreme Court found that the EPA had "offered no reasoned explanation for its refusal to decide whether greenhouse gases cause or contribute to climate change," and, therefore, its refusal to regulate was "arbitrary, capricious, . . . or otherwise not in accordance with law."[35] Although the Court did not expressly obligate the EPA to determine through rulemaking that CO_2 and other greenhouse gases are air pollutants,[36] as a practical matter, the Court did just that. In view of EPA's positions to date in the context of greenhouse gases, coupled with its argument before the Supreme Court to the effect that the EPA recognized the effects of greenhouse gases but was unable to regulate them, the Supreme Court essentially "boxed" the EPA into the ultimate determination that CO_2 and greenhouse gases are air pollutants within the meaning of the CAA and, therefore, must be regulated, at least as to vehicular emissions.[37]

Beyond the legal implications of *Massachusetts*, the Supreme Court's decision also can be understood in terms of an emerging judicial view of the implications of what some authors have referred to as "expertise-forcing," "politicized expertise," and

---

32 *Id.* at 1446.

33 42 U.S.C. § 7602(g) (2006).

34 *Massachusetts*, 127 S. Ct. at 1460 (internal quotation omitted).

35 *Id.* at 1463.

36 *Id.* The majority opinion concludes with the statement:

> We need not and do not reach the question whether on remand EPA must make an endangerment finding, or whether policy concerns can inform EPA's actions in the event that it makes such a finding. We hold only that EPA must ground its reasons for action or inaction in the statute.

Id. (internal citation omitted).

37 *See id.* at 1459–60.

"the anti-circumvention principle."[38] "Expertise-forcing" has been defined as "the attempt by courts to ensure that agencies exercise expert judgment free from outside political pressures, even or especially political pressures emanating from the White House or political appointees in the agencies."[39] "Politicized expertise" is the perceived problem of political interference with agency expertise.[40] The "anti-circumvention principle" assumes that the courts should interpret statutes and regulations in a manner which prevents the circumvention of the provisions of the statutes.[41] *Massachusetts* reflects an implicit suspicion of politics, at least as to climate change, to the extent that the Court essentially forced expertise in order to prevent the circumvention of the regulatory rulemaking that the Court concluded was required by the CAA.[42] Ultimately, the judiciary may be more inclined in the future to substitute its judgment for perceived agency inaction in the face of an arguable statutory mandate. The implication of that prospect in light of the separation of powers doctrine is significant, but beyond discussion here.

Another interesting concept that helps explain *Massachusetts* is the "scientizing of politics," an interference with agency expertise.[43] Professor Hari Osofsky describes the issue in terms of "scale, science, and law."[44] Viewed through this lens, the Supreme Court's skepticism regarding the reluctance of the EPA to regulate greenhouse gases perhaps is based on the Bush administration's use of science defensively, e.g., "high burden of proof, value choices in the face of ambiguity, resolution of

38 *See, e.g.*, Jody Freeman & Adrian Vermeule, Massachusetts v. EPA*: From Politics to Expertise*, 2007 SUP. CT. REV. (forthcoming), *available at* http://www.law.harvard.edu/faculty/freeman/vermeule.freeman.paper.pdf (discussing the political "expertise-forcing" issues attendant in administrative decision-making).

39 *Id.* (manuscript at 1–2).

40 *See id.* (manuscript at 3).

41 *Id.* (manuscript at 25).

42 *Id.* (manuscript at 29–31).

43 Hari M. Osofsky, *The Intersection of Scale, Science, and Law in* Massachusetts v. EPA, 9 OR. REV. INT'L L. (forthcoming 2008) (manuscript at 4, on file with authors).

44 *Id.* (manuscript at 7).

scientific certainty issues at the agency level, and limits to information gathering."[45]

The Supreme Court in *Massachusetts* gave great weight to IPCC's climate change science.[46] To the extent that courts may be more inclined to embark on independent judicial inquiry, the emerging role of the judiciary independently evaluating the "weight" of scientific and other expert evidence was, perhaps, foreshadowed by *Daubert v. Merrell Dow Pharmaceuticals, Inc.*[47] Prior to *Daubert*, courts relied on two standards for determining the admissibility of expert testimony: (1) relevance, i.e., whether the evidence addresses a fact at issue in the case and would be helpful to the trier of fact; and (2) whether the methods used by the expert in forming scientific conclusions are generally accepted within the expert community.[48] *Daubert* established a new standard for the admissibility of expert evidence, which effectively makes judges the gatekeepers of expert evidence by requiring the court to examine the scientific method underlying the expert evidence and admitting only that evidence which is both relevant and reliable.[49] The ultimate effect is a form of judicial autonomy for determining relevant and reliable expert evidence.[50]

The Supreme Court's apparent willingness to substitute judicial judgment and force expertise is not merely limited to expert science. For example, in *PGA Tour, Inc. v. Martin*, the Supreme Court substituted its judgment for a rule of golf adopted by the Professional Golf Association (PGA) in a case involving the Americans with Disabilities Act of 1990 (ADA).[51] The case addressed the right of access to professional golf tournaments by a qualified professional golfer with a disability, and more importantly, whether that disabled golfer could be denied the use of a golf cart because it would "fundamentally alter the nature" of the tournaments to allow the golfer to ride

45 *Id.* (manuscript at 4).

46 Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438, 1448–49 (2007).

47 Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993).

48 *Id.* at 588–89.

49 *Id.* at 589.

50 *Id.*

51 PGA Tour, Inc. v. Martin, 532 U.S. 661, 690 (2001).

when all other contestants must walk.[52] The Supreme Court disregarded the PGA's justification for the so-called "walking rule," and imposed its own more tolerant and progressive judgment on the rules of the game as established by the PGA.[53] In the words of the Court, "[T]he walking rule is at best peripheral to the nature of petitioner's athletic events, and thus it might be waived in individual cases without working a fundamental alteration."[54] The extent of the Court's reach in terms of substituting its judgment for that of the PGA was criticized by Justice Scalia in dissent:

> If one assumes, however, that the PGA TOUR has some legal obligation to play classic, Platonic golf—and if one assumes the correctness of all the other wrong turns the Court has made to get to this point—then we Justices must confront what is indeed an awesome responsibility. It has been rendered the solemn duty of the Supreme Court of the United States, laid upon it by Congress in pursuance of the Federal Government's power "[t]o regulate Commerce with foreign Nations, and among the several States," to decide What Is Golf.[55]

In the context of climate change, ultimately, the Supreme Court used EPA's reluctance, or refusal, to substitute its own judgment to direct the regulation of greenhouse gases in the context of what the Court perceived as a clear legislative mandate.[56] The Court effectively compelled regulatory action regarding something as ubiquitous as CO_2 as an "air pollutant" to be controlled in the context of the broader environmental problem of climate change. In a sense, the Court's decision forces EPA to address climate change more seriously and gives significant credence and momentum to state and regional efforts to address climate change in the existing vacuum resulting from federal inaction.

52 *Id.*

53 *Id.*

54 *Id.* at 689.

55 *Id.* at 700 (Scalia, J., dissenting) (internal quotation and citation omitted).

56 *See* Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438, 1460–61 (2007).

II
IMMEDIATE IMPLICATIONS ON THE FEDERAL LEVEL

A number of bills have been introduced in the 110th Congress to address climate change.[57] The various pending climate change bills, as well as those likely to be introduced in the near future, can generally be divided into two broad categories: command/control and market-based incentives.[58] A command and control policy exists when the government tells a source to unconditionally reduce its emissions, or mandates the use of a technology or process.[59] On the other hand, market-based incentives, such as cap-and-trade and carbon taxes are a more flexible approach because they allow a source to change its emissions level when it is cost effective to do so.[60] Under this approach, a government can use the market to encourage the retirement of carbon-heavy sources by making the price of carbon use more expensive rather than demanding the

57 *See, e.g.*, Climate Stewardship and Innovation Act of 2007, S. 280, 110th Cong. (2007) (introduced by Senators Lieberman and McCain; proposing mandatory CO_2 caps on government and private facilities that emit 10,000 tons or more of CO_2 per year); Low Carbon Economy Act of 2007, S. 1766, 110th Cong. (2007) (introduced by Senators Bingaman and Specter; proposing mandatory CO_2 caps on oil and gas companies); Electric Utility Cap and Trade Act of 2007, S. 317, 110th Cong. (2007) (introduced by Senators Feinstein and Carper; proposing mandatory CO_2 caps on all electricity-generating entities of 25 megawatts or greater); Climate Stewardship Act of 2007, H.R. 620, 110th Cong. (2007) (introduced by Representatives Olver and Gilchrest; proposing mandatory greenhouse gas caps on all facilities (government and private) that emit 10,000 tons of CO_2 per year, including petroleum refineries and importers); Safe Climate Act of 2007, H.R. 1590, 110th Cong. (2007) (introduced by Representatives Waxman and Allen; proposing mandatory greenhouse gas caps on those sectors of the economy with the largest emissions and best opportunities to reduce emissions); Global Warming Reduction Act of 2007, S. 485, 110th Cong. (2007) (introduced by Senators Kerry and Snowe; proposing mandatory greenhouse gas caps on sources or sectors with the greatest greenhouse gas emissions as determined by the EPA); Global Warming Pollution Reduction Act, S. 309, 110th Cong. (2007) (introduced by Senators Sanders and Boxer; proposing greenhouse gas caps on regulated entities to be determined by the EPA); *see also* Environmental Defense Fund, Climate Change Bills of the 110th Congress, http://www.edf.org/page.cfm?tagID=1075 (last visited Mar. 30, 2008).

58 *See* Jonathan Baert Wiener, *Global Environmental Regulation: Instrument Choice in Legal Context*, 108 YALE L.J. 677, 705, 710 (1999).

59 *Id.* at 706.

60 *Id.* at 709.

curtailment of greenhouse gases. Some of the bills are hybrids and include elements of both categories.[61]

Traditional regulatory measures have included aspects of both command/control and market-based incentives.[62] While there are many examples of existing federal laws that address climate change, proponents of economy-wide climate change policies generally argue that carbon taxes, cap-and-trade, or some combination of the two are needed to effectively reduce the risks associated with climate change.[63]

There are numerous climate change bills that have been proposed in the 110th Congress, many of which would create a comprehensive, economy-wide scheme for regulating greenhouse gases.[64] At this point, a prediction of where Congress will end up regulating climate change in the future is beyond the scope of this Article. However, it is at least apparent that *Massachusetts* is a call for a greater legislative concern about the problem of climate change. Whether that concern will ultimately translate into effective federal programs is yet to be seen. To be sure, Congress has in the past acted quickly to exercise its legislative powers, particularly in times of national

61 *See, e.g.*, America's Climate Security Act of 2007, S. 2191, 110th Cong. (2007) (proposing to establish an emissions cap-and-trade system and to impose efficiency standards for residential buildings); *see also* Environmental Defense Fund, *supra* note 57.

62 For example, an existing command/control policy is the Corporate Average Fuel Economy standards. Wiener, *supra* note 58, at 706. Additionally, market-based incentives are provided for in the Energy Policy Act of 2005, which creates numerous individual and business tax credits for investing in hybrid-electric vehicles and energy efficient appliances. *See* U.S. Dep't of Energy, The Energy Policy Act of 2005: What the Energy Bill Means to You, http://www.energy.gov/taxbreaks.htm (last visited Mar. 31, 2008).

63 For an example of the extensive scholarly debate over the pros and cons of carbon taxes versus cap-and-trade programs, see Warwick J. McKibbin & Peter J. Wilcoxen, *The Role of Economics in Climate Change Policy*, 16 J. ECON. PERSP., 107, 107–29 (2002). The merits to either side of the debate is beyond the scope of this Article.

64 *See, e.g.*, Climate Stewardship and Innovation Act of 2007, S. 280, 110th Cong. (2007) (introduced by Senators Lieberman and McCain; proposing mandatory CO_2 caps on government and private facilities that emit 10,000 tons or more of CO_2 per year); Low Carbon Economy Act of 2007, S. 1766, 110th Cong. (2006) (introduced by Senators Bingaman and Specter; proposing mandatory CO_2 caps on oil and gas companies).

emergency.[65] Whether Congress can respond expeditiously and effectively enough to address the climate change problem on a truly national level is another question altogether.

Massachusetts has had impacts beyond the level of Congressional legislation. Indeed, shortly after the Supreme Court's decision in April 2007, President Bush signed an Executive Order directing the EPA to develop regulations to respond to the Supreme Court's decision, to use EPA's existing authority under the CAA to implement a so-called "twenty-in-ten" proposal as a framework for the regulations, and to work together with other agencies to develop the regulations.[66] Consequently, section 202 of the CAA will likely obligate the EPA to make the requisite "endangerment finding" and set new-vehicle emission standards. The focus of the endangerment finding will be air pollutants that the EPA Administrator concludes cause or contribute to air pollution, specifically CO_2 and other greenhouse gases.[67] The President's Executive Order directing the EPA to develop regulations in response to the Supreme Court's decision makes the ultimate result of regulating at least vehicular emissions a foregone conclusion. As recognized by the Supreme Court in *Massachusetts*:

> If EPA makes a finding of endangerment, the Clean Air Act requires the agency to regulate emissions of the deleterious pollutant from new motor vehicles. EPA no doubt has significant latitude as to the manner, timing, content, and coordination of its regulations with those of other agencies. But once EPA has responded to a petition for rulemaking, its reasons for action or inaction must conform to the authorizing statute. Under the clear terms of the Clean Air Act, EPA can avoid taking further action only if it determines that greenhouse gases do not contribute to climate change or if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do. To the extent that this constrains agency discretion to pursue

65 Consider, for example, the rapid response by Congress in enacting the Patriot Act after the terrorist attacks on September 11, 2001. The Patriot Act was signed into law on October 26, 2001. Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA Patriot Act) Act of 2001, Pub. L. No. 107-56, 115 Stat. 272 (2001).

66 Exec. Order No. 13,432, 72 Fed. Reg. 27,717 (May 14, 2007), *available at* http://www.whitehouse.gov/news/releases/2007/05/20070514-1.html.

67 *See* 42 U.S.C. § 7521(a)(1) (2006).

> other priorities of the Administrator or the President, this is the congressional design.[68]

The EPA has made its intentions clear after *Massachusetts*. The Agency is pursuing a greenhouse gas rule that will focus on making the requisite endangerment findings that greenhouse gases contribute to air pollution, which may reasonably be anticipated to endanger public health and welfare. The endangerment finding will necessitate vehicle regulations for greenhouse gas emissions from cars and trucks.[69] The finding will also require fuel regulations designed to set controls on fuels to reduce emissions of air pollutants that endanger public health and welfare.[70]

Assuming the EPA makes the required endangerment finding under section 202 of the CAA, it may be simply a matter of time before the Agency is compelled to adopt additional greenhouse gas regulations under other CAA provisions for sources other than vehicles. For example, section 111 of the CAA requires the EPA to set emission performance standards for any stationary source that "causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare."[71] To the extent the greenhouse gases meet the similar endangerment requirement of section 202 of the CAA for vehicular sources, it is predictable that they will also meet the endangerment requirement of section 111. Section 111 regulates stationary sources, which the Act defines as "any building, structure, facility, or installation which emits or may emit any air pollutant."[72] Consequently, the regulatory actions of the EPA with regard to vehicular sources can reasonably be anticipated to ultimately extend to non-vehicular or stationary sources.

---

68 Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438, 1462 (2007) (internal citations omitted).

69 The promulgation of a new regulation by the EPA dealing with greenhouse gas emissions from two specific mobile sources is still in the "workshop" stage as of the writing of this Article. However, based on EPA's presentations to date, the regulation is all but inevitable. *See* Stephen L. Johnson, Adm'r, U.S. Envtl. Prot. Agency, Testimony Before the Select Committee on Energy Independence and Global Warming, U.S. House of Representatives (Mar. 13, 2008), *available at* http://www.epa.gov/ocirpage/hearings/testimony/110_2007_2008/2008_0313_slj.pdf.

70 *Id.*

71 42 U.S.C. § 7411(b)(1)(A).

72 *Id.* § 7411(a)(3).

By logical extension, section 108 of the CAA may also come into play. Section 108 provides that the EPA Administrator shall publish a list of emissions that "cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare."[73] Once a pollutant is listed under CAA section 108, the EPA is then required to develop a criteria document consistent with section 109 of the CAA and establish National Ambient Air Quality Standards (NAAQS) for the particular pollutant.[74] Upon establishment of the standard for the pollutant under the NAAQS, CAA section 110 then requires the individual states to submit State Implementation Plans (SIPs) to provide for the implementation, maintenance, and enforcement of the ambient air quality standard.[75]

Under the CAA, the states and their subdivisions already have considerable authority to regulate in the field of climate change on their own. CAA section 102 encourages cooperative activities by state and local governments for the prevention and control of air pollution.[76] CAA section 116 provides that nothing in the Act shall preclude or deny the rights of states or their political subdivisions to adopt standards, limitations, or requirements regarding control or abatement of air pollution as long as they are not "less stringent" than federal requirements.[77] CAA section 131 provides that nothing in the Act shall infringe on the authority of counties and cities to plan or control land use.[78] Interestingly, CAA section 115 even requires the EPA Administrator to notify the governors of the states and follow other prescribed actions whenever the Administrator has received "reports, surveys or studies" from any duly constituted international agency that indicate that air pollution from the United States is endangering the public health or welfare of a foreign country.[79] In view of the IPCC Report previously discussed, the EPA may already be obligated to proceed more

73 *Id.* § 7408(a)(1)(A).

74 *Id.* § 7409(a)(1)(A).

75 *Id.* § 7410.

76 *Id.* § 7402(a).

77 *Id.* § 7416.

78 *Id.* § 7431. The potential land use implications of climate change are touched on later in this Article.

79 *Id.* § 7415(a).

expeditiously than merely addressing greenhouse gases in the context of CAA section 102.

In theory at least, and by operation of the provisions of the CAA, the states and their subdivisions will ultimately be required to regulate air pollutants reasonably anticipated to endanger public health or welfare, specifically including stationary sources within the jurisdiction of the states and local governments. In reality, many of the states and regions have already moved forward toward their own climate change initiatives.[80] Realistically, it will take years for the EPA to effectively regulate greenhouse gases resulting from vehicular and stationary sources. The timeframes involved in that federal regulatory endeavor do not even include the time necessary to resolve the inevitable litigation that will arise as a result of the regulatory efforts. It has been more than a decade since the Kyoto Protocol was adopted in 1997. Meanwhile, in the shadow of the vacuum resulting from the federal government's inaction in regulating greenhouse gas emissions to date, state and local governments will continue in their initiatives to adopt climate change programs on their own.

III
EXISTING REGIONAL AND STATE CLIMATE PROTECTION EFFORTS EVOLVING FROM THE VACUUM

In the absence of a comprehensive federal program to address climate change in the years since the Kyoto Protocol and leading up to *Massachusetts*, many states and regions have pursued global warming initiatives on their own. Some states have set targets for reducing their greenhouse gas emissions, adopted programs to promote renewable energy and energy efficiency, and developed statewide action plans. On the regional level, states have organized in collaborative efforts to establish emission-trading programs and promote clean energy development.

Among noteworthy climate change programs, the Northeast Regional Greenhouse Gas Initiative (RGGI) was established in 2005 by seven northeastern and mid-Atlantic states who agreed to a cap-and-trade system aimed at reducing carbon dioxide

80 *See, e.g.*, RGGI, *supra* note 18.

emissions from power plants in the region.[81] Meanwhile, the Western Governors' Association, which consists of the governors of nineteen states and three U.S.-flag Pacific Islands, developed the Clean and Diversified Energy Initiative to promote a set of strategies to increase energy efficiency, expand the use of renewable energy sources in the region, and incentivize carbon capture and sequestration.[82] In 2006, the governors of Arizona and New Mexico executed an agreement to create the Southwest Climate Change Initiative, through which the two states agreed to collaborate to reduce greenhouse gas emissions and address the impacts of climate change in the southwest.[83] In 2004, the governors of Washington, Oregon, and California approved a series of detailed recommendations to reduce global warming pollution through the West Coast Governors' Global Warming Initiative.[84] Among other things, the initiative included the adoption of comprehensive state and regional goals for reducing emissions and expanding markets for renewable energy, energy efficiency, and alternative fuels.[85]

Earlier efforts toward regional collaboration also include the New England Governors' and Eastern Canadian Premiers (NEG-ECP) Climate Action Plan, which includes short- and long-term goals for reducing greenhouse gas emissions in the region.[86] Similarly, the Powering the Plains initiative includes participants from the Dakotas, Minnesota, Iowa, Wisconsin, and the Canadian province of Manitoba and aims to develop strategies, policies, and demonstration projects for alternative

81 RGGI, About RGGI, http://www.rggi.org/about.htm (last visited Apr. 16, 2008). The state parties to the RGGI are Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York, and Vermont. RGGI, Participating States, http://www.rggi.org/states.htm (last visited Apr. 16, 2008).

82 Western Governors' Association: Clean and Diversified Energy Initiative—CDEi, http://www.westgov.org/wga/initiatives/cdeac/index.htm (last visited Mar. 19, 2008).

83 U.S. Envtl. Prot. Agency, Climate Change—State and Local Governments, State and Regional Climate Actions Table, http://www.epa.gov/climatechange/wycd/stateandlocalgov/state_actionslist.html (last visited Mar. 30, 2008).

84 West Coast Governors' Global Warming Initiative, http://www.ef.org/westcoastclimate/ (last visited Mar. 19, 2008).

85 *Id.*

86 *See* NEW ENGLAND GOVERNORS/EASTERN CANADIAN PREMIERS, CLIMATE CHANGE ACTION PLAN 2001, *available at* http://www.negc.org/documents/NEG-ECP%20CCAP.PDF.

energy sources.[87] Most recently, the states of Illinois, Iowa, Kansas, Michigan, Minnesota, Wisconsin, and the Canadian province of Manitoba established the Midwestern Regional Greenhouse Gas Reduction Accord, which will establish regional greenhouse gas reduction targets and develop a multi-sector cap-and-trade system to help meet the targets.[88]

Beyond the regional efforts addressing climate change in the federal vacuum, many states are pursuing aggressive climate change programs. Notably, the State of California is at the forefront of state efforts. Although there are other states that have aggressively pursued greenhouse gas initiatives, the authors will focus on California's unique initiatives to illustrate the laboratory from which the federal government should both foster and draw from in the implementation of national, economy-wide climate change policies.

IV
CALIFORNIA: A LABORATORY FOR EFFECTIVE AIR POLLUTION REGULATION

California has long been a model for effective and aggressive air pollution regulation. Even before the adoption of vehicle emission controls at the federal level, California had already made pioneering efforts to control mobile sources of air pollution to resolve California's particularly severe air pollution problems.[89] As a result, Congress adopted section 209(b) of the CAA, which recognized California's pre-existing emission controls and authorized a potential exemption for additional emission controls that could be stricter than federal standards.[90] Section 209(b)(1) provides in part as follows:

87 Great Plains Institute, Powering the Plains, http://www.gpisd.net/resource.html?Id=61 (last visited Mar. 19, 2008).

88 *See* MIDWESTERN GOVERNORS ASS'N, MIDWESTERN GREENHOUSE GAS ACCORD 2007 (2007), *available at* http://www.midwesterngovernors.org/resolutions/GHGAccord.pdf.

89 *See* U.S. Envtl. Prot. Agency, Air Pollution Control Orientation Course, Origins of Modern Air Pollution Regulations, http://www.epa.gov/apti/course422/apc1.html (last visited Mar. 30, 2008) ("In the 1940s, air pollution received greater attention in the United States when smog was noticed in Los Angeles . . . . California passed the first state air pollution law in 1947, and the first National Air Pollution Symposium in the United States was held in 1949.").

90 42 U.S.C. § 7543(b) (2006).

> The Administrator shall, after notice and opportunity for public hearing, waive application of this section to any State which has adopted standards . . . for the control of emissions from new motor vehicles or new motor vehicle engines prior to March 30, 1966, if the State determines that the State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards.[91]

Because California was the only state to have adopted vehicle emission standards prior to March 30, 1966, section 209(b)(1) effectively applies only to California. In other words, there can never be more than two sets of vehicle emission standards: EPA's or California's. However, once the EPA grants a waiver to California, other states are permitted to adopt California's regulations as part of their own air pollution control programs or Statewide Transportation Improvement Programs (STIPS).[92]

California's regulatory process for air pollution is established by state statute,[93] with the regulatory process essentially consisting of a two-tier administrative approach. At the first tier, the state Air Resources Board (ARB) is designated as California's statewide air pollution regulatory agency.[94] The ARB has several major areas of responsibility for California's air pollution control activities, specifically including the authority for the control of vehicular sources of air pollution.[95] The ARB is also designated as the air pollution control agency for all purposes set forth in federal law, and is the state agency responsible for preparation of the state implementation plan required by the CAA.[96] In addition, the ARB is empowered to promulgate rules and regulations,[97] is directed to divide the state into air basins, and adopt ambient air quality standards.[98]

At the second tier and in addition to the ARB, California's statutory framework also created local and regional authorities to implement the state's air pollution control program. The local and regional authorities (county, unified, and regional air

91 *Id.*

92 *Id.* § 7507.

93 CAL. HEALTH & SAFETY CODE §§ 39000–44474 (2006).

94 *Id.* § 39510.

95 *Id.* §§ 39002, 40000.

96 *Id.* § 39602.

97 *Id.* §§ 39600, 39601(a).

98 *Id.* § 39606.

pollution control districts) implement the primary responsibility for control of air pollution from all sources other than vehicular and consumer products, i.e., stationary sources.[99] The various air districts are authorized to adopt and enforce rules and regulations to achieve and maintain the state and federal ambient air quality standards.[100] Districts also have the general authority to perform acts necessary or proper to execute their powers and duties, including the power to sue or be sued.[101] Significantly, California air districts also have the power to "establish additional, stricter standards than those set forth by law or by the state board for nonvehicular sources."[102] A thorough analysis of the complex air pollution control system established by the California Clean Air Act is beyond the scope of this Article.[103] However, California's extensive air regulatory program underscores why and how state and regional initiatives to address climate change have begun to flourish in the federal vacuum.

California's proactive and aggressive commitment to environmental issues, as evidenced by its air pollution regulatory program, is reflected in its leadership in recent years, particularly in the context of climate change initiatives. For example, California Governor Arnold Schwarzenegger issued Executive Order S-3-05 on June 1, 2005, which established greenhouse gas emission reduction targets for California; ordered the Secretary of the California Environmental Protection Agency to coordinate oversight of the efforts needed to meet the targets with the Secretary of the Business, Transportation and Housing Agency, Secretary of the Department of Food and Agriculture, Secretary of the Resources Agency, Chairperson of the Air Resources Board, Chairperson of the Energy Commission, and the President of the Public Utilities Commission.[104] In addition, the Executive Order requires the Secretary of the California

99 *Id.* §§ 39002, 40000.

100 *Id.* § 40001.

101 *Id.* §§ 40701, 40702.

102 *Id.* § 41508.

103 For an overview and analysis of California's air regulatory program, see *Federal Requirements and the Goals and Structure of California's Air Regulatory Program*, *in* DAVID NAWI ET AL., CALIFORNIA ENVIRONMENTAL LAW & LAND USE PRACTICE § 40 (2008).

104 Cal. Exec. Order No. S-3-05 (June 1, 2005).

Environmental Protection Agency to report to the Governor and the State Legislature biannually on progress made toward meeting the greenhouse gas-reduction targets and on the impacts to California from climate change, including mitigation and adaptation strategies to combat those impacts.[105]

Governor Schwarzenegger's leadership in the area of climate change extends beyond policy direction into the realm of aggressive environmental litigation. Within days of the Supreme Court's decision in *Massachusetts*, the Governor sent a notice of intent to the Administrator of the EPA notifying it of California's intent to sue if the federal government fails to act on California's request for a waiver to regulate greenhouse gas emissions in light of the Supreme Court's determination in *Massachusetts*.[106] The purpose of the waiver request was to enable California to implement Assembly Bill 1493, which directed the California ARB to "develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles."[107] True to his word, on November 8, 2007, the Governor and California Attorney General Edmund G. Brown, Jr. filed an action against the EPA in the United States District Court, District of Columbia Circuit, seeking to compel action to approve California's waiver request.[108] In December 2007, the EPA Administrator issued a decision denying the waiver request.[109]

105 *Id.*

106 Press Release, Office of the Governor, Governor Schwarzenegger Warns U.S. EPA of California's Intent to Sue if Federal Government Fails to Act on Waiver to Reduce Emissions (Apr. 25, 2007), *available at* http://gov.ca.gov/index.php?/press-release/6031/.

107 Assem. B. 1493, 2002 Leg., Reg. Sess. § 3(a) (Cal. 2002) (codified at CAL. HEALTH & SAFETY CODE §§ 42823, 43018.5 (2006)).

108 California v. U.S. Envtl. Prot. Agency, No. 08-70011 (9th Cir. filed Jan. 3, 2008). In a letter to EPA Administrator Stephen Johnson, House Speaker Nancy Pelosi wrote, "The actions of the EPA in denying the California request cannot help but raise serious questions about the support of the Bush administration for state efforts to safeguard the environment and the health of their residents." Ken Thomas, *Pelosi: Congress to Scrutinize EPA Rejection of California Clean Air Standards*, N. COUNTY TIMES, Dec. 21, 2007, http://www.nctimes.com/articles/2007/12/22/news/state/10_22_1812_21_07.txt.

109 California State Motor Vehicle Pollution Control Standards; Notice of Decision Denying a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles, 73 Fed. Reg. 12,156 (Mar. 6, 2008).

Consequently, the litigation over California's waiver request to implement Assembly Bill 1493 is pending in the federal courts and has been joined by other states.

The California Legislature has also been remarkably proactive in the federal vacuum of comprehensive national climate change programs.[110] The most significant and far-reaching California legislation to date addressing climate change is Assembly Bill 32, enacted in 2006 as the "California Global Warming Solutions Act of 2006."[111] The Act establishes a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, and cost-effective reductions of greenhouse gases. The legislation designates the California Air Resources Board as the agency responsible for monitoring and reducing greenhouse gas emissions and authorizes the governor to invoke a "safety valve" for up to twelve months at a time in the event of extraordinary circumstances, catastrophic events, or the threat of significant economic harm.[112]

The California Global Warming Solutions Act of 2006 (AB 32) mandates a comprehensive program that requires the ARB to implement the following:

(1) establish a statewide greenhouse gas emissions cap for 2020, based on 1990 emissions by January 1, 2008;[113]
(2) adopt mandatory reporting rules for significant sources of greenhouse gases by January 1, 2008;[114]
(3) adopt a plan by January 1, 2009, which indicates how emission reductions will be achieved from significant greenhouse gas sources through regulations, market mechanisms, and other actions;[115]

110 *See, e.g.*, Assem. B. 1493, 2002 Leg., Reg. Sess. (Cal. 2002) (requiring reductions in vehicular emissions of greenhouse gases from cars and light-duty trucks sold in California); S.B. 812, 2002 Leg., Reg. Sess. (Cal. 2002) (making amendments to the California Climate Action Registry, including the requirement that the Registry adopt procedures and protocols for the reporting and certification of greenhouse gas emission reductions); S.B. 527, 2001 Leg., Reg. Sess. (Cal. 2001) (providing for, among other things, revisions of the functions and duties of the California Climate Action Registry); S.B. 1771, 2000 Leg., Reg. Sess. (Cal. 2000) (requiring, among other things, the establishment of a California Climate Action Registry to record and register voluntary greenhouse gas emission reductions made by California entities after 1990).

111 CAL. HEALTH & SAFETY CODE §§ 38500–38599 (2006).

112 *Id.* § 38599.

113 *Id.* § 38550.

114 *Id.* § 38530.

(4) adopt regulations by January 1, 2011, to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gases, including provisions for using both market mechanisms and alternative compliance mechanisms;[116]
(5) convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Committee to advise ARB;[117]
(6) ensure public notice and opportunity for comment on all ARB actions;[118]
(7) prior to imposing mandates or authorizing market mechanisms, requires ARB to evaluate several factors, including but not limited to: impacts on California's economy, the environment, and public health; equity between regulated entities; electricity reliability, conformance with other environmental laws, and "environmental justice" determinations to assure that the rules do not disproportionally impact low-income communities;[119] and
(8) adopt a list of discrete, early action measures by July 1, 2007, that can be implemented and adopted before January 1, 2010.[120]

Since the enactment of AB 32, the California ARB has moved aggressively to implement the Act, arguably the most ambitious climate protection program in the nation. On October 17, 2007, ARB adopted its Early Actions to Mitigate Climate Change in California.[121] The early action plan identified nine discrete measures where enforceable regulations could be adopted and implemented by 2010 to reduce approximately 16 million tons of greenhouse gas emissions by 2020, involving various areas, including transportation, waste, agriculture, commercial, education, electricity, energy efficiency, fire suppression, forestry, oil and gas capture, reducing chlorofluorocarbons from

115 *Id.* § 38561.

116 *Id.* § 38562.

117 *Id.* § 38591.

118 *Id.* § 38550.

119 *Id.* § 38591.

120 *Id.* § 38560.

121 AIR RES. BD., CAL. ENVTL. PROT. AGENCY, PROPOSED EARLY ACTIONS TO MITIGATE CLIMATE CHANGE IN CALIFORNIA (2007), *available at* http://www.climatechange.ca.gov/climate_action_team/reports/2007-04-20_ARB_early_action_report.pdf.

refrigeration systems, and tire inflation standards, among others.[122]

On December 7, 2007, the ARB adopted its Mandatory Reporting regulation specifying the requirements and protocols for affected sources to track and report their greenhouse gas emissions each year.[123] At the same hearing, the ARB approved the 1990 baseline emissions inventory that defines the target greenhouse gas emissions level to be reached by 2020.[124] The emission levels were developed through an extensive public process, including technical workshops. In addition, the Scoping Plan that will define the regulatory and market-based GHG reduction measures to be implemented to meet the 2020 emission target is under development and currently in the public input phase.[125] Although a comprehensive discussion of California's initiatives to address climate change and global warming solutions is beyond the scope of this Article, it is nevertheless clear that California is making significant progress toward addressing climate change at a time when the federal government is still reacting to the implications of *Massachusetts*.

Beyond the legislative arena and California's regulatory efforts to address climate change, the climate change issue has emerged in other areas of California law, including land use planning, transportation planning, and environmental law. Most notably, the California Attorney General has relied on provisions of the California Environmental Quality Act (CEQA)[126] to assert that land use planning decisions and development projects subject to CEQA are required to address, quantify, and mitigate greenhouse gas emissions. For example, the Attorney General has begun to routinely comment on various projects subject to CEQA, including the Conoco-Phillips Rodeo Refinery Expansion Project,[127] the Orange County

122 *Id.* at 12–17.

123 AIR RES. BD., CAL. ENVTL. PROT. AGENCY, SUMMARY OF BOARD MEETING DECEMBER 6 & 7, 2007, at 3–5 (2007), *available at* http://www.arb.ca.gov/board/ms/2007/ms120607.pdf.

124 *Id.* at 5–7.

125 *See* AIR RES. BD., *supra* note 121.

126 *See* CAL. PUB. RES. CODE § 21080.4 (2006).

127 Letter from Bill Lockyear, Cal. Att'y Gen., to Glenn Campbell, Principal Transp. Analyst, Orange County Transp. Auth. (Mar. 30, 2006) (on file with authors).

Transportation Authority's 2006 Long-Range Transportation Plan Draft Program,[128] and the Coyote Valley Specific Plan involving a proposed new development community of 80,000 people in an existing rural area near the city of San Jose, California.[129]

Significantly, the California Attorney General recently settled a climate change lawsuit filed against the County of San Bernardino in April 2007 in connection with the County's update to its General Plan.[130] In the case, the Attorney General alleged that San Bernardino County's General Plan update failed to quantify and mitigate greenhouse gas emissions and failed to explain how population growth predicted under the General Plan would impact the State's ability to obtain the greenhouse gas-reduction targets mandated by the California Climate Change Solutions Act (AB 32).[131] Ultimately, the State and San Bernardino County reached a settlement which requires the County to inventory and mitigate greenhouse gas emissions associated with its land use planning decisions.[132]

In other arenas, there are currently pending a number of CEQA lawsuits in California superior courts brought by non-profit groups challenging the adequacy of climate change analysis for private development projects.[133] Such CEQA

128 Letter from Edmund G. Brown, Jr., Cal. Att'y Gen., to Maureen Parkes, Contra Costa County Planning Comm'n, (May 8, 2007) (on file with authors).

129 Letter from Edmund G. Brown, Jr., Cal. Att'y Gen., to Jared Hart et al., City of San Jose (June 19, 2007) (on file with authors). Copies of these letters are available through the Attorney General's office and the local agency recipients pursuant to the California Public Records Act, CAL. GOV'T CODE § 6250–6270 (2006).

130 California's land use laws require municipalities and counties to adopt comprehensive, long-term plans to guide development and growth. These "general plans" are required to address a number of elements, including land use, transportation, housing, and conservation. *See* CAL. GOV'T CODE § 65300 (2006).

131 CAL. HEALTH & SAFETY CODE §§ 38500–38599 (2006); *see also* State v. County of San Bernardino, No. CIVSS-0700329, at 2–3 (Cal. Super. Ct. Aug. 28, 2007) (order regarding settlement), *available at* http://ag.ca.gov/cms_attachments/press/pdfs/2007-08-21_San_Bernardino_settlement_agreement.pdf.

132 *County of San Bernardino*, No. CIVSS-0700329, at 2–3.

133 Ctr. for Biological Diversity v. City of Desert Hot Springs, No. RIC464585 (Cal. Super. Ct. filed Jan. 24, 2007) (challenging an Environmental Impact Report (EIR) for a 2700-unit residential/commercial development); Ctr. for Biological Diversity v. City of Banning, No. RIC460967 (Cal. Super. Ct. filed Nov. 21, 2006) (challenging an EIR for a 1500-unit residential development); Ctr. for Biological

challenges, especially in the context of climate change, are particularly vexing in the absence of clear standards derived from comprehensive climate change regulatory programs. Such programs are necessary to enable decision makers to determine the thresholds for ascertaining significant adverse environmental impacts and potential mitigation measures for those impacts resulting from projects under CEQA.

In January, 2008, the California Air Pollution Control Officers Association (CAPCOA) published a "white paper" addressing greenhouse gas emissions from projects subject to CEQA.[134] Reflecting the collective work of the California air districts, the white paper is intended as a resource guide for local governments who are grappling with the vexing problem of how precisely to evaluate GHG at a time of considerable flux, while establishing the "threshold limits" essential to analyzing the environmental impacts associated with GHG.[135] The paper represents the first comprehensive effort in California in the area of CEQA to provide "an organized review of available tools and models for evaluating GHG emissions, and an overview of strategies for mitigating potentially significant GHG emissions from projects."[136] Although CAPCOA modestly cautions in the cover letter accompanying the release of the

Diversity v. San Bernardino County, No. SCVSS-133424 (Cal. Super. Ct. filed Dec. 15, 2005) (challenging a permit for a commercial compost facility).

134 Governor's Office of Planning & Research Climate Change & CEQA: Presentation to the Climate Action Team (2007), *available at* http://www.climatechange.ca.gov/documents/2007-09-19_OPR_PRESENTATION.PDF.

135 CEQA does not necessarily require that agencies establish thresholds of significance, although such thresholds are logically necessary to determining the significance of particular environmental effects. The CEQA regulatory guidelines provide that:

> Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which normally means the effect will be determined to be less than significant.

CAL. CODE REGS. tit. 14, § 15064.7(a) (2007).

136 Cover Letter from Douglas Quetin, President, Cal. Air Pollution Control Officer's Ass'n, to Interested Parties (Jan. 2, 2008), *available at* http://www.capcoa.org/ceqa/?docID=coverletter.

paper that it is "not a guidance document," the CAPCOA "resource guide" will no doubt be cited and debated in future projects and litigation, at least in California, into the near future.[137]

The issue of greenhouse gases in the context of the environmental review process has even emerged on the federal level in *Center for Biological Diversity v. National Highway Traffic Safety Administration*.[138] In that case, the Ninth Circuit Court of Appeals required the National Highway Traffic Safety Administration (NHTSA) to prepare an environmental impact statement (EIS) under the National Environmental Protection Act (NEPA) to address CO_2 as a greenhouse gas in a rulemaking context.[139]

California's commitment to climate change initiatives, in the absence of comprehensive federal programs, will no doubt continue to proliferate across the board in executive policy, legislation, administrative rulemaking, and local governmental decision making in the context of land use and other areas of environmental law. The extent of that commitment was perhaps best articulated by the California Attorney General's challenge to California counties to combat climate change at the 113th annual meeting of the California State Association of Counties. Addressing the county supervisors and other public officials representing California's fifty-eight counties, Attorney General Brown stated:

> California is committed to cutting greenhouse gas emissions back to 1990 levels. This radical change in our fossil fuel economy demands imagination, massive investment and extraordinary ingenuity. The counties should immediately lead the charge against climate disruption and combat global

137 *Id.*

138 Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 508 F.3d 508 (9th Cir. 2007).

139 *Id.* at 554. Similarly, in *Central Valley Chrysler-Jeep v. Goldstene*, the court held that both EPA and California, through the waiver process of CAA section 209, are equally empowered to promulgate regulations that limit the emission of greenhouse gases, principally carbon dioxide, from motor vehicles. 529 F. Supp. 2d 1151 (E.D. Cal. 2007). The court further held that the promulgation of such regulations does not interfere or conflict with NHTSA's duty to set maximum feasible average mileage standards. *Id.* at 1161.

warming through green buildings, alternative energy and wise land use rules.[140]

V
FEDERAL AND STATE CONFLICTS OVER CLIMATE-CHANGE INITIATIVES

As California and other states continue to develop and implement climate change programs, the inherent tension in our nation's particular form of federalism will necessitate compromise and coordination between the federal and state jurisdictions. At the heart of the issue of federalism is the argument over the perceived political advantages and disadvantages inherent in decentralized environmental decision making, as compared to centralized environmental decision making.

The bases for the arguments for decentralized environmental decision making include the states' right to determine environmental protection measures based upon a balance between environmental protection and economic development; the potential for a greater range of environmental choices based upon local circumstances; the inherent differences between states in their natural and impacted environments and potential efficiencies resulting from the unique circumstances applicable to certain environmental measures; and the view that states are more nimble and can provide technological and regulatory innovation more flexibly than the federal government.[141]

The bases for the arguments regarding centralized environmental decision making include concerns that states may adopt less stringent standards; inconsistent state actions may result in interstate and possibly even foreign policy impacts; centralized environmental decision making may be more efficient in terms of both research and development of regulatory standards and their effect on nationwide or multi-national industries; and, specific to climate change, its global

140 Press Release, Cal. Office of the Att'y Gen., Brown Challenges Counties to Combat Climate Change (Nov. 13, 2007), *available at* http://ag.ca.gov/cms_attachments/press/pdfs/n1495_brownchallengescounties.pdf.

141 Alice Kaswan, *The Domestic Response to Global Climate Change: What Role for Federal, State, and Litigation Initiatives?*, 42 U.S.F. L. REV. 39, 61–65 (2007).

consequences cannot be effectively addressed at the state and local level.[142]

Beyond the policy choices inherent to federalism in the context of climate change initiatives, state and regional-level approaches to regulating greenhouse gases will likely raise broader constitutional concerns. The federal government has yet to comprehensively occupy the field of climate change initiatives, except arguably with regard to vehicular fuels under CAA section 202[143] and yet-to-be developed EPA regulations after *Massachusetts*. Thus, states are free to continue implementing their own regulatory climate change initiatives, including some that may ultimately be inconsistent with the efforts of the federal government and other states, until the federal government effectively occupies that field. As previously mentioned, California's Clean Air Act provides that even local and regional air authorities "may establish additional, stricter standards than those set forth by law or by the state board for nonvehicular sources."[144]

Depending on how the federal government ultimately responds to climate change after *Massachusetts*, future comprehensive regulatory approaches addressing climate change may turn on questions of federal supremacy. The Supremacy Clause under the United States Constitution essentially invalidates state laws that "interfere with, or are contrary to" federal law.[145] Federal law can supersede state law through: (1) express preemption, i.e., where Congress preempts state law in express terms;[146] (2) nullification of a state law to the extent that it actually conflicts with federal law;[147] and (3) implied preemption, i.e., where the federal regulatory scheme "is

142 For a comprehensive analysis of the federalism considerations, see *id.*

143 *See* 42 U.S.C. § 7521 (2006).

144 CAL. HEALTH & SAFETY CODE § 41508 (2006).

145 Gibbons v. Ogden, 22 U.S. 1, 103 (1824); U.S. CONST. art. VI, cl. 2 ("This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.").

146 Jones v. Rath Packing Co., 430 U.S. 519, 525 (1977).

147 Hillsborough County, Fla. v. Automated Med. Labs., Inc., 471 U.S. 707, 713 (1985).

sufficiently comprehensive to make reasonable the inference that Congress 'left no room' for supplementary state regulation."[148] At this juncture, Congress has not expressly preempted state action regarding climate change initiatives, except, perhaps, in the context of limited areas like vehicular fuels. Further, in the absence of comprehensive federal legislation addressing climate change, the states' initiatives, both regulatory and voluntary, are not yet conflicting with federal law. Finally, until the federal government acts definitively and comprehensively, implied preemption will be limited to those areas where Congress has actually left no room for supplementary state regulation.

The Commerce Clause of the United States Constitution is another potential obstacle to state and regional climate change initiatives. The Commerce Clause gives Congress the power "[t]o regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes."[149] In the context of greenhouse gas regulations, the Commerce Clause issue is more appropriately viewed in terms of the so-called Dormant Commerce Clause. The concept is based on the premise that, since the Commerce Clause expressly grants Congress the power to enact legislation that affects interstate commerce, the converse is also true; an implicit restriction prohibiting a state from passing legislation that improperly burdens or discriminates against interstate commerce.[150] Consequently, in the absence of a Congressional exercise of power derived from the Commerce Clause, there exists an implied presumption to the effect that states lack authority to regulate commerce in a manner that either discriminates against interstate commerce or unduly burdens interstate commerce.[151] Discrimination against interstate commerce may occur where a state law treats interstate businesses, buyers, sellers, or persons disadvantageously as compared to in-state interests.[152] It can be anticipated that the Dormant Commerce Clause argument will be raised in the context of climate change, especially with regard

148 *Id.* (quoting Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947)).

149 U.S. CONST. art. I, § 8, cl. 3.

150 City of Phila. v. New Jersey, 437 U.S. 617, 623 (1978).

151 Reeves, Inc. v. Stake, 447 U.S. 429 (1980).

152 *City of Phila.*, 437 U.S. at 621.

to industries active in interstate markets, particularly energy production, oil refining, transportation, and similar industries.[153]

Yet another potential obstacle to state and regional climate change initiatives is the Foreign Affairs Power, which arises from the President's fundamental executive powers and from certain powers granted to Congress, i.e., the power to regulate commerce with foreign nations.[154] Although the U.S. Constitution "expressly grants Congress, not the President, the power to regulate Commerce with foreign Nations," the President has broad authority with regard to foreign policy.[155] Generally, federal foreign policy preempts state action, particularly where there is a conflict between federal and state law policies.[156] It is at least conceivable that state and regional climate change initiatives could trigger foreign policy implications, for example, in the context of the North American Free Trade Agreement (NAFTA).[157] Some might assert that it is at least arguable that the President has pursued some form of foreign policy on climate change, albeit limited essentially to voluntary initiatives. For now, the failure of the United States to join the Kyoto Protocol and the Supreme Court's skepticism of EPA's "foreign policy" arguments in *Massachusetts* suggest that the foreign affairs-power argument currently has minimal

153 In the context of the Dormant Commerce Clause issue raised by climate change initiatives, it is somewhat ironic that Supreme Court Justices Antonin Scalia and Clarence Thomas, both part of the dissent in the Court's opinion, have rejected the notion of a Dormant Commerce Clause in other contexts. *See, e.g.*, United Haulers Ass'n, Inc. v. Oneida-Herkimer Solid Waste Mgmt. Auth., 127 S. Ct. 1786 (2007); Tyler Pipe Indus. v. Wash. State Dep't of Revenue, 483 U.S. 232 (1987).

154 U.S. CONST. art. II, § 2, cl. 2.

155 Barclays Bank PLC v. Franchise Tax Bd., 512 U.S. 298, 329 (1994) (internal quotation omitted).

156 *See, e.g.*, Am. Ins. Ass'n v. Garamendi, 539 U.S. 396 (2003).

157 North American Free Trade Agreement, U.S.-Can.-Mex., Dec. 17, 1992, 107 Stat. 2057. NAFTA is an international treaty between the United States, Canada, and Mexico, to eliminate the majority of tariffs on products traded between those nations, and gradually phase out other tariffs over a ten-year period. *Id.* art. 302. It includes the North American Agreement on Environmental Cooperation (NAAEC), which is intended to be a mechanism for addressing trade and environmental issues. *See* North American Agreement on Environmental Cooperation, U.S.-Mex.-Can, Sept. 14, 1993, 32 I.L.M. 1480; *see also* Office of the United States Trade Representative, North American FTA, http://www.ustr.gov/Trade_Agreements/Regional/NAFTA/Section_Index.html (last visited Mar. 20, 2008).

viability unless the Administration or Congress act more decisively.[158]

Federalism issues aside, the fundamental question policymakers need to resolve is whether it is more appropriate for the states to act now in the area of climate change, or whether the field should be simply left to the federal government to address in its own time. The reality is that the wheels of state action are in motion and, in view of the perceived immediacy of the climate change problem, some action is seemingly preferable to no action. California, in particular, with its far-reaching climate control programs mandated by AB 32 discussed above, is in a unique position to serve as a laboratory for truly meaningful global warming solutions.

The regulatory options being considered by California and other states may be the best vehicles for reconciling the numerous competing interests in designing and implementing climate change initiatives. As shown by California, the states are more nimble and have a high level of expertise regarding the sources under their control. Moreover, the fact that climate change is a global problem does not minimize the relevance of state efforts to address the problem. The states have special economic justifications for pursuing climate change matters, especially to the extent that climate change may impact their citizens directly. For example, a report issued by the California Climate Change Center at the University of California, Berkeley, indicates that although California's environment and economy are vulnerable to climate impacts, pursuing climate change initiatives could actually boost California's annual Gross State Product (GSP) by $60-74 billion and create 17,000 to 89,000 new jobs.[159] The Supreme Court's decision in *Massachusetts* in the context of Massachusetts' standing is especially pertinent to the importance of state initiatives in that regard. The Court recognized that "EPA's steadfast refusal to regulate greenhouse gas emissions presents a risk of harm to Massachusetts that is both actual and imminent."[160]

158 *See* Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438, 1462–63 (2007).

159 DAVID ROLAND-HOLST, ECONOMIC GROWTH AND GREENHOUSE GAS MITIGATION IN CALIFORNIA 3 (2006), *available at* http://calclimate.berkeley.edu/Growth_Strategies_Full_Report.pdf.

160 *Massachusetts*, 127 S. Ct. at 1455 (internal quotations omitted).

Consequently, the states have a right to protect their interests in terms of climate change and its effects on those interests.

In the final analysis, the issue is not simply a choice between federal and state approaches to address climate change, but rather, whether federal and state approaches can be harmonized to complement each other. Most modern federal environmental laws contemplate concurrent federal and state roles. The relationship between the federal and state standards with regard to air pollution under the CAA was discussed above.[161] In view of the importance and immediacy of the climate change problem, and especially in view of the significant state and regional efforts that have occurred to date, it is neither necessary nor wise for federal law to completely preempt and prevent state and regional initiatives addressing climate change. While the global nature of the issue argues for a more uniform approach to its resolution, ultimately, a well-conceived federal and state "federalist" program that incorporates coordination of the programs that work best and preempts those that either do not work or are better handled on a national level, is our most viable approach for effectively and expeditiously addressing climate change in our time.[162]

VI
CONCLUSION

Although an understanding of *Massachusetts* may be limited to what it says about standing or EPA's obligation to conduct rulemaking with regard to greenhouse gases resulting from vehicular sources, the ultimate impact of the case is much greater. The Supreme Court recognized that CO_2 constitutes an air pollutant in the context of climate change. That ruling forced an environmental dialogue which provided a catalyst for potential federal, regional, state, and local initiatives for regulating and addressing the adverse impacts of greenhouse gases.

161 With regard to other environmental laws, see for example, Robert L. Glicksman, *From Cooperative to Inoperative Federalism: The Perverse Mutation of Environmental Law and Policy*, 41 WAKE FOREST L. REV. 719, 737–47 (2006) (providing detailed analysis of federal and state responsibilities in various environmental statutes).

162 *See, e.g.*, Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 176 (2006).

California's pioneering efforts, as well as other regional and state efforts in the area of climate change, should be regarded as models for truly meaningful greenhouse gas initiatives. After all, California has progressively and effectively dealt with air pollution for decades and has sophisticated regulatory programs in place, supported by a high level of administrative and scientific expertise. States and local air agencies can provide critical support to future federal programs, particularly with regard to implementing and enforcing federal requirements on stationary sources. Consequently, the states and regions should be regarded as a laboratory for a broader federal solution based upon selective coordination and preemption with regard to those climate change programs that work, as well as those that do not.

Until preempted, the states and regions will, and indeed should, continue their efforts to address climate change within their means. With the potential Supremacy and Dormant Commerce Clause issues in mind, states and regions should design their global warming programs with an eye towards avoiding the obvious potential legal issues and obstacles, and in the future, states should be as consistent as possible with the science and potential tenets of a broader federal policy to be truly part of a global solution. The time to pursue a new environmental federalism to address the unprecedented threat of climate change is now. The methods, systems, and infrastructure for implementing solutions are already in place or under development, but their effectiveness depends on mutual agreement, coordination, and cooperation.

Meaningful solutions for resolving the climate change issue will take time, yet the prevailing science on the subject indicates we may no longer have that luxury. If the almost-daily reports in the press regarding melting glaciers, rising sea levels, threatened extinction of polar bears and other species, widespread drought, extreme weather events and other potential effects of climate change are any indicator of the seriousness of this issue, it is becoming increasingly difficult to believe that we are not simply running out of time. To the extent that the states are more nimble and, to a significant degree, have proven more proactive than the federal government with regard to the urgent need for meaningful climate change initiatives, they can and should take the lead in a broader national program to address climate change until the federal government responds. Hopefully, Congress and

the Administration will ultimately show the wisdom and courage needed to implement a broader and more comprehensive "global" approach to climate protection that incorporates and embraces the best and most effective of the evolving state and regional programs.

More than a decade after the Kyoto Protocol, whose signatories include more than 170 countries, generating more than sixty percent of total global greenhouse gas emissions, the United States has yet to ratify the treaty.[163] The political rationale behind that decision is still under debate, but the fact remains: If not for the actions taken by states and regional coalitions, we would have very little to show with regard to our country's efforts to address climate change.

Given the United States' highly visible standing as one of the major emitters of greenhouse gases on the planet, our failure to take responsible action as a nation has contributed significantly to a corresponding lack of action by other important countries and resulted in a rapid acceleration in the severity of the problem. Solutions are now more difficult to achieve than they were a decade ago, and the time for implementing them is quickly diminishing. Responsive and substantive action is needed on a large scale, which is precisely the case for a cooperative federal and state partnership. The United States needs to embrace a new environmental federalism and resume its role as a world leader on this issue. Once that happens, other nations will follow. Only then will we begin moving toward a truly meaningful global solution, which we now need more urgently than ever.

163 United Nations Framework Convention on Climate Change (UNFCCC), Parties to the Kyoto Protocol, http://maindb.unfccc.int/public/country.pl?group=kyoto (last visited Mar. 30, 2008).