The Future of Environmental Law and Complexities of Scale: Federalism Experiments with Climate Change under the Clean Air Act

Hari M. Osofsky*

INTRODUCTION

Since its inception, the Clean Air Act ("CAA") has served as an experiment in environmental governance models. Numerous books, articles, working papers, and public commentaries have dissected the CAA and proposed reforms.[1] Although often viewed as weaker than

* Associate Professor, Washington and Lee University School of Law, 2008–2010; Associate Professor, University of Minnesota Law School, 2010–. This Article has been greatly enhanced through the dialogue at the *New Directions in Environmental Law Symposium* hosted by Dan Mandelker, Dan Tarlock, and the *Washington University Journal of Law & Policy*. I also would like to thank Nicholas Albu, Nicholas Bianchi, George Davis, Crystal Doyle, Leigh Anne Faugust, David Gundlach, Christopher Hirsch, Sheri Hiter, Miles McCoy, and Simran Rahi for their very helpful research assistance, and Joel Christensen, Emily Zoellner, and other editors of the *Washington University Journal of Law & Policy* for their excellent editing of the Article. This project was made possible through research support from Washington and Lee University School of Law's Francis Lewis Law Center. As always, I tremendously appreciate the love, support, and patience of Josh, Oz, and Scarlet Gitelson.

1. For a few examples of the extensive commentary on the Clean Air Act, see CHRISTOPHER J. BAILEY, CONGRESS AND AIR POLLUTION (1998); GARY C. BRYNER, BLUE SKIES, GREEN POLITICS: THE CLEAN AIR ACT OF 1990 AND ITS IMPLEMENTATION (2d ed. 1995); CLEAN AIR ACT: INTERPRETATION AND ANALYSIS (James P. Lipton ed., 2006); THE CLEAN AIR ACT HANDBOOK (Robert J. Martineau, Jr. & David P. Novello eds., 2d ed. 2004); CLEAN AIR LAW AND REGULATION (Timothy Vanderver, Jr. ed., 1992); T. H. TIETENBERG, EMISSIONS TRADING: PRINCIPLES AND PRACTICE (2d ed. 2006); Holly Doremus & W. Michael Hanemann, *Of Babies and Bathwater: Why the Clean Air Act's Cooperative Federalism Framework Is Useful for Addressing Global Warming*, 50 ARIZ. L. REV. 799 (2008); John P. Dwyer, *The Practice of Federalism under the Clean Air Act*, 54 MD. L. REV. 1183 (1995); Robert B. McKinstry, Jr., Thomas D. Peterson, Adam Rose & Dan Wei, *The New Climate World: Achieving Economic Efficiency in a Federal System for Greenhouse Gas Control through State Planning Combined with Federal Programs*, 34 N.C. J. INT'L L. & COM. REG. 767 (2009); Thomas D. Peterson, Robert B. McKinstry, Jr. & John C. Dernbach, *Developing a Comprehensive Approach to Climate Change Policy in the United States that Fully Integrates Levels of Government and Economic Sectors*, 26 VA. ENVTL. L.J. 227 (2008); Douglas R.

some of the other statutes being analyzed in this symposium, the CAA has achieved some successes that have been emulated, such as in its cap-and-trade programs highlighted in Professor Buzbee's Article.[2] As importantly, the CAA has had to be flexible in responding to our evolving understandings of environmental problems. Whether through amendments or new regulatory regimes under existing provisions, the statute has served as a key mechanism in the U.S. federal government's efforts to respond to complex environmental challenges.[3]

This Article focuses on the CAA's efforts to grapple with complexities of regulatory scale as an illustration of the new directions in environmental law that are the focus of this symposium. Air moves around over time, which interconnects the local with the international and the past with the future. This Article uses the example of disputes over CAA regulation of motor vehicles' greenhouse gas emissions to illustrate how multiscalar clean air regulation should evolve in light of the changing demands for environmental law outlined by Professor Tarlock in the Introduction to this symposium.[4] It argues that for environmental problems that cross-cut levels of governance, flexible coordination and conflict mechanisms are critical. Future efforts at clean air regulation, whether through the CAA or additional statutes and other governance mechanisms, should incorporate what I have elsewhere termed "diagonal" regulatory thinking.[5] Such approaches bring together multiple actors within (the horizontal) and across (the vertical) levels of government to create innovative governance strategies.

Williams, *Cooperative Federalism and the Clean Air Act: A Defense of Minimum Federal Standards*, 20 ST. LOUIS U. PUB. L. REV. 67 (2001); Jamie Gibbs Pleune, Note, *Do We CAIR about Cooperative Federalism in the Clean Air Act?*, 2006 UTAH L. REV. 537 (2006).

2. *See* William W. Buzbee, *Clean Air Act Dynamism and Disappointments: Lessons for Climate Legislation to Prompt Innovation and Discourage Inertia*, 32 WASH. U. J.L. & POL'Y 33 (2010).

3. *See* sources cited *supra* note 1.

4. *See* A. Dan Tarlock, *Environmental Law: Then And Now*, 32 WASH. U. J.L. & POL'Y 1 (2010).

5. *See* Hari M. Osofsky, *Is Climate Change "International"? Litigation's Diagonal Regulatory Role*, 49 VA. J. INT'L L. 585 (2009) [hereinafter Osofsky, *Is Climate Change International?*]; Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, ALA. L. REV. (forthcoming 2010) (Feb. 3, 2010 draft) [hereinafter Osofsky, *Diagonal Federalism and Climate Change*].

The Obama administration Environmental Protection Agency ("EPA") is moving rapidly under its CAA statutory authority to regulate greenhouse gases from motor vehicle emissions.[6] As it does so, two disputes that arose during the second Bush administration frame its efforts. Specifically, the Obama administration has been working to implement the Supreme Court's decision in *Massachusetts v. EPA*, which resulted from states and cities suing the EPA for failing to use its authority under the CAA to regulate motor vehicle greenhouse gas emissions.[7] Simultaneously, the Obama administration has granted California's request for a waiver to regulate motor vehicle greenhouse gases more stringently than the federal government in conjunction with establishing a "National Program" to harmonize federal and state motor vehicle greenhouse gas emissions.[8]

These disputes and their resolution represent an exciting moment in the Clean Air Act's history as the statute evolves to address a complex environmental challenge. But their mix of conflict and cooperation also highlights the multiscalar environment in which environmental statutes are currently implemented. Both disputes reflect complex interactions among the federal government, states, and cities; current efforts at cooperation often involve active engagement by many stakeholders. While these interactions are not entirely new under the CAA—the statute has long served as an example in scholarly and policy federalism discourse[9]—the

6. *See* Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,494 (codified Dec. 15, 2009 at 40 C.F.R. ch. 1) [hereinafter Endangerment Finding]; Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule, 75 Fed. Reg. 25,324 (May 7, 1020) [hereinafter Final Rule]; *see also* Remarks on Fuel Efficiency Standards, 2009 DAILY COMP. PRES. DOC., No. 00377 (May 19, 2009).

7. *See* Massachusetts v. EPA, 549 U.S. 497, 505 (2007); Endangerment Finding, *supra* note 6.

8. *See* Final Rule, *supra* note 6; Memorandum from President Barack Obama to the Administrator of the EPA (Jan. 26, 2009), http://www.whitehouse.gov/the_press_office/Presidential_Memorandum_EPA_Waiver/; Press Release, EPA, EPA Grants California GHG Waiver (June 30, 2009), http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceceeac8525735900400c27/5e448236de5fb369852575e500568e1b!OpenDocument.

9. *See* sources cited *supra* note 1.

regulatory demands posed by climate change raise critical issues about the future of multiscalar governance.[10]

This Article contributes to the symposium's dialogue by examining the ways in which these conflicts over new applications of the CAA signal future directions for environmental law. The Article does not attempt to provide specific policy prescriptions for cross-cutting motor vehicle regulations, a project which I am pursuing in another article;[11] rather, in line with the symposium's goals, it sketches a conceptual map for new directions indicated by these regulatory battles. Part I introduces the ways in which the CAA grapples with issues of regulatory scale. Part II provides an overview of the two disputes and their resolution under the Obama Administration, with particular attention to the scalar dynamics

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10. *Arizona Law Review*'s 2008 symposium issue, for example, was devoted to climate federalism issues. *See* Carol M. Rose, *Federalism and Climate Change: The Role of the States in a Future Federal Regime—An Introduction*, 50 ARIZ. L. REV. 673 (2008). For additional discussions of federalism in the context of climate change, see BARRY G. RABE, *The Politics of Climate Change, State Style*, *in* STATEHOUSE AND GREENHOUSE: THE EMERGING POLITICS OF AMERICAN CLIMATE CHANGE POLICY 1 (2004); Randall S. Abate, *Kyoto or Not, Here We Come: The Promise and Perils of the Piecemeal Approach to Climate Change Regulation in the United States*, 15 CORNELL J.L. & PUB. POL'Y 369 (2006); Donald A. Brown, *Thinking Globally and Acting Locally: The Emergence of Global Environmental Problems and the Critical Need to Develop Sustainable Development Programs at State and Local Levels in the United States*, 5 DICK. J. ENVTL. L. & POL'Y 175 (1996); Ann E. Carlson, *Federalism, Preemption, and Greenhouse Gas Emissions*, 37 U.C. DAVIS L. REV. 281, 290–92 (2003); Ann E. Carlson, *Implementing Greenhouse Gas Emissions Caps: A Case Study of the Los Angeles Department of Water and Power*, 55 UCLA L. REV. 1479 (2008); Kirsten Engel, *State and Local Climate Change Initiatives: What is Motivating State and Local Governments to Address a Global Problem and What Does This Say About Federalism and Environmental Law?*, 38 URB. LAW. 1015 (2006); David R. Hodas, *State Law Responses to Global Warming: Is It Constitutional to Think Globally and Act Locally?*, 21 PACE ENVTL. L. REV. 53, 53–65 (2003); Alice Kaswan, *A Cooperative Federalism Proposal for Climate Change Legislation: The Value of State Autonomy in a Federalism System*, 85 DENV. U. L. REV. 791 (2008); Alice Kaswan, *The Domestic Response to Global Climate Change: What Role for Federal, State, and Litigation Initiatives?*, 42 U.S.F. L. REV. 39 (2007); Douglas A. Kysar & Bernadette A. Meyler, *Like a Nation State*, 55 UCLA L. REV. 1621 (2008); Barry G. Rabe, *North American Federalism and Climate Change Policy: American State and Canadian Provincial Policy Development*, 14 WIDENER L.J. 121, 128–51 (2004); Judith Resnik, Joshua Civin & Joseph Frueh, *Ratifying Kyoto at the Local Level: Sovereigntism, Federalism, and Translocal Organizations of Government Actors (TOGAs)*, 50 ARIZ. L. REV. 709 (2008); William Andreen et al., *Cooperative Federalism and Climate Change: Why Federal, State, and Local Governments Must Continue to Partner*, Center for Progressive Reform, May 29, 2008, http://progressive regulation.org/articles/Cooperative_Federalism_and_Climate_Change.pdf.

11. *See* Osofsky, *Diagonal Federalism and Climate Change*, *supra* note 5.

represented at each stage. Part III considers the broader policy and conceptual questions raised by these disputes for clean air regulation. Part IV concludes by exploring future possibilities for legal and policy approaches to multiscalar clean air regulation.

I. THE CLEAN AIR ACT AND REGULATORY SCALE

This Part provides an overview of the CAA's approach to scale in order to frame the Article's analysis of multiscalar clean air regulation. The CAA attempts to address the cross-cutting nature of air regulation by structuring regulatory interactions among the federal, state, and tribal governments in a fashion that has evolved through the amendment process over time. In so doing, it provides an ongoing example of dynamic federalism in action.[12]

The Clean Air Act contains both top-down mandates with smaller-scale implementation by states, tribes, and regions and bottom-up petition and citizen suit processes to request additional federal regulation or enforcement, which provide opportunities for both cooperation and conflict.[13] As this Part details, the top-down mandates vary in the extent to which they preempt smaller-scale decision making and in the flexibility they give to states to implement them uniquely, but they are all structured to allow the possibility of smaller-scale divergence. The bottom-up processes provide a wide range of opportunities for nongovernmental and governmental actors to challenge the EPA's implementation of the CAA.

The CAA's top-down mandates generally set minimum standards that states can choose to exceed. The broad savings clause established in CAA section 116 ensures that states with limited exceptions can "adopt or enforce (1) any standard or limitation respecting emissions of air pollutants or (2) any requirement respecting control or abatement of air pollution" as long as they are above the regulatory floors established in specific provisions.[14] The primary exception to

12. *See* Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 174–87 (2006).

13. For detailed analyses of the CAA, see sources cited *supra* note 1. I have explored these dynamics in the motor vehicles emissions regulation context. *See* Osofsky, *Diagonal Federalism and Climate Change*, *supra* note 5.

14. Clean Air Act § 116, 42 U.S.C. § 7416 (2006).

this approach, and one with great relevance to climate change regulation, as detailed below, occurs with respect to motor vehicles emissions regulation, an area in which the CAA mandates uniform national standards.[15] However, even in that context, a waiver provision for California and states that wish to follow California provides the possibility for states to exceed federal standards.[16]

The CAA, like other environmental statutes from its era, values opportunities for individuals, organizations, and governments to provide input into the regulatory process. Beyond the rulemaking processes that require public notice and comment, CAA § 304 authorizes citizen suits by "any person" to challenge (1) "any person['s]" violations of orders and standards, (2) the Administrator's non-discretionary inaction, and (3) "any person['s]" failure to obtain or abide by permits in the construction or modification of emitting facilities.[17] In addition, CAA § 307, the provision used effectively by the petitioners in *Massachusetts v. EPA*, provides for judicial review of rulemaking petitions.[18]

With these overarching structures as a base, nuanced regulatory provisions throughout the CAA establish the details of the dynamic interactions between the EPA and a myriad of governmental and nongovernmental actors at different levels. For example, states create implementation plans for meeting the national air quality standards. Those states that fail to meet national minimums are designated "nonattainment areas" and come under stricter federal control, which varies with respect to different pollutants.[19] The cap-and-trade program to address the sulfur dioxide emissions that cause acid rain provides for allocations of emissions allowances to existing facilities,

15. *See* 42 U.S.C. §§ 7401–7671 (2006).
16. *See* 42 U.S.C. § 7507 (2006).
17. CAA § 304, 42 U.S.C. § 7604 (2006).
18. CAA § 307, 42 U.S.C. § 7607 (2006).
19. For an in-depth analysis of these CAA provisions and their application, see Eileen Gauna, *Major Sources of Criteria Pollutants in Nonattainment Areas: Balancing the Goals of Clean Air, Environmental Justice, and Industrial Development*, 3 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 379 (1996). Ann Carlson's analysis of iterative federalism and climate change also includes extensive discussion of these provisions. *See* Ann E. Carlson, *Iterative Federalism and Climate Change*, 103 NW. U. L. REV. 1097 (2009).

which then can be traded to allow for new facilities to come on line.[20] As discussed in Professor Buzbee's Article in this symposium, this cap-and-trade system has been used as a model in proposed statutes regulating greenhouse gas emissions.[21]

Although the merits of many of the CAA's provisions have been debated extensively by policymakers and scholars,[22] the statute's many regulatory possibilities—whatever one thinks of them—exemplify dynamic federalism interactions. The CAA, as it has been amended over time, provides opportunities for diagonal regulatory interactions; that is, approaches that are simultaneously vertical and horizontal. These include, for example, the above-discussed acid rain cap-and-trade program,[23] a state waiver schema for more stringent regulation of motor vehicle emissions,[24] and some of the litigation to force regulatory action.[25]

These mechanisms are diagonal because they simultaneously involve vertical interactions between the EPA and states (and sometimes cities and nongovernmental organizations) and horizontal interactions among groups of actors at the same level.[26] In the cap-and-trade program, the EPA regulates emitters directly and through their interactions with one another.[27] The waiver provision, as detailed in the next Part, involves a direct regulatory interaction between the EPA and California, paired with collaborative behavior between California and other states.[28] In the most important CAA lawsuit regarding climate change, *Massachusetts v. EPA*, also

20. For an analysis of the CAA's acid rain provisions, see Joseph Goffman, *Title IV of the Clean Air Act: Lessons for Success of the Acid Rain Emissions Trading Program*, 14 PENN ST. ENVTL. L. REV. 177 (2006); *see also* Jennifer Yelin-Kefer, *Warming Up to an International Greenhouse Gas Market: Lessons from the U.S. Acid Rain Experience*, 20 STAN. ENVTL. L.J. 221 (2001).

21. *See* Buzbee, *supra* note 2, at 60.

22. For examples of these discussions, see sources cited *supra* note 1. An in-depth assessment of each provision is beyond the scope of this Article.

23. *See* Goffman, *supra* note 20; Yelin-Kefer, *supra* note 20.

24. This waiver provision is located at 42 U.S.C. § 7507 (2006).

25. *See supra* note 7 and accompanying text.

26. *See* Osofsky, *Is Climate Change "International"?*, *supra* note 5, at 591; Osofsky, *Diagonal Federalism and Climate Change*, *supra* note 5, at 55–56.

27. *Cf.* Goffman, *supra* note 20, at 182–87; Yelin-Kefer, *supra* note 20, at 227–30.

28. *See infra* notes 41–48 and accompanying text.

discussed in detail in the next Part, a wide range of governmental and nongovernmental actors lined up on opposing sides of the case.[29]

In my view, these kinds of diagonal mechanisms are a critical piece of the future of environmental regulation because they help to foster necessary multiscalar approaches. By engaging multiple actors at different levels of government, diagonal federalism helps to match the cross-cutting nature of many environmental problems.[30] The next Part explores this idea in more depth through the example of efforts to regulate motor vehicle greenhouse gas emissions under the Clean Air Act.

II. THE CLEAN AIR ACT, CARS, AND CLIMATE CHANGE

The United States currently lacks a comprehensive statutory regime addressing climate change. As a result, many of the leading environmental statutes have become key focal points in debates over climate change regulation. The CAA's motor vehicles emissions regulations in particular have spurred legal conflicts that have made their way to the Supreme Court and have influenced President Obama's initial policy priorities.

This Part analyzes two of these conflicts—the dispute that led to the current *Massachusetts v. EPA* implementation efforts, and the conflict over the California CAA waiver that resulted in the Obama administration "National Plan"—as windows into diagonal regulatory interactions under the Clean Air Act.[31] Although my diagonal federalism analysis of these instances shares much in common with other recent dynamic federalism accounts, such as Ann Carlson's scholarship on iterative federalism,[32] Jessica Bulman-Pozen and Heather K. Gerken's scholarship on noncooperative federalism,[33] and Robert Schapiro's scholarship on polyphonic federalism,[34] its focus is

29. *See infra* notes 36–40 and accompanying text.

30. *See* Osofsky, *Is Climate Change "International"?*, *supra* note 5, at 587–602; Osofsky, *Diagonal Federalism and Climate Change*, *supra* note 5, at 42–46.

31. *See supra* notes 7–8 and accompanying text.

32. Carlson, *supra* note 19.

33. Jessica Bulman-Pozen & Heather K. Gerken, *Uncooperative Federalism*, 118 YALE L.J. 1256 (2009).

34. ROBERT A. SCHAPIRO, POLYPHONIC FEDERALISM: TOWARD THE PROTECTION OF FUNDAMENTAL RIGHTS (2009).

different. Specifically, I am concerned with how simultaneous horizontal and vertical interactions take place through iterative interactions that move between cooperation and conflict. Both examples not only involve interaction between leader states and the federal government, the players at the center of traditional federalism analysis, but also among a range of additional governmental and nongovernmental actors. Moreover, as I have traced in previous scholarship, the disputes involve a conflict over which levels of government should address the problem of climate change.[35]

The administrative process that became the Supreme Court case *Massachusetts v. EPA* began when nongovernmental organizations submitted a rulemaking petition under CAA section 202(a)(1) requesting that greenhouse gas motor vehicle emissions be regulated as causing or contributing to "air pollution which may reasonably be anticipated to endanger public health or welfare."[36] By the time the case reached the Supreme Court, twelve states, three cities, a U.S. territory, and thirteen nongovernmental organizations served as the appellants pushing for regulation, while ten other states and nineteen industry and utility groups joined the EPA as appellees.[37] The appellees consistently argued that the problem was too large-scale and rife with scientific uncertainty for EPA regulation, while the appellants focused on the smaller scale impacts and the appropriateness of federal action.[38] In ruling for the appellants, the

35. *See* Osofsky, *Is Climate Change "International"?*, *supra* note 5, at 617–21; Hari M. Osofsky, *Conclusion: Adjudicating Climate Change*, *in* ADJUDICATING CLIMATE CHANGE ACROSS SCALES: STATE, NATIONAL, AND INTERNATIONAL APPROACHES (William C.G. Burns & Hari M. Osofsky eds., 2009); Hari M. Osofsky, *The Intersection of Scale, Science, and Law in* Massachusetts v. EPA, 9 OR. REV. INT'L L. 233 (2007) [hereinafter Osofsky, *Intersection of Scale, Science, and Law*].

36. Massachusetts v. EPA, 549 U.S. 497, 510 (2007). Section 202(a) of the Clean Air Act is codified at 42 U.S.C. § 7521(a)(1) (2006).

37. For a complete list of parties, see International Center for Technology Assessment, Global Warming Petitioners, http://icta.org/doc/SupCtPetitionersBriefFinal%208-30-06.pdf.

38. For example, with respect to standing, see Brief for the Federal Respondent at 13, Massachusetts v. EPA, 549 U.S. 497 (2007) (No. 05-1120); Brief for Respondents Alliance of Automobile Mfrs., Engine Mfrs. Ass'n, National Automobile Dealers Ass'n, Truck Mfrs. Ass'n at 13, Massachusetts v. EPA, 549 U.S. 497 (2007) (No. 05-1120); Reply Brief at 2–3, Massachusetts v. EPA, 549 U.S. 497 (2007) (No. 05-1120). With respect to substantive claims, see Brief for Respondent CO_2 Litigation Grp. at 20, Massachusetts v. EPA, 549 U.S. 497 (2007) (No. 05–1120); Brief for Petitioners at 29, Massachusetts v. EPA, 549 U.S. 497 (2007) (No. 05–1120); Brief for Respondents Alliance of Automobile Mfrs., Engine Mfrs. Ass'n, Nat'l

Supreme Court forced the EPA to regulate or provide better justification for failing to regulate.[39] After many months of stalling by the Bush administration EPA, the Obama administration EPA already has issued an endangerment finding, which could ultimately lead to extensive CAA regulation of motor vehicle greenhouse gas emissions.[40]

The state waiver dispute resulted from an application under section 209(a) of the CAA, which provides California with an exception to the federal preemption of state motor vehicle emissions standards and allows other states to choose between California and federal standards.[41] In response to the 2002 passage of Assembly Bill 1493,[42] the California Air Resources Board ("CARB") in 2004 promulgated vehicle emissions regulations aimed to maximize greenhouse gas emissions reductions;[43] then, in 2005, CARB petitioned the EPA for a waiver of preemption for these standards.[44] After extensive efforts by petitioners to obtain an EPA response to the waiver request, EPA Administrator Stephen Johnson announced his denial at the end of 2007.[45] This decision resulted in multiple

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Automobile Dealers Ass'n, Truck Mfrs. Ass'n at 38–39, Massachusetts v. EPA, 549 U.S. 497 (2007) (No. 05–1120); Brief for the Federal Respondent at 27–30, Massachusetts v. EPA, 549 U.S. 497 (2007) (No. 05–1120); Reply at 2–3, Massachusetts v. EPA, 549 U.S. 497 (2007) (No. 05–1120). I have analyzed these dynamics in depth with respect to both standing and substantive claims in Osofsky, *Intersection of Scale, Science, and Law*, *supra* note 35.

39. *See* Massachusetts v. EPA, 549 U.S. at 533–35.

40. *See* Endangerment Finding, *supra* note 6. Although an endangerment finding provides the basis for regulation, the EPA makes a point of clarifying on its website that the finding does not itself constitute regulation: "These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles, which EPA proposed in a joint proposal including the Department of Transportation's proposed CAFÉ standards on September 15, 2009." U.S. EPA, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, http://epa.gov/climatechange/endangerment.html (last visited June 10, 2010).

41. *See* Clean Air Act § 209(b), 42 U.S.C. § 7543(b) (2006); *see also* Clean Air Act Amendments of 1977 § 129(b), 42 U.S.C. § 7507 (2006). I have analyzed this dispute in depth in Osofsky, *Is Climate Change "International"?*, *supra* note 5.

42. The legislation introduced as Assembly Bill 1493 became effective Jan. 1, 2003. *See* Vehicular Emissions: Greenhouse Gases, 2002 Cal. Legis. Serv. 696–701 (West) (codified at CAL. HEALTH & SAFETY CODE § 43018.5 (West 2003)).

43. CAL. CODE REGS. tit. 13, § 1961.1 (2008).

44. California State Motor Vehicle Pollution Control Standards; Request for Waiver of Federal Preemption and Notice of Public Hearing, 72 Fed. Reg. 21,260 (Apr. 30, 2007).

45. *See* Letter from Stephen L. Johnson, Adm'r, U.S. EPA, to Arnold Schwarzenegger,

lawsuits and political efforts in Congress to overturn the denial.[46] The final resolution came shortly after President Obama took office in 2009, with the EPA's reconsideration of the decision and grant of the waiver.[47] This waiver grant paralleled efforts by the Obama administration to set more rigorous national standards, and California agreed on a plan to harmonize state and federal vehicle emissions standards by 2012.[48]

Although both *Massachusetts v. EPA* and the California waiver dispute involve the regulation of motor vehicle greenhouse gas emissions, their focus is fundamentally different. The petitioners in *Massachusetts v. EPA* aimed to force the federal government, specifically the EPA, to act under authority granted to it by the CAA.[49] In contrast, the state waiver dispute was about whether California and other states could exceed national standards.[50] The first conflict thus was a bottom-up effort, which faced opposition

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Governor of Cal. (Dec. 19, 2007), http://ag.ca.gov/cms_attachments/press/pdfs/n1514_epa-letter.pdf; EPA 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).

46. For examples of efforts to reverse the denial in courts, see Petition for Review of Decision of the U.S. EPA, California v. EPA, No. 08-70011 (9th Cir. Jan. 2, 2008), http://ag.ca.gov/cms_attachments/press/pdfs/n1514_epapetition-1.pdf; Motion for Leave to Intervene as Petitioners, California *ex rel.* Brown v. EPA, No. 08-70011 (9th Cir. Jan. 31, 2008), http://www.iowa.gov/government/ag/latest_news/releases/feb_2008/EPA_regulation.pdf; Complaint for Injunctive Relief Under the Freedom of Information Act, California v. EPA, No. 08-00735 (N.D. Cal. Jan. 31, 2008), http://ag.ca.gov/globalwarming/pdf/EPA_FOIA_complaint.pdf; Protective Petition for Review, California v. EPA, No. 08-1178 (D.C. Cir. May 5, 2008), http://www.cleancarscampaign.org/web-content/legal/docs/petition_08-1178.pdf; *see also* Office of the Attorney General, State of California, California's Motor Vehicle Global Warming Regulations, http://ag.ca.gov/globalwarming/motorvehicle.php (last visited Apr. 3, 2010). For examples of efforts to reverse and investigate the denial in Congress, see Reducing Global Warming Pollution from Vehicles Act of 2008, S. 2555, 110th Cong. (2008); Right to Clean Vehicles Act, H.R. 5560, 110th Cong. (2008); Richard Simon, *Hearing Grows Warm for EPA Chief*, L.A. TIMES, Jan. 25, 2008, at A13; STAFF OF H. COMM. ON OVERSIGHT AND GOVERNMENT REFORM, 110TH CONG., MEMORANDUM ON EPA'S DENIAL OF THE CALIFORNIA WAIVER (2008), http://oversight.house.gov/documents/20080519131253.pdf.

47. For a discussion of the Obama administration's reconsideration and grant of the waiver, see *supra* note 8 and accompanying text.

48. For examples of the Obama administration's regulatory actions thus far, see *supra* note 6 and accompanying text. For more on the effort to harmonize state and federal emissions standards, see *supra* note 8 and accompanying text.

49. Massachusetts v. EPA, 549 U.S. 497, 510 (2007). *See also supra* notes 36–40 and accompanying text.

50. *See supra* notes 44–48 and accompanying text.

from both the federal government and some state governments, to force top-down federal action. The second conflict was a bottom-up effort under a top-down, federal-level preemption/waiver system to support smaller-scale regulatory behavior, which in turn has pressured the federal government to regulate further in a larger-scale, top-down manner.[51]

In their cross-cutting dynamism, these two examples point the way for new directions in environmental law utilizing traditional environmental statutes. They demonstrate not only the complexity and difficulty of relying upon the CAA as a primary vehicle for regulating climate change, but also the statute's potential to be responsive to new problems and create needed interactions across levels of government. A key component of this responsiveness, in my view, is the way in which it allows for evolving formulations of diagonal regulatory interactions over time. I have elsewhere identified four key dimensions within which diagonal regulatory efforts vary: (1) scale (small v. large); (2) axis (vertical v. horizontal); (3) hierarchy (top down v. bottom up); and (4) cooperativeness (cooperation v. conflict).[52] What is striking about both cases is that their skews within these four dimensions vary dramatically over time, as noted in the above descriptions. The relevant mechanisms of the CAA allow complex regulatory dynamics that involve state-dominated action and federal decision making, state-federal and state-state interactions, top-down and bottom-up pressure, and conflict and cooperation at different moments. These patterns raise important questions for the future, which Part III engages.

III. CORE QUESTIONS FOR DYNAMIC FEDERALIST APPROACHES TO REGULATING AIR

This Part draws from the case example of the motor vehicle emissions regulation disputes to illustrate core dilemmas for future dynamic federalist approaches to regulating air. Such approaches must grapple with the changed conditions Professor Tarlock outlines

51. I have described the dynamics in these two cases in a similar fashion in Hari M. Osofsky, *The Continuing Importance of Climate change Litigation*, 1 CLIMATE L. 1, 23 (2010).

52. Osofsky, *Diagonal Federalism and Climate Change*, *supra* note 5, at 46–47.

in his introduction to this symposium,[53] and the ways in which environmental problems are changing. More specifically, this Part highlights four issues based on the example of evolving diagonal climate change regulation under the CAA that future environmental regulation needs to continue to explore how to address better: (1) the interaction among science, scale, and law; (2) the limits of "environmentalism" as an enclosing construct; (3) the importance of possibilities for engaging conflict; and (4) the difficulties of diagonals.

A. Interaction among Science, Scale, and Law

First, the disputes exemplify the use of scientific uncertainty and regulatory rescaling both to block smaller scale regulatory efforts and to push for their expansion. Such a pattern is not unique to this dispute; it manifests throughout climate change litigation and in environmental regulation more broadly. My previous interdisciplinary scholarship integrates the work of Holly Doremus on science and politics and of geographer Nathan Sayre on the geography and ecology of scale in order to dissect these patterns.[54] My hope is that such an exploration might help us to construct better future environmental regulatory regimes with more sensitivity to the interaction between science and scale.

For example, with respect to climate change, we have to deal with the greater scientific uncertainty at smaller spatial and time scales against the sticky backdrop of law subdivided into different units and levels of government.[55] This dilemma was manifest in the arguments

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53. Tarlock, *supra* note 4.

54. *See* Osofsky, *Intersection of Scale, Science, and Law*, *supra* note 35; *see also* Holly Doremus, *Listing Decisions under the Endangered Species Act: Why Better Science Isn't Always Better Policy*, 75 WASH. U. L.Q. 1029 (1997); Holly Doremus & A. Dan Tarlock, *Science, Judgment, and Controversy in Natural Resource Regulation*, 26 PUB. LAND & RESOURCES L. REV. 1 (2005); Holly Doremus, *Science Plays Defense: Natural Resource Management in the Bush Administration*, 32 ECOLOGY L.Q. 249 (2005) [hereinafter Doremus, *Science Plays Defense*]; Holly Doremus, *The Purposes, Effects, and Future of the Endangered Species Act's Best Available Science Mandate*, 34 ENVTL. L. 397 (2004); Nathan F. Sayre, *Ecological and Geographical Scale: Parallels and Potential for Integration*, 29 PROGRESS HUM. GEOGRAPHY 276, 281 (2005).

55. I have explored this dilemma in Osofsky, *Is Climate Change "International"?*, *supra* note 5. For geographers' analyses of scalar fixity and fluidity, see Neil Brenner, *Between Fixity*

made throughout both the *Massachusetts v. EPA* litigation and the California waiver dispute. Judges and policymakers grappled with whether that smaller scale uncertainty was too great for national-level and state-level action, and whether a broad federal statute focused on air was an appropriate vehicle for accomplishing that action.[56] The Obama administration will continue to confront these issues as it uses the CAA as a cooperative tool in motor vehicles emissions regulation. EPA efforts will evolve in tandem with emerging scientific understanding, and a potential future climate change statutory regime will interact with and perhaps preempt some of these CAA approaches.[57]

B. Limits of "Environmentalism" as an Enclosing Construct

Second, because climate change is so deeply intertwined with our carbon economy and way of life, addressing it through traditional

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and Motion: Accumulation, Territorial Organization and the Historical Geography of Spatial Scales, 16 ENV'T & PLAN. D: SOC'Y & SPACE 459, 461 (1998); Kevin R. Cox, *Spaces of Dependence*, *Spaces of Engagement and the Politics of Scale, or: Looking for Local Politics*, 17 POL. GEOGRAPHY 1, 21 (1998); David Delaney & Helga Leitner, *The Political Construction of Scale*, 16 POL. GEOGRAPHY 93, 93 (1997); Andrew Herod, *Scale: The Local and the Global*, *in* KEY CONCEPTS IN GEOGRAPHY 229, 234–36 (Sarah L. Holloway, Stephen P. Rice & Gill Valentine eds., 2003); Deborah G. Martin, *Transcending the Fixity of Jurisdictional Scale*, 18 POL. GEOGRAPHY 33 (1999); Anssi Paasi, *Place and Region: Looking through the Prism of Scale*, 28 PROGRESS HUM. GEOGRAPHY 536, 542–43 (2004); Erik Swyngedouw, *Excluding the Other: The Production of Scale and Scaled Politics*, *in* GEOGRAPHIES OF ECONOMIES 167, 169–70 (Roger Lee & Jane Wills eds., 1997); and Erik Swyngedouw, *Neither Global nor Local: "Glocalization" and the Politics of Scale*, *in* SPACES OF GLOBALIZATION: REASSERTING THE POWER OF THE LOCAL 137, 140–42 (Kevin R. Cox ed., 1997). For discussions of the greater scientific uncertainty at smaller scales, see NATIONAL RESEARCH COUNCIL, EVALUATING PROGRESS OF THE U.S. CLIMATE CHANGE SCIENCE PROGRAM: METHODS AND PRELIMINARY RESULTS 5 (2007), *available at* http://books.nap.edu/openbook.php?isbn=0309108268; Patrick J. Bartlein, Professor, Dep't of Geography, Univ. of Or., Remarks at Seminar on Reading the Fourth IPCC Assessment Report 2007 (Oct. 17, 2007) (author's notes, on file with author).

56. *See supra* notes 36–40, 44–48 and accompanying text.

57. For discussions of potential climate change legislation, see Buzbee, *Clean Air Act Dynamism and Disappointments*, *supra* note 2; Victor B. Flatt, *Taking the Legislative Temperature: Which Federal Climate Change Legislative Proposal is "Best"?*, 102 NW. U. L. REV. COLLOQUY 123 (2007); Hari M. Osofsky, *Climate Change Legislation in Context*, 102 NW. U. L. REV. COLLOQUY 245 (2008); Robert N. Stavins, *A Meaningful Cap-and-Trade System to Address Climate Change*, 32 HARV. ENVTL. L. REV. 293 (2008); Kenneth R. Richards & Stephanie Hayes Richards, The Evolution and Anatomy of Recent Climate Change Bills in the U.S. Senate: Critique and Recommendations (July 1, 2009), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1368903.

environmental mechanisms, such as the CAA waiver process, is challenging.[58] Environmental law generally and "clean air" regulation in particular cannot be captured simply through improving a federal statutory regime we call environmental law, even though that regime helps to address complex environmental problems like climate change. Rather, environmental analysis needs to engage the range of laws and social, economic, and cultural decisions that undergird these problems and their solutions. Our future environmental regimes need to value the strong federal statutes we have created, improve upon them, and realize that they are only part of multiscalar environmental regulation.

Interdisciplinary adaptive management approaches, such as the one taken by J.B. Ruhl and James Salzman in their recent work on complex environmental problems (including climate change), represent a helpful variation on such an effort.[59] These approaches attempt to engage "ecological, economic, and institutional systems" simultaneously in a "cross-scale, interdisciplinary, and dynamic" fashion, which Lance Gunderson, C.S. Holling, and Don Ludwig have termed "panarchy."[60] But translating these approaches into policy contexts, like reassessment and implementation of the CAA, raises practical questions about how to structure law in ways that capture such complexity. The conflicts over the CAA motor vehicle greenhouse gas emissions regulation illustrate this conundrum. These disputes and the regulations resulting from them are establishing specific tailpipe emissions standards and determining the levels of

58. For analyses of the problem of climate change and complexities of solutions, see INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS (2007), *available at* http://www.ipcc.ch/ipccreports/ar4-wg1.htm; INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY (2007), *available at* http://www.ipcc.ch/ipccreports/ar4-wg2.htm [hereinafter IPCC, IMPACTS]; INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: MITIGATION OF CLIMATE CHANGE, *available at* http://www.ipcc.ch/ipccreports/ar4-wg3.htm [hereinafter IPCC, MITIGATION]; NICHOLAS STERN, THE ECONOMICS OF CLIMATE CHANGE: THE STERN REVIEW (2007), *available at* http://www.hm-treasury.gov.uk/stern_review_report.htm.

59. J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 CAL. L. REV. 59 (2010).

60. C.S. Holling, Lance H. Gunderson & Donald Ludwig, *In Quest of a Theory of Adaptive Change*, *in* PANARCHY: UNDERSTANDING TRANSFORMATIONS IN HUMAN AND NATURAL SYSTEMS 3, 5 (Lance H. Gunderson & C.S. Holling eds., 2002).

government allowed to create and enforce them. Although a wide range of actors—from automobile corporations to individual drivers—have an interest in what those standards are and seek to effect their implementation, the motor vehicles emissions regulations themselves cannot fully capture that nuance; instead, they simply set limits on how much carbon dioxide can come out of new cars.[61] As environmental law continues to develop, it will repeatedly confront the stickiness of law and the limits of functional legal capacity to address ecologically, economically, socially, and institutionally complex problems.

C. Importance of Possibilities for Engaging Conflict

The *Massachusetts v. EPA* and California waiver disputes and the attention they have garnered play an important regulatory role and reinforce the value of not just cooperation but also conflict for dynamic federalist approaches. The *Massachusetts v. EPA* lawsuit provided a wide range of governmental and nongovernmental actors the opportunity to weigh in on the appropriateness of the CAA as a vehicle for regulating climate change. The Supreme Court's resolution of the case and the Obama administration's efforts at implementation have put pressure on Congress to take action and have played a significant cultural signaling role in reinforcing the importance of the problem of climate change.[62] The waiver mechanism and the various means of challenging its denial allowed for an expression of different views on climate regulation; such expression has assisted in the construction of a cooperative regulatory framework over time. The Obama administration's National Plan not only involves collaboration between the federal government and leader states, but also has the endorsement of automobile companies.[63] The disagreements over how to regulate and the

61. *See* Notice of Upcoming Joint Rulemaking, *supra* note 6.

62. The signaling impact of the decision was reinforced by other events that same spring, such as Al Gore and the Intergovernmental Panel on Climate Change receiving the Nobel Peace Prize. *See* The Nobel Peace Prize 2007, http://nobelprize.org/nobel_prizes/peace/laureates/2007/ (last visited Apr. 3, 2010).

63. Press Release, Auto Alliance, Automakers Support President in Development of National Program for Autos (May 18, 2009), *available at* http://www.autoalliance.org/

mechanisms for expressing divergent views under the CAA put pressure on regulators at multiple levels to improve their approaches.

Emerging federalism scholarship recognizes the importance of interactions like those that took place in these two disputes over the use of the CAA to mitigate climate change. As we look to the future, we should reevaluate what has worked about the processes built into the CAA and other environmental laws to allow for challenges, and consider what conflict mechanisms are most helpful in which contexts. We also have to look backward as we look forward, considering how longstanding mechanisms like nuisance actions should fit into the evolving statutory regime. These are pressing questions because the potential statutory regime on climate change emerges in a context in which the Second Circuit has validated the viability of climate nuisance suits and other circuits are considering this issue[64] and in which the Obama administration is using existing statutory frameworks like the CAA to mitigate greenhouse gas emissions more aggressively.[65]

D. Difficulties of Diagonals

Fully integrated formal diagonal federalism, in which all relevant actors are simultaneously included in environmental statutory and regulatory regimes, may be hard to achieve, but many possibilities for partial diagonal regulation exist. In particular, as noted above, I am focusing in my research on four dimensions within which partial integration might occur: scale, axis, hierarchy, and cooperativeness. By breaking down integrative possibilities into these dimensions, we

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index.cfm?objectid=55B4BAFF-1D09-317F-BBB0DA0B7783C956 (last visited Apr. 3, 2010).

64. *See* Connecticut v. Amer. Elec. Power Co., 582 F.3d 301 (2d Cir. 2009). The Fifth Circuit initially reached a similar conclusion, *see* Comer v. Murphy Oil USA, 585 F.3d 855 (5th Cir. 2009), but then voted to rehear the case *en banc*, *see* Comer v. Murphy Oil USA, 598 F.3d 209 (5th Cir. 2010). Upon rehearing *en banc*, the Fifth Circuit found that it lacked a quorum due to recusals, and a majority of the remaining judges held that the appellate decision was therefore vacated. *See* Comer v. Murphy Oil USA, No. 07-60756, 2010 WL 2136658 (5th Cir. May 28, 2010). An additional climate nuisance case is currently on appeal to the Ninth Circuit following a district court dismissal on justifiability grounds. *See* Native Village of Kivalina v. Exxon Mobil Corp., 663 F. Supp. 2d 863 (N.D. Cal. Sept. 30, 2009).

65. *See supra* notes 36–40, 44–48 and accompanying text.

can build regimes that achieve fully integrated diagonal regulation through combinations of different partially integrative strategies.[66]

As discussed in Part II, the Clean Air Act already contains many partially integrative strategies. The two disputes highlight how skews within the dimensions vary over time and suggest ways in which different CAA mechanisms might build upon one another. The simultaneous conflicts put combined bottom-up conflictual pressure on the Bush administration and created pressure for dual regulatory action on federal and state scales.[67] The Obama administration's responsiveness to both the Supreme Court ruling and the waiver request has helped it to make strides in creating an integrated multi-level approach to motor vehicle emissions regulation under the CAA, even in a context in which climate change legislation moves slowly through Congress.[68] Future iterations of such regulation, whether under the CAA or some other environmental statute, should consider and reconsider where regulation should be along each vector to build the most effective regime.

IV. THE FUTURE OF MULTISCALAR CLEAN AIR STRATEGIES

This Article concludes with a brief reflection on how the current complexities of environmental governance frame possibilities for the future of multiscalar clean air strategies. The difficulties of achieving diagonals, and the complex dynamics around emerging "air" problems like climate change, suggest the need to construct a range of regulatory interactions that can complement one another. The CAA models the possibilities and limitations of such interactions through the range of approaches it takes across scales and through mechanisms like the state waiver for motor vehicle emissions regulation that allow for dynamism.

Creative regulation needs to be effective in addressing these issues, and the CAA provides a cautionary tale of how hard future air regulation will be—even when we attempt innovative regulatory

66. *See* Osofsky, Diagonal Federalism and Climate Change, *supra* note 5, at 64.

67. For an in-depth analysis of how motor vehicles emissions regulation skews within the four dimensions and the implications of those patterns for the Obama administration, see *id*. at 64–72.

68. *See id*. at 19–22.

structures—with support and resistance at multiple levels of government. Environmental law must navigate intertwined ecological and socio-legal forces; at the same time, it must create effective prescriptions that can be feasibly implemented. As policymakers build upon the Clean Air Act over time, both through amending the Act itself and through complementary legislation, their constructs need to reflect the ways in which these nuances of scale interact with our federalist structure.