

A COLLECTIVE ACTION PERSPECTIVE ON CEILING PREEMPTION BY FEDERAL ENVIRONMENTAL REGULATION: THE CASE OF GLOBAL CLIMATE CHANGE

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INTRODUCTION

In this Article, we draw on collective action theory¹ and traditional preemption doctrine² to develop a framework for thinking about environ-

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¹ Collective action theory examines the dynamics of individual behavior in cooperative group settings. According to the seminal theories of Mancur Olson, because the benefits of collective behavior are often a species of public good that all members of the collective will enjoy regardless of their contribution to its creation, individual members of a collective have the incentive to “free ride” on the efforts of others. See MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* (1965). For further discussion of collective action theory, see generally JAMES S. COLEMAN, *INDIVIDUAL INTERESTS AND COLLECTIVE ACTION* (1986); MICHAEL HECHTER, *PRINCIPLES OF GROUP SOLIDARITY* (1987); MANCUR OLSON, *THE RISE AND DECLINE OF NATIONS: ECONOMIC GROWTH, STAGFLATION, AND SOCIAL RIGIDITIES* (1982); DAVID REISMAN, *THEORIES OF COLLECTIVE ACTION: DOWNS, OLSON AND HIRSCH* (1990); TODD SANDLER, *COLLECTIVE ACTION: THEORY AND APPLICATIONS* (1992); and THOMAS SCHWARTZ, *THE LOGIC OF COLLECTIVE CHOICE* (1986). Collective action theory can also be applied to the behavior of states in a federal system, a theme that has been developed elsewhere by one of the authors. See RICHARD E. LEVY, *THE POWER TO LEGISLATE: A REFERENCE GUIDE TO THE UNITED STATES CONSTITUTION 83–90* (2006); Richard E. Levy, *Federalism and Collective Action*, 45 U. KAN. L. REV. 1241 (1997); see also William W. Buzbee, *Recognizing the Regulatory Commons: A Theory of Regulatory Gaps*, 89 IOWA L. REV. 1 (2003) (characterizing collective action incentives for state underregulation as a tragedy of the commons problem); Clayton P. Gillette, *The Exercise of Trumps by Decentralized Governments*, 83 VA. L. REV. 1347 (1997) (using collective action principles to analyze the relatively exceptional circumstances under which state or local governments might be allowed to override federal or central policy decisions); Ken Kollman et al., *Decentralization and the Search for Policy Solutions*, 16 J.L. ECON. & ORG. 102 (2000) (employing mathematical and computational models to assess the effectiveness of decentralized experimentation by federal subunits of government in generating superior policy solutions).

² See *infra* Part I.A.

mental preemption. We then apply it to regulation of greenhouse gases (GHGs) in response to global climate change.³ We begin with the fundamental premise that preemption doctrine can be understood as a means of allocating decisional responsibility between the federal and state governments with respect to matters in which they exercise concurrent authority.⁴ Because preemption in all its forms generally depends upon the purposes of federal regulation, the critical question is the extent to which those purposes justify the displacement of state regulatory authority.

The development of a framework for thinking about preemption issues is especially important in light of recent trends in the regulatory state. From the New Deal through the “Great Society,” the dominant political and academic mentality assumed that government regulation was necessary to prevent abuse of economic power, protect public health and safety, and preserve the environment.⁵ Over time, however, critics emerged to challenge these assumptions. Academics extolled the virtues of free markets and argued that most regulation is the product of rent-seeking by special interests (cloaked in public interest rhetoric).⁶ Politicians blamed a variety of economic and social ills on excessive regulation, which they contended stifled economic growth while producing few, if any, measurable benefits.⁷ In

³ For further discussion of regulatory responses to global climate change, see GLOBAL CLIMATE CHANGE AND U.S. LAW (Michael B. Gerrard ed., 2007); 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).

⁴ Under the Constitution, the federal government has authority to regulate through necessary and proper legislation within the fields of enumerated powers. *E.g.*, *McCulloch v. Maryland*, 17 U.S. (4 Wheat.) 316 (1819). In some areas, states have been deprived of the authority to regulate and federal power is exclusive. *See* U.S. CONST. art. I, § 10. In all other areas states retain their power, which means that federal and state authority are concurrent in many fields. The Supreme Court has largely abandoned the view, often articulated as the basis for a restrictive reading of federal authority, that federal and state power are mutually exclusive. *See generally* LEVY, *supra* note 1, at 46–50, 60–62.

⁵ *See generally* Robert L. Rabin, *Federal Regulation in Historical Perspective*, 38 STAN. L. REV. 1189 (1986) (reviewing the history of federal regulation).

⁶ This includes the “Chicago School” law and economics movement and supporters of public or social choice theory. *See generally* Maxwell L. Stearns, *Restoring Positive Law and Economics: Introduction to Public Choice Theme Issue*, 6 GEO. MASON L. REV. 709, 711–25 (1998) (discussing the history of law and economics and public choice theory).

⁷ Examples include the Reagan Revolution and the Contract with America. The “Reagan Revolution” is a popular shorthand term to describe the reinvigoration of conservatism fueled by the election and administration of Ronald Reagan, which included a significant emphasis on deregulation. *See generally* CHARLES FRIED, *ORDER AND LAW: ARGUING THE REAGAN REVOLUTION—A FIRSTHAND ACCOUNT* (1991); DAVID A. STOCKMAN, *THE TRIUMPH OF POLITICS: HOW THE REAGAN REVOLUTION FAILED* (1986); Ted V. McAllister, *Reagan and the Transformation of American Conservatism*, in *THE REAGAN PRESIDENCY: PRAGMATIC CONSERVATISM AND ITS LEGACIES* 40, 40–60 (W. Elliot Brownlee & Hugh Davis Graham eds., 2003). The Contract with America, devised by incoming Speaker of the House of Representatives Newt Gingrich, was the focal point of the 1994 congressional elections and served as a policy blueprint for the first one hundred days of the 104th Congress. One of its principal objectives was the “restoration of opportunity through regulatory and tax relief.” Robert L. Glicksman

light of this sustained challenge to the administrative state, we live in an era of regulatory skepticism.

Even though the opponents of regulation have not succeeded in dismantling the modern regulatory state, they have had a significant impact on the political and legal landscape.⁸ Deregulation or market-based approaches to regulation have been implemented in various areas.⁹ Statutes and executive orders direct federal agencies to assess the costs of regulation and seek the least burdensome alternatives.¹⁰ There are even some signs of more aggressive judicial review of government regulation.¹¹ The modern regulatory state remains firmly established and the need for economic, health and safety, and environmental regulation is broadly accepted. But in the era of regulatory skepticism, the creation of new regulatory programs is difficult and the implementation of existing programs is often less robust; proponents of regulation bear a heavier burden of justification to persuade policymakers and must overcome a variety of new legal hurdles.

& Stephen B. Chapman, *Regulatory Reform and (Breach of) the Contract with America: Improving Environmental Policy or Destroying Environmental Protection?*, 5 KAN. J.L. & PUB. POL'Y 9, 16 (1996).

⁸ Of course, this sort of political change is never permanent, and the pendulum may have already begun to swing in the other direction. Proponents of regulation have regrouped and challenged the arguments of opponents of regulation. See, e.g., FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING (2004); A NEW PROGRESSIVE AGENDA FOR PUBLIC HEALTH AND THE ENVIRONMENT (Christopher H. Schroeder & Rena Steinzor eds., 2005); RESCUING SCIENCE FROM POLITICS: REGULATION AND THE DISTORTION OF SCIENTIFIC RESEARCH (Wendy Wagner & Rena Steinzor eds., 2006); SIDNEY A. SHAPIRO & ROBERT L. GLICKSMAN, RISK REGULATION AT RISK: RESTORING A PRAGMATIC APPROACH (2003); STRATEGIES FOR ENVIRONMENTAL SUCCESS IN AN UNCERTAIN JUDICIAL CLIMATE (Michael Allan Wolf ed., 2005). In some areas, moreover, experience with deregulation has served to remind us why regulation was seen as necessary in the first place. See, e.g., Sidney A. Shapiro & Joseph P. Tomain, *Rethinking Reform of Electricity Markets*, 40 WAKE FOREST L. REV. 497 (2005); Jacqueline Lang Weaver, *Can Energy Markets Be Trusted? The Effect of the Rise and Fall of Enron on Energy Markets*, 4 HOUS. BUS. & TAX L.J. 1 (2004); cf. Rena Steinzor, "You Just Don't Understand"—*The Right and the Left in Conversation*, 32 ENVTL. L. REP. 11,109 (2002) (analyzing defects in California air pollution emissions trading system).

⁹ See, e.g., SIDNEY A. SHAPIRO & JOSEPH P. TOMAIN, REGULATORY LAW AND POLICY: CASES AND MATERIALS 20–21 (3d ed. 2003) (summarizing deregulation of transportation, energy, and telecommunications markets).

¹⁰ See, e.g., *id.* at 22–23 (summarizing such requirements).

¹¹ In some of these cases, aggressive judicial review has taken the form of the imposition on agencies of rigorous burdens of proof to justify regulation. See, e.g., *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201 (5th Cir. 1991). In others, it has taken the form of the invocation of canons of statutory construction (such as the canon that statutes should be interpreted in such a way as to avoid raising constitutional issues) to narrowly interpret the scope of federal environmental legislation. See, e.g., *Solid Waste Agency of N. Cook County v. U.S. Army Corps of Eng'rs*, 531 U.S. 159 (2001); *Indus. Union Dep't, AFL-CIO v. Am. Petroleum Inst.*, 448 U.S. 607 (1980) (plurality opinion). In still others, the courts have found environmental legislation or regulations to be unconstitutional. See, e.g., *Am. Trucking Ass'ns, Inc. v. EPA*, 175 F.3d 1027 (D.C. Cir. 1999), *rev'd in part*, 531 U.S. 457 (2001). See generally Richard E. Levy & Robert L. Glicksman, *Judicial Activism and Restraint in the Supreme Court's Environmental Law Decisions*, 42 VAND. L. REV. 343, 363–85 (1989) (discussing the Supreme Court's substantive review of prodevelopment and proenvironmental decisions by agencies).

These forces are particularly apparent in the field of environmental law. With some exceptions, the trend since the mid-1980s has been toward weakening federal laws that protect the environment. Congress has weakened procedural requirements designed to make it more difficult for federal agencies to engage in, or authorize others to engage in, environmentally damaging activities.¹² It has also removed or weakened some of the substantive constraints applicable to activities that are potentially harmful to public health or the environment.¹³ The executive branch, through the issuance of executive orders and agency regulations, has embarked upon a similar path, although the antiregulatory thrust has been stronger under some administrations than others.¹⁴ Finally, the federal courts have restricted the scope and watered down the content of federal environmental law through their interpretation and application of both constitutional and statutory doctrines.¹⁵

Due to an unreceptive federal government, environmentalists have increasingly turned to state and local regulatory bodies, many of which have been far more sympathetic to their regulatory agenda. Some of these state and local entities have adopted environmental regulations that are more protective of the environment than their federal counterparts, only to encounter federal obstructions. Insofar as the federal government had taken the lead in environmental protection since the adoption of the Clean Air and Clean Water Acts in the early 1970s,¹⁶ this flurry of state regulatory activity represents something of a role reversal.

State regulatory efforts in response to federal inaction and deregulation increasingly present a new kind of preemption question: when does federal environmental law preempt state laws that are more protective of the envi-

¹² See, e.g., Healthy Forests Restoration Act of 2003, 16 U.S.C. §§ 6514–6515 (Supp. III 2003) (subjecting various logging activities to less expansive environmental assessment requirements than those that normally apply under the National Environmental Policy Act and restricting the class of persons who may seek judicial review of the federal government's authorization of those activities).

¹³ On several occasions, for example, Congress has exempted military activities from environmental legislation or subjected those activities to watered down versions of that legislation. See Robert L. Glicksman, *From Cooperative to Inoperative Federalism: The Perverse Mutation of Environmental Law and Policy*, 41 WAKE FOREST L. REV. 719, 767–68 (2006) (discussing legislation creating exemptions for military activities from the Endangered Species Act, the Migratory Bird Treaty Act, and the Marine Mammal Protection Act).

¹⁴ For a discussion of some of those executive orders, see ROBERT L. GLICKSMAN ET AL., ENVIRONMENTAL PROTECTION: LAW AND POLICY 214–17 (5th ed. 2007).

¹⁵ For a thorough survey of the efforts engaged in by all three branches of the federal government whose effect has been to weaken federal environmental regulation, see Glicksman, *supra* note 13, at 754–78.

¹⁶ John L. Horwich, *Montana's Constitutional Environmental Quality Provisions: Self-Execution or Self-Delusion?*, 57 MONT. L. REV. 323, 329–30 (1996); Omar N. White, Note, *The Endangered Species Act's Precarious Perch: A Constitutional Analysis Under the Commerce Clause and the Treaty Power*, 27 ECOLOGY L.Q. 215, 250 (2000).

ronment?¹⁷ To use terminology employed by William Buzbee, we will distinguish between “floor” and “ceiling” preemption.¹⁸ When the federal government sets more stringent standards than those adopted at the state or local level, it establishes a floor of federal environmental protection that state law cannot lower but leaves the states free to raise the floor by enacting more protective laws. When federal law preempts more stringent or environmentally protective state regulations, it establishes a ceiling above which states cannot go, although the law might leave the states free to enact less restrictive regulations. And when federal law completely preempts the field, it displaces state authority and establishes both a floor and a ceiling.

We focus on ceiling preemption by federal environmental regulation because it presents the more difficult and important questions. Floor preemption is inherent in federal environmental law in the sense that (absent some express savings clause in the federal law) no state law could, by setting a lower state standard, create a defense to a violation of the federal standard.¹⁹ In such a case, the conflict between federal and state law would be clear and federal law would prevail under the Supremacy Clause.²⁰ It is far less clear whether and when ceiling preemption is appropriate.²¹ After all, the more protective state law would not hinder the enforcement of the federal standard and would appear to further the environmental goals of the federal law. Of course, no federal statute is intended to achieve environ-

¹⁷ See, e.g., *Bates v. Dow Agrosciences LLC*, 544 U.S. 431 (2005); *Engine Mfrs. Ass’n v. S. Coast Air Quality Mgmt. Dist.*, 541 U.S. 246 (2004); *Geier v. Am. Honda Motor Co.*, 529 U.S. 861 (2000); *Clean Air Mkts. Group v. Pataki*, 338 F.3d 82 (2d Cir. 2003); *Ass’n of Int’l Auto. Mfrs. v. Comm’r, Mass. Dep’t of Env’t. Prot.*, 208 F.3d 1 (1st Cir. 2000).

¹⁸ See William W. Buzbee, *Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction*, 82 N.Y.U. L. REV. 1547 (2007); see also Joshua D. Sarnoff, *The Continuing Imperative (But Only from a National Perspective) for Federal Environmental Protection*, 7 DUKE ENVTL. L. & POL’Y F. 225, 284 n.202 (1997) (employing similar terminology).

¹⁹ Technically, the state law might remain on the books and could be enforced by the state alongside the federal statute even if the state law creates a less protective environmental standard, but this would not impede the application of the federal standard and might actually enhance protection of the environment in two ways. First, a state’s enforcement of its laws would increase the likelihood that violators would be caught and successfully prosecuted. Second, if a violation is prosecuted by both the state and federal governments, the total penalty would be increased. Thus, displacing state authority to enforce its own environmental regulations as a supplement to federal enforcement would really be a form of ceiling preemption.

²⁰ U.S. CONST. art. VI, cl. 2.

²¹ See, e.g., *Fireman’s Fund Ins. Co. v. City of Lodi*, 302 F.3d 928 (9th Cir. 2002) (engaging in a lengthy analysis of whether a local ordinance authorizing the city to investigate and remediate contamination of soil and groundwater by hazardous substances was preempted by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601–9675, and concluding that some aspects of the local law were preempted, but that others were not). Compare *Welchert v. Am. Cyanamid, Inc.*, 59 F.3d 69 (8th Cir. 1995) (holding that a cause of action for breach of express warranty was preempted by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)), 7 U.S.C. §§ 136–136y, with *Roberson v. E.I. Dupont De Nemours & Co.*, 863 F. Supp. 929 (W.D. Ark. 1994) (holding that an action for breach of express warranty that relies upon statements made on an EPA-approved label is not preempted by FIFRA).

mental protection at all costs, and limiting regulatory burdens is always a countervailing concern, but those concerns may not justify ceiling preemption.²²

The response of state and local governments to the threats posed by global climate change provides a good example of these developments. The federal government has resisted regulation of GHG emissions that contribute to climate change since George W. Bush took office, repudiating the Kyoto Protocol²³ and refusing to take action under the Clean Air Act. Recently, in *Massachusetts v. EPA*,²⁴ the Supreme Court rejected the EPA's argument that it lacks authority under the Act to regulate GHGs and dismissed as unpersuasive and legally irrelevant the agency's litany of reasons for refusing to regulate even if it has the power to do so.²⁵ The current Administration's position and the litigation it spawned delayed the pursuit of federal regulatory initiatives on climate change and it remains unclear whether the current Administration will regulate vigorously and effectively in response to the Court's decision.²⁶ Meanwhile, states and localities have enacted regulatory restrictions on GHG emissions and launched their own emissions trading programs.²⁷ Opponents of these efforts, particularly the automobile industry, have argued that federal law preempts these programs, but both federal district courts that have addressed the arguments have rejected them.²⁸

We believe that the resolution of environmental ceiling preemption issues, such as state regulation of GHG emissions, requires careful consideration of the reasons for federal regulation and that collective action principles provide important insights to enrich this consideration. In Part I of this Article, we develop our framework for considering these issues, us-

²² For further discussion of this issue, see *infra* Part II.C.

²³ See GLICKSMAN ET AL., *supra* note 14, at 562–63. The Kyoto Protocol is an international treaty in which most of the world's industrialized nations agreed to reduce emissions of gases that contribute to global climate change. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 37 I.L.M. 22 (1998), available at http://unfccc.int/essential_background/kyoto_protocol/items/1678.php.

²⁴ 127 S. Ct. 1438 (2007).

²⁵ The *Massachusetts* case is discussed *infra* notes 155–63 and accompanying text.

²⁶ Although the *Massachusetts* case did not directly present the question whether federal law currently preempts state law or would do so if federal regulatory programs were adopted, the decision has some bearing on the preemption question, particularly as to whether GHG emissions restrictions are preempted by federal regulation of fuel economy standards. See *infra* notes 256–57 and accompanying text.

²⁷ See Glicksman, *supra* note 13, at 781–86. See generally Kirsten H. Engel, *Mitigating Global Climate Change in the United States: A Regional Approach*, 14 N.Y.U. ENVTL. L.J. 54 (2005) (describing “the aggregation of state or local government responses to climate change through regional cooperation”).

²⁸ See *Cent. Valley Chrysler-Jeep, Inc. v. Goldstene*, 529 F. Supp. 2d 1151, 1189 (E.D. Cal. 2007) (granting summary judgment against the industry on preemption claims); *Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 2d 295 (D. Vt. 2007) (ruling against industry's preemption claims after trial).

ing traditional preemption doctrine and collective action theory. In Part II, we apply the framework to the regulation of greenhouse gases in response to global climate change, demonstrating that the framework is a powerful tool for analyzing the policy and legal issues surrounding preemption.

I. A FRAMEWORK FOR ANALYZING ENVIRONMENTAL CEILING PREEMPTION

Our preemption framework begins with traditional preemption doctrine, from which we derive two foundational premises: (1) the purposes of federal regulation are the touchstone for preemption analysis; and (2) there should be a strong presumption against preemption, in the sense of displacement of state authority. Starting with these premises, the critical question is whether, in a particular case, the purposes of federal environmental law provide a sufficiently strong justification to overcome the presumption. To facilitate analysis of that question, we then consider the purposes of federal environmental regulation from a collective action perspective. From this perspective, the relevant federal purposes for preemption analysis are those that reflect collective action problems that distort state regulatory incentives so as to justify federal displacement of state regulatory authority. Finally, we consider which federal environmental purposes might justify ceiling preemption.

A. Preemption Doctrine

It is well known that under the Supremacy Clause of the United States Constitution, federal law is the “supreme Law of the Land.”²⁹ Thus, state laws that “retard, impede, burden, or in any manner control[] the operations” of federal law are invalid.³⁰ We think it is important, however, to distinguish the operation of the Supremacy Clause to resolve specific conflicts that may arise between state and federal law from the broader preemption of state regulatory authority in a given area. To borrow Thomas Merrill’s terminology, in the former instance federal law “trumps” the conflicting state law, while in the latter, federal law “displaces” state authority to regulate.³¹ It is the displacement of state authority that concerns us here.

1. Preemption and Purposes.—The Supreme Court has constructed a well-established doctrinal approach to preemption.³² Under this doctrine,

²⁹ U.S. CONST. art. VI, cl. 2.

³⁰ *McCulloch v. Maryland*, 17 U.S. (4 Wheat.) 316, 436 (1819).

³¹ Thomas W. Merrill, *Preemption and Institutional Choice*, 102 NW. U. L. REV. 727, 731 (2008).

³² *E.g.*, *Gade v. Nat’l Solid Wastes Mgmt. Ass’n*, 505 U.S. 88, 98 (1992) (plurality opinion); *Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm’n*, 461 U.S. 190, 203–04 (1983). For a useful summary of the doctrine, see ERWIN CHERMERINSKY, *CONSTITUTIONAL LAW, PRINCIPLES AND POLICIES* § 5.2 (3d ed. 2006). Although the current doctrine is not without its critics, *see, e.g.*, Viet D. Dinh, *Reassessing the Law of Preemption*, 88 GEO. L.J. 2085 (2000); Caleb Nelson, *Preemption*, 86 VA. L. REV. 225 (2000), the current doctrine appears to be relatively stable and we will take it as a given.

the Court distinguishes among three kinds of preemption: “express” preemption, occupation of the field by federal law (“field” or “complete” preemption), and preemption because of a conflict between federal and state law (“conflict” preemption). Field preemption and conflict preemption are often grouped together under the general rubric “implied” preemption. Ultimately, the underlying purpose of federal regulation is important for all three kinds of preemption.³³

As the name suggests, express preemption arises as a result of the explicit language of a federal statute. Assuming that the federal law is valid, its preemptive effect is clear and controlled by the scope of the express provision.³⁴ Express preemption provisions usually create a negative inference that state laws falling outside the scope of the provisions are valid,³⁵ although such an inference is not inevitable.³⁶ Thus, the principal questions in

³³ There remains considerable debate within the Court regarding how to determine legislative purposes. See generally John F. Manning, *Textualism and the Equity of the Statute*, 101 COLUM. L. REV. 1 (2001) (discussing debate within the Supreme Court over the proper approach to statutory construction). For “textualists” like Justices Scalia and Thomas, the purposes of federal legislation should be determined solely on the basis of statutory text (either through an explicit statement of purposes or inferences from the language and structure of the statute). Other members of the Court, however, would also rely on legislative history to ascertain congressional purposes. This debate is directly relevant to how purposes are identified but not to their implications for the analysis of preemption, even if textualists might be inclined to focus more heavily on other kinds of inferences from statutory text. See *Crosby v. Nat’l Foreign Trade Council*, 530 U.S. 363, 388–91 (2000) (Scalia, J., joined by Thomas, J., concurring) (criticizing the majority’s reliance on legislative history and finding the intent of Congress to preempt state law to be “perfectly obvious on the face of the statute”); *Wis. Pub. Intervenor v. Mortier*, 501 U.S. 597, 616–23 (1991) (Scalia, J., concurring) (criticizing majority’s recourse to and characterization of legislative history in concluding that FIFRA did not preempt local regulation of pesticides, but reaching the same result based upon the language and structure of the Act). In the context of this Article, we take no position on this debate or on how the statutory purposes relevant to preemption should be identified.

³⁴ One might conceive of a circumstance under which Congress has the authority to enact the underlying statute, but the inclusion of a preemption provision would be excessive or unrelated to the statutory purpose, or would impinge to such an extent on state sovereignty that it would not be “necessary and proper” to a law within the enumerated powers of Congress. But we are not aware of any cases in which the Court has suggested that “unnecessary” or “improper” preemption might be invalid or has struck down preemption provisions on such grounds. Avoiding unnecessary or excessive intrusions on state regulatory authority is the principal justification for the presumption against preemption, however. See *infra* notes 47–49 and accompanying text.

³⁵ E.g., *Cipollone v. Liggett Group, Inc.*, 505 U.S. 504, 517 (1992) (“Congress’ enactment of a provision defining the pre-emptive reach of a statute implies that matters beyond that reach are not pre-empted.”). A similar inference arises in the reverse situation of a statute containing an express savings provision stating that certain state laws are not preempted. In such cases, the negative inference arises that state laws that do not fall within the savings clause are preempted. See *Gade*, 505 U.S. 88; cf. *New Mexico v. Gen. Elec. Co.*, 467 F.3d 1223, 1247 (10th Cir. 2006) (holding that CERCLA’s “comprehensive” liability scheme for natural resource damages preempts state remedies designed to achieve something other than the restoration, replacement, or acquisition of a contaminated natural resource, notwithstanding CERCLA’s savings clauses, because there is no evidence that Congress intended to undermine CERCLA’s carefully crafted liability scheme through the savings clauses).

³⁶ Congress might expressly preempt some laws in order to remove doubt, without necessarily intending to save other state laws, leaving other preemption questions to be resolved by traditional doctrine. For example, a state law outside the scope of the preemption provision might nonetheless conflict

express preemption cases are the scope of the preemption provision and whether the state law falls within that scope.³⁷ The scope of the preemption provision presents an interpretive question that may be resolved using the traditional tools of statutory construction.³⁸ The purposes of the federal legislation are potentially relevant to the congressional decisions concerning whether and what kinds of state laws to preempt and to the judicial determination whether, in the case of an ambiguous preemption provision, a particular state or local law should be preempted because it is likely to thwart congressional goals.³⁹

Field preemption is a form of implied preemption under which federal law completely displaces any state law in a given area—even if there is no apparent inconsistency between federal and state law. The idea is that federal law so completely occupies the field that there is no room for any state involvement; in effect, federal law is the exclusive law in that field. Under the standard formulation, field preemption arises:

[1] if a scheme of federal regulation is “so pervasive as to make reasonable the inference that Congress left no room for the States to supplement it,” [2] if “the Act of Congress . . . touch[es] a field in which the federal interest is so dominant that the federal system will be assumed to preclude enforcement of

with federal law. *See, e.g.*, *Sprietsma v. Mercury Marine*, 537 U.S. 51, 64 (2002) (recognizing the validity of a theory that state law that is not expressly preempted might nevertheless be preempted by the entire statute); *Geier v. Am. Honda Motor Co.*, 529 U.S. 861, 869 (2000) (stating that the presence of either a savings clause or an express preemption provision “does *not* bar the ordinary working of conflict pre-emption principles,” such as implicit conflict preemption); *cf. Landgraf v. USI Film Prods.*, 511 U.S. 244 (1994) (refusing to draw a negative inference from an express retroactivity provision and resolving the remaining retroactivity issue through judicial retroactivity doctrine).

³⁷ *See, e.g.*, *Cipollone*, 505 U.S. at 520–31 (plurality opinion) (concluding that some, but not all, state common law tort claims against cigarette manufacturers fell within the scope of an express preemption provision). The analysis in such cases focuses in the first instance on the statutory text, a focus that is shared in cases like *Gade* in which preemption arises by negative implication from a savings clause and the focus is the scope of that clause. For that reason, it might make sense to group express preemption and *Gade*-type cases together under the rubric “textual” preemption.

³⁸ As noted previously, *see supra* note 33, in this sense federal preemption issues are part and parcel of a larger debate between textualist and intentionalist schools of statutory construction. The implications of textualism for the presumption against preemption are discussed *infra* notes 53–56 and accompanying text.

³⁹ *See, e.g.*, *Cal. Div. of Labor Standards Enforcement v. Dillingham Constr., N.A., Inc.*, 519 U.S. 316, 325 (1997) (stating that in determining whether a state law is preempted under ERISA’s express preemption provision, the Court will look to “‘the objectives of the ERISA statute as a guide to the scope of the state law that Congress understood would survive,’ as well as to the nature of the effect of the state law on ERISA plans” (citation omitted) (quoting *N.Y. State Conference of Blue Cross & Blue Shield Plans v. Travelers Ins. Co.*, 514 U.S. 645, 656 (1995))). It is worth noting that Justice Thomas—a strict textualist—quoted this language with approval in *Egelhoff v. Egelhoff ex rel. Breiner*, 532 U.S. 141, 147 (2001), reinforcing the conclusion that statutory purposes are relevant to the scope of express preemption provisions even for the textualists on the Court.

state laws on the same subject,” or [3] if the goals “sought to be obtained” and the “obligations imposed” reveal a purpose to preclude state authority.⁴⁰

Once it has been determined that federal regulation occupies the field, the question still remains whether the state law falls within that field.⁴¹ This determination depends on the federal legislative purpose as well, particularly in determining the scope of the occupied field.

The final category of preemption, conflict preemption, arises in two ways. The first is when it is impossible to comply with both federal and state law. Impossibility of compliance is relatively rare, but when it is present, preemption is clear. It is important to note that the existence of state standards that differ from federal standards does not always implicate impossibility of compliance, if the regulated party can physically comply with both standards.⁴² The second type of conflict preemption occurs when state law is an obstacle to the object and purpose of the federal law.⁴³ While some conflicts of this kind involve the kind of specific and direct conflict under which federal law “trumps” state law,⁴⁴ this type of conflict preemption is potentially applicable to a broad range of situations and may displace a large field of state regulatory authority.⁴⁵ Again, in the absence of a clear

⁴⁰ Wis. Pub. Intervenor v. Mortier, 501 U.S. 597, 605 (1991) (quoting Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947)) (bracketed numbers added).

⁴¹ See, e.g., Silkwood v. Kerr-McGee Corp., 464 U.S. 238, 256 (1984) (concluding that state common law tort actions were not within the field occupied by federal safety regulation of nuclear power plants); Pac. Gas & Elec. v. State Energy Res. Conservation & Dev. Comm’n, 461 U.S. 190 (1983) (holding that an economically based moratorium on nuclear power plants was not within the field occupied by federal regulation of nuclear power plant safety). The determination whether state law falls within the scope of a preempted field resembles the determination whether state law falls within the scope of an express preemption provision. See *supra* note 37 and accompanying text.

⁴² Thus, for example, if both the federal and state statutes impose emissions limitations (but do not dictate the method of compliance) and the state limitations are more stringent than the federal ones, it is not impossible to comply with the federal standard because a party who complies with the state standard is also necessarily in compliance with the federal standard. Even if federal and state law require the use of two different kinds of emissions control, it may be physically possible to comply by using both. Impossibility of compliance is therefore rarely implicated in environmental ceiling preemption cases.

⁴³ E.g., Hines v. Davidowitz, 312 U.S. 52, 67 (1941) (inquiring whether state law “stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress”).

⁴⁴ Consider, for example, the state taxation of a national bank at issue in *McCulloch v. Maryland*, 17 U.S. (4 Wheat.) 316 (1819). See *infra* notes 62–64 and accompanying text (discussing the implications of the Court’s reasoning for analysis of preemption issues). Unless federal law prohibits the payment of such a tax, it is possible for the bank to comply with state law by paying the tax. Nonetheless, there is a sufficiently clear and direct impairment of the bank to “trump” the imposition of the tax.

⁴⁵ If pushed hard enough, field and conflict preemption tend to merge because the doctrine reflects overlapping considerations of purpose. Field preemption considers whether congressional goals reveal an intent to occupy the field, and conflict preemption may arise if state regulation is an obstacle to the accomplishment of the federal purpose. If, for example, there is a congressional purpose to carefully balance environmental gains and regulatory burdens and more restrictive state regulation would upset that balance, it could be argued that the goal of balancing supports both field preemption, because it reveals a purpose to preclude state authority, and conflict preemption, because state regulation would upset the federal balance and thus be an obstacle to the accomplishment of the federal purpose. In using

and unmistakable conflict, this sort of preemption depends on the purposes of federal environmental regulation.

In sum, the purposes of federal regulation are implicated in all three categories of preemption. In express preemption, purposes are relevant to the congressional determination of whether and to what extent state authority should be preempted and to the judicial construction of the scope of ambiguous express preemption provisions. For field preemption, the purposes of federal regulation are relevant to determining whether the field has been occupied and defining the scope of that field. Finally, the displacement of state authority in cases of conflict preemption depends upon a determination that state regulation stands as an obstacle to the accomplishment of federal purposes.

2. *The Preemption Presumption.*—The Court has often stated that there is a presumption against preemption, but its scope and force are not entirely clear.⁴⁶ The presumption against preemption is based principally on federalism concerns, but we think that those federalism principles are reinforced by principles of textualism in statutory construction. Taken together, we believe that these principles justify a strong presumption against preemption—at least in the context of displacement of state power on the basis of implied preemption.

An essential principle of federalism is that states retain broad sovereign authority to regulate for the well-being of their people, even if the Constitution contemplates that state power will be restricted in some ways and that federal law will be supreme in cases of conflict.⁴⁷ Displacement of this state authority is strong medicine and should not be undertaken lightly. When Congress displaces state regulatory authority it should have powerful and carefully considered justifications for doing so. By the same token, courts should not lightly infer a congressional intent to displace state regulatory authority. These principles underlie the presumption against preemption.

The presumption against preemption can be understood as a drafting principle or as a quasi-constitutional clear statement requirement. As a drafting principle, the presumption is a default rule for ambiguous statutes premised on the assumption that because Congress respects federalism, it

this example, we do not mean to suggest that either argument would or should be successful in any particular case. See *infra* Part II.C.

⁴⁶ See generally CHRISTOPHER R. DRAHOZAL, *THE SUPREMACY CLAUSE: A REFERENCE GUIDE TO THE UNITED STATES CONSTITUTION* 111–15 (2004) (discussing the presumption); K.K. DuVivier, *State Ballot Initiatives in the Federal Preemption Equation: A Medical Marijuana Case Study*, 40 WAKE FOREST L. REV. 221, 266 n.261 (2006) (noting “the Court’s inconsistent application of the presumption against preemption”). For statistical analysis of trends in Supreme Court preemption decisions, see David M. O’Brien, *The Supreme Court and Intergovernmental Relations: What Happened to “Our Federalism”?*, 9 J.L. & POL. 609 (1993).

⁴⁷ See, e.g., *Alden v. Maine*, 527 U.S. 706, 748 (1999) (“Although the Constitution grants broad powers to Congress, our federalism requires that Congress treat the States in a manner consistent with their status as residuary sovereigns and joint participants in the governance of the Nation.”).

does not ordinarily want to preempt state law.⁴⁸ As a quasi-constitutional doctrine, the presumption reflects the “underenforced” constitutional norm of federalism that justifies reading ambiguous statutes to avoid unnecessary intrusions on traditional areas of state sovereignty.⁴⁹

We also believe that there are powerful textualist arguments that support a strong presumption against implied displacement of state authority. Congress has the authority to expressly preempt state law, and its failure to do so is significant.⁵⁰ Reading a statute to displace state regulatory authority in the absence of a textual provision based on general statutory purposes is precisely the sort of interpretive methodology that textualists criticize. Indeed, it is plausible to argue that there should be no such thing as implied preemption in the sense of displacing state authority.⁵¹

Taken together, federalism and textualism suggest an institutional justification for the presumption against preemption. By insisting on explicit language to displace state regulatory authority, textualism reinforces legislative deliberations. It ensures that Congress makes a conscious choice to displace state regulatory authority, a choice that has been approved through the constitutional process of bicameralism and presentment. This ensures in turn that the political safeguards of federalism are operative.⁵²

Given its movement toward textualism in other areas, the Court’s ongoing reliance on implied preemption doctrine is in some respects remarkable. Consider, by way of analogy, the issue of implied private rights of action.⁵³ Courts in the 1960s and 1970s were quite willing to further the

⁴⁸ See, e.g., ANTONIN SCALIA, *A MATTER OF INTERPRETATION: FEDERAL COURTS AND THE LAW* 29 (1997); Einer Elhauge, *Preference-Estimating Statutory Default Rules*, 102 COLUM. L. REV. 2027 (2002).

⁴⁹ See generally Lawrence Gene Sager, *Fair Measure: The Legal Status of Underenforced Constitutional Norms*, 91 HARV. L. REV. 1212 (1978).

⁵⁰ In this regard, the distinction between trumping state law and displacing state authority is important. Congress cannot anticipate every possible state law that might conflict with a federal statute. If there is a specific conflict between federal and state law, the Supremacy Clause mandates that federal law controls, whether or not Congress specifically considered and expressly preempted such laws. Displacement of state authority, however, is a more fundamental and far-reaching decision that should be carefully considered and approved by Congress.

⁵¹ See Daniel J. Meltzer, *The Supreme Court’s Judicial Passivity*, 2002 SUP. CT. REV. 343, 364–68 (highlighting recent implied preemption cases that are inconsistent with the rise of textualism in statutory interpretation); Paul S. Weiland, Comment, *Federal and State Preemption of Environmental Law: A Critical Analysis*, 24 HARV. ENVTL. L. REV. 237, 284–85 (2000) (discussing a “limited preemption” model under which implied preemption would not be recognized).

⁵² See *Gregory v. Ashcroft*, 501 U.S. 452, 464 (1991). There is, of course, considerable debate over the extent to which the political safeguards of federalism are effective in protecting state interests. See, e.g., Larry D. Kramer, *Putting the Politics Back into the Political Safeguards of Federalism*, 100 COLUM. L. REV. 215 (2000). Nonetheless, the representative structure of Congress is the constitutionally designed mechanism for protecting the interests of states in the political process.

⁵³ The analogy is apt because both implied preemption and implied rights of action rely on legislative purposes to expand the scope and effect of a statute beyond its explicit text, thus achieving through judicial interpretation a result for which Congress could have provided expressly but did not.

purposes of federal regulatory statutes by interpreting them to create a private right of action, even though the statutes themselves did not expressly provide one.⁵⁴ Over time, emphasizing the text of the statutes and the institutional responsibilities of the courts and Congress, the Court reversed course and adopted a test so difficult that it is virtually impossible to establish an implied private right of action.⁵⁵ By the same token, one might argue that implied preemption, in the sense of displacement of state regulatory authority, should be extremely rare.⁵⁶

In any event, our framework proceeds on the assumption that there is a strong presumption against implied displacement of state regulatory authority that can only be overcome when the statutory language is clear or when clearly articulated statutory purposes would be significantly impaired by state regulatory activity. Given this perspective, the question becomes what kinds of purposes justify ceiling preemption in the environmental context. We address this question in the following two Sections.

B. The Purposes of Federal Regulation

In this Section, we consider the justifications for federal environmental regulation, using collective action theory to illuminate the analysis. In the broadest terms, a constitutional government is a structure designed to facilitate collective action by overcoming transaction costs and other barriers.⁵⁷ Power is delegated to politically accountable governmental bodies that make policy decisions on behalf of the collective. These regulatory deci-

⁵⁴ See, e.g., *J.I. Case Co. v. Borak*, 377 U.S. 426 (1964).

⁵⁵ *Cort v. Ash*, 422 U.S. 66, 78 (1975) (“First, . . . does the statute create a federal right in favor of the plaintiff? Second, is there any indication of legislative intent, explicit or implicit, either to create such a remedy or to deny one? Third, is it consistent with the underlying purposes of the legislative scheme to imply such a remedy for the plaintiff? And finally, is the cause of action one traditionally relegated to state law, in an area basically the concern of the States, so that it would be inappropriate to infer a cause of action based solely on federal law?” (citations omitted)). For cases finding no implied right of action based on application of the *Cort* test, see, for example, *Middlesex County Sewerage Authority v. National Sea Clammers Ass’n*, 453 U.S. 1, 10–18 (1981), and *California v. Sierra Club*, 451 U.S. 287, 293 (1981).

⁵⁶ One difference between implied rights of action and preemption is that the decision to create a private right of action is one that can be made at the time a statute is adopted, while Congress cannot be expected to anticipate every possible conflicting state law that might be adopted. That is why it is important to distinguish the displacement of state authority from the operation of the Supremacy Clause to trump state laws where there is a clear and direct conflict. Federal law trumps conflicting state law whether or not Congress anticipates the conflict and provides for it explicitly in a statute. This kind of conflict, in which federal law trumps state law, is broader than the impossibility of compliance strand of conflict preemption. See *supra* note 44 and accompanying text. The displacement of broad swaths of state authority, however, arguably should occur only when explicitly approved by the legislative process.

⁵⁷ See, e.g., LEVY, *supra* note 1, at 85.

sions involve an analysis of the costs and benefits to the collective of a proposed regulatory policy.⁵⁸

In our federal system, regulatory decisions can be made at the state or national level.⁵⁹ Because state governments are more directly accountable and more familiar with regional conditions, they are generally in a better position than the federal government to make policy judgments for their constituencies.⁶⁰ Federal power is most appropriate when the cost-benefit analysis of state policymakers is distorted by collective action problems.⁶¹ This general point is well illustrated by the reasoning of *McCulloch v. Maryland*.⁶² Although *McCulloch* is most famous for its recognition of implied federal legislative authority and its broad reading of the Necessary and Proper Clause,⁶³ it is also a foundational decision for federal preemption. After upholding the power of Congress to charter a national bank, the Court held that the Supremacy Clause prevented the states from taxing the bank. Chief Justice Marshall's opinion for the Court reasoned in part that states could not be trusted to tax federal entities because the benefits of such a tax would fall to the taxing state exclusively, but the burdens would fall upon all the states.⁶⁴

⁵⁸ This statement is not intended as an endorsement of strict cost-benefit analysis, which has come under considerable criticism, as the exclusive test for sound regulatory programs, but rather as reflecting the intuitive balancing typically engaged in by policymakers. For a critical examination of cost-benefit analysis, see ACKERMAN & HEINZERLING, *supra* note 8.

⁵⁹ States, of course, also have smaller local governmental units, such as counties and cities.

⁶⁰ See LEVY, *supra* note 1, at 88–89. This is the main justification for the so-called “subsidiarity” principles of European Union Law and any United States counterpart that might be thought to exist. See generally Jared Bayer, *Re-Balancing State and Federal Power: Toward a Political Principle of Subsidiarity in the United States*, 53 AM. U. L. REV. 1421 (2004); George A. Bermann, *Taking Subsidiarity Seriously: Federalism in the European Community and the United States*, 94 COLUM. L. REV. 331 (1994); James L. Huffman, *Making Environmental Regulation More Adaptive Through Decentralization: The Case for Subsidiarity*, 52 U. KAN. L. REV. 1377 (2004). Of course, there are reasons to be skeptical about the ways in which political campaigns and lobbying may distort the political process, but these forces operate at all levels of government, including the federal level.

⁶¹ See generally Levy, *supra* note 1, at 1268–70 (discussing the implications of collective action theory for the scope of federal power); see also Kirsten H. Engel & Scott R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 ECOLOGY L.Q. 183, 191–94 (2005) (discussing the economics-derived “matching principle” for identifying the appropriate level of government to respond to a particular environmental problem).

⁶² 17 U.S. (4 Wheat.) 316, 435–36 (1819).

⁶³ See generally LEVY, *supra* note 1, at 20–26 (discussing *McCulloch* and its interpretation of the Necessary and Proper Clause).

⁶⁴ *McCulloch*, 17 U.S. at 435–36 (“The people of all the States have created the general government, and have conferred upon it the general power of taxation. The people of all the States, and the States themselves, are represented in Congress, and, by their representatives, exercise this power. When they tax the chartered institutions of the States, they tax their constituents; and these taxes must be uniform. But, when a State taxes the operations of the government of the United States, it acts upon institutions created, not by their own constituents, but by people over whom they claim no control. It acts upon the measures of a government created by others as well as themselves, for the benefit of others in common with themselves. The difference is that which always exists, and always must exist, between

This reasoning, which gave rise to the “political process” school of constitutional analysis,⁶⁵ is essentially an economic argument based on collective action principles. Individual states, acting on their own, have the incentive to tax collective entities excessively because they reap the benefit of the tax while spreading the burden to other states.⁶⁶ Marshall’s analysis in *McCulloch* implies that federal power in general, and displacement of state authority in particular, is most justified when collective action problems would lead individual states to act in ways that are contrary to the interests of the states as a collective.

In this Section, we apply this collective action perspective to environmental regulation. In the broadest sense, the purpose of environmental regulation is to combat the so-called tragedy of the commons, a collective action problem that causes shared resources to be overutilized.⁶⁷ The tragedy of the commons explains why environmental regulation may be necessary, but the question for federalism purposes is whether that regulation is best undertaken at the federal or state (or even local) level. Under *McCulloch*’s analysis, federal environmental regulation is most justified when collective action problems create incentives for states acting individually to regulate in ways that are contrary to the interests of the states as a collective. Thus, it is not surprising that the traditional justifications for federal environmental regulation reflect commonly understood collective action problems, including negative environmental externalities, resource pooling,

the action of the whole on a part, and the action of a part on the whole—between the laws of a government declared to be supreme, and those of a government which, when in opposition to those laws, is not supreme.”).

⁶⁵ See, e.g., JOHN HART ELY, *DEMOCRACY AND DISTRUST: A THEORY OF JUDICIAL REVIEW* (1980) (arguing that judicial intervention is appropriate to correct political process failures and to protect and reinforce democratic processes).

⁶⁶ The situation is a form of the “prisoner’s dilemma” scenario as discussed in game theory: Each state has the incentive to tax the federal entity, whether or not other states do the same, even though a better result for the states as a collective would be to refrain from taxing the bank. See generally DOUGLAS G. BAIRD ET AL., *GAME THEORY AND THE LAW* 33 (1994). In the prisoner’s dilemma scenario, game theorists posit two prisoners, each of whom must decide whether to confess and implicate the other in a joint crime, or to remain silent, with the length of their expected sentences dependent on their own choice and that of the other. The expected sentences are such that each individual prisoner has the incentive to cut a deal by confessing and implicating the other, but the best result from the perspective of the two, taken together, is to remain silent.

⁶⁷ This includes pollution, insofar as pollution-causing activities involve overutilization of a commons—clean air and water. See, e.g., RICHARD N.L. ANDREWS, *MANAGING THE ENVIRONMENT, MANAGING OURSELVES: A HISTORY OF AMERICAN ENVIRONMENTAL POLICY* 2–3 (1999) (arguing that “government involvement in environmental issues is both necessary and inevitable,” *inter alia*, to protect environmental assets from “tragedies of the commons” and to assign and enforce property rights to eliminate commons resources and create use rights and protection duties); GLICKSMAN ET AL., *supra* note 14, at 8–9 (“The commons dilemma is often argued to provide the basis for severe government restrictions on the use of natural sinks for waste disposal or ecosystems for commodity production.”). For the classic description of the commons problem, see Garrett Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243, 1244 (1968).

the “race to the bottom,” uniform standards, and the “NIMBY” (not in my back yard) phenomenon.

I. Negative Externalities.—The most obvious and broadly accepted justification for federal environmental regulation is that state and local governments can externalize (or allow private entities operating within their jurisdiction to externalize) environmental harms,⁶⁸ particularly air and water pollution. Air and water pollution move downwind or downstream across political boundaries.⁶⁹ Thus, state and local governments in upwind and upstream states may enjoy the economic and tax benefits of pollution-causing activities while exporting the burdens to other states, creating incentives to permit pollution-causing activities that result in a net loss to the United States as a whole.⁷⁰

Some of the earliest federal pollution control programs responded to these kinds of interstate air and water pollution externalities.⁷¹ Congress justified its decision to authorize federal regulation of activities that contribute to interstate pollution by referring to the need for federal intervention in the face of state failures to take effective abatement actions.⁷² A House report on an early piece of air pollution legislation stated, for example, that “many aspects of the air pollution problem are—and will remain—inherently beyond the reach of State and local agencies,” including interstate air pollution.⁷³ A House report on the 1977 amendments to the Clean

⁶⁸ Externalities are spillover costs imposed on persons other than those who produce them and therefore not taken into account by those who produce them. Governmental regulation is one way to force those who impose spillover costs to internalize them. *See, e.g.*, SHAPIRO & TOMAIN, *supra* note 9, at 53–54.

⁶⁹ *See* GLICKSMAN ET AL., *supra* note 14, at 85 (“Perhaps the most widely accepted rationale for federal over state environmental standard setting is pollution externalities that move interstate.”); Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1215 (1977) (discussing how interstate “spillover[s] . . . generate conflicts and welfare losses not easily remedied under a decentralized regime”). *See generally* Thomas W. Merrill, *Golden Rules for Transboundary Pollution*, 46 DUKE L.J. 931 (1997); Richard L. Revesz, *Federalism and Interstate Environmental Externalities*, 144 U. PA. L. REV. 2341 (1996).

⁷⁰ While downstream or downwind states have a corresponding incentive to overregulate pollution causing activities in upstream or upwind states, they lack the legal authority to do so. *See infra* notes 117–18 and accompanying text.

⁷¹ *See, e.g.*, Water Quality Act of 1965, Pub. L. No. 89-234, 79 Stat. 903 (1965); H.R. REP. NO. 90-728, at 9 (1967), *reprinted in* 1967 U.S.C.C.A.N. 1938, 1944 (“The Clean Air Act of 1963 marked the beginning of a new and much more hopeful era in air pollution control. . . [that f]or the first time [provided] authority . . . for Federal regulatory action to abate interstate air pollution problems.”); Robert V. Percival, *Environmental Federalism: Historical Roots and Contemporary Models*, 54 MD. L. REV. 1141, 1157 (1995) (describing 1963 federal legislation, an early version of the Clean Air Act, that was directed at interstate air pollution).

⁷² *See, e.g.*, H.R. REP. NO. 90-728, at 12 (1967), *reprinted in* 1967 U.S.C.C.A.N. 1938, 1947 (explaining that if “a State fails to take appropriate action, the Department [of Health, Education, and Welfare] is empowered under the bill to take the necessary action to protect health and welfare expected of the State, particularly where interstate pollution is involved”).

⁷³ H.R. REP. NO. 89-2170, at 4 (1966), *reprinted in* 1966 U.S.C.C.A.N. 3473, 3476.

Air Act made the point even more clearly: “[A]ir pollution does not confine itself to State boundaries. Therefore, if one State wants cleaner air and its neighboring State wants to permit more pollution which would prevent the first State from achieving its objectives, some Federal policy is necessary to resolve interstate disputes.”⁷⁴

2. *Resource Pooling.*—One advantage of collective action is the pooling of resources, which can be especially advantageous to the collective if there are economies of scale or synergistic effects. In the context of federalism, the pooling of resources to provide a common defense or improve bargaining power in international relations is a well-accepted premise for federal authority.⁷⁵ The advantages of resource pooling are a quintessential “public good,” which in collective action terms creates an incentive for each state to free ride on the efforts of others.⁷⁶ As a structural response to such incentives, the federal government represents the pooled resources of the states and thus has resources superior to those of the individual states. The superiority of federal resources has often been cited as a reason for federal environmental regulation.⁷⁷

⁷⁴ H.R. REP. NO. 95-294, at 151 (1977), *reprinted in* 1977 U.S.C.C.A.N. 1077, 1230; *see also id.* at 329–30, *reprinted in* 1977 U.S.C.C.A.N. at 1408–09 (citing the inadequacy of existing mechanisms for dealing with interstate air pollution problems to justify enhancement of federal regulatory authority); *Solid Waste Agency of N. Cook County v. U.S. Army Corps of Eng’rs*, 531 U.S. 159, 195 (2001) (Stevens, J., dissenting) (objecting to the majority’s narrow reading of the Clean Water Act’s dredge and fill permit program because “[t]he destruction of aquatic migratory bird habitat, like so many other environmental problems, is an action in which the benefits (e.g., a new landfill) are disproportionately local, while many of the costs (e.g., fewer migratory birds) are widely dispersed and often borne by citizens living in other States,” and “[i]n such situations, described by economists as involving ‘externalities,’ federal regulation is both appropriate and necessary”); *cf.* Water Pollution Control Act Amendments of 1956, H.R. REP. NO. 84-1446, at 2 (1955), *reprinted in* 1955 U.S.C.C.A.N. 3023, 3024 (“Regulatory authority at the Federal level should be limited to interstate pollution problems and used on a standby basis only for serious situations which are not resolved through State and interstate collaboration.”).

⁷⁵ In the international relations field, this rationale has often translated into a particularly strong tendency to find preemption, and perhaps a presumption in favor of preemption. *See* *Am. Ins. Ass’n v. Garamendi*, 539 U.S. 396 (2003) (holding that California law designed to force foreign insurers to disclose records concerning insurance for Holocaust victims was impliedly preempted by presidential executive agreements); *Crosby v. Nat’l Foreign Trade Council*, 530 U.S. 363 (2000) (holding that Massachusetts law prohibiting state agencies from doing business with companies doing business with Burma (Myanmar) was preempted by federal law imposing sanctions on Burma).

⁷⁶ *See supra* note 1.

⁷⁷ According to one account:

Where effective regulation will require substantial investigation of technological capabilities, or links between pollutants and health impacts, or comprehensive assessment of diverse jurisdictions’ pollution control efforts, economies of scale will favor a federal role. Otherwise, no individual state will have incentives to gather these sorts of valuable information, and all states will be tempted to free ride on any state that makes such an investment. Federal leadership also reduces the risk of duplicative regulatory investigation. For this reason, federal gathering and creation of information about pollution impacts and pollution control has long been part of federal environmental laws.

GLICKSMAN ET AL., *supra* note 14, at 86; *cf.* Rena Steinzor & Margaret Clune, *Paper Tigers and Killer Air: How Weak Enforcement Leaves Communities Vulnerable to Smog* 9–11 (Ctr. for Progressive Re-

To some extent, this justification may be based on efficiencies in generating scientific and technical information or superior federal technical expertise.⁷⁸ Thus, for example, Congress has relied upon the federal government's superior resource base as a rationale for vesting federal agencies with responsibilities to gather and disseminate information needed to make regulatory decisions.⁷⁹ Indeed, some of the earliest federal legislative endeavors in the pollution control arena authorized federal research into the causes and effects of pollution or authorized federal technical and financial assistance to state regulators.⁸⁰ These advantages, however, only justify a federal role in generating information and disseminating it to the states and do not provide particularly powerful reasons for federal regulation on the basis of that information.⁸¹

The more powerful justification relates to superior enforcement resources, in which the advantages of resource pooling are conceptually related to cartelization and collective bargaining, and analogous to the arguments for federal authority in the field of military and foreign relations matters.⁸² One recent example in which the federal government's resource

form, Nov. 2006), available at http://www.progressivereform.org/articles/Air_Quality_Report.pdf (documenting that chronically underfunded states were not performing required inspections under the Clean Air Act).

⁷⁸ A similar phenomenon may apply with respect to lobbying activities, as to which resource pooling may permit interest groups to more effectively develop and transmit information through the lobbying process at the federal level. See generally JEFFREY M. BERRY, *THE INTEREST GROUP SOCIETY* 4–8 (1984) (discussing the roles of interest groups and lobbying). There are, of course, other factors at work, such as the relative ease or difficulty of lobbying multiple state and or local policymakers, as opposed to a single set of policymakers at the national level, which may be geographically remote. See, e.g., Glicksman & Chapman, *supra* note 7, at 21 (“[T]he proponents of regulation, such as public interest groups, may not have the resources to lobby successfully in fifty jurisdictions rather than one.”). These differences may mean that regulation at the state or federal level works to the benefit or detriment of lobbying by environmental or industry groups, depending on the circumstances.

⁷⁹ See, e.g., H.R. REP. NO. 89-2170, at 4 (1966), reprinted in 1966 U.S.C.C.A.N. 3473, 3476 (stating that among the other air pollution problems that are “inherently beyond the reach of State and local agencies” were “the various research and development problems that still remain to be solved” and that “[t]he Federal Government must be prepared to meet these increasing needs for assistance to State and local governments and action at the Federal level”); Federal Water Pollution Control Act Amendments of 1961, H.R. REP. NO. 87-306, at 5 (1961), reprinted in 1961 U.S.C.C.A.N. 2076, 2079 (“Research has always been recognized as a basic Federal water pollution control responsibility. The need for a much greater Federal research effort was consistently recognized during the hearings on the bill.”).

⁸⁰ See, e.g., An Act to Improve, Strengthen, and Accelerate Programs for the Prevention and Abatement of Air Pollution, Pub. L. No. 88-206, 77 Stat. 392 (1963); An Act to Provide Research and Technical Assistance Relating to Air Pollution Control, Pub. L. No. 84-159, 69 Stat. 322 (1955).

⁸¹ Further, superior federal expertise because of superior resources proves too much as an argument for federal as opposed to state regulation because it would apply to virtually every area of government activity. Cf. *United States v. Lopez*, 514 U.S. 549, 564 (1995) (rejecting argument that adverse effect on national productivity resulting from guns in schools provided a basis for federal regulation under the commerce power because that argument proved too much).

⁸² As will be discussed further below, see *infra* notes 187–231 and accompanying text, the international dimensions of global climate change have been an important argument in favor of ceiling preemp-

superiority has provided a rationale for federal regulatory implementation and enforcement relates to the Superfund law.⁸³ Individual states may not have adequate resources to conduct remediation of “mega-sites” contaminated with hazardous substances or to finance litigation to recover their cleanup costs.⁸⁴ The federal government is better equipped to do so.

3. *Race to the Bottom.*—Another rationale for federal environmental regulation is the so-called “race to the bottom.”⁸⁵ A race to the bottom assumes that competition for business and industry will create a prisoner’s dilemma in which states are driven to relax their environmental standards in order to gain the economic benefits and tax revenues that the business or industry brings. Individual states have the incentives to lower standards to compete for industry whether or not other states do the same,⁸⁶ even though the states as a collective would be better off not doing so. Some environmental law scholars have argued either that the race to the bottom is not an empirical reality or that interjurisdictional competition is a good thing because it tends to produce socially efficient outcomes.⁸⁷ Other academics

tion with respect to GHG emissions, but this aspect of resource pooling was not a significant factor in the adoption of major federal environmental laws.

⁸³ To take a dramatic illustration, a state like Kansas might lack resources to investigate or prosecute effectively a large multinational corporation like Exxon or DuPont, just as it would be relatively weak if acting alone when dealing with other countries diplomatically or confronting them militarily. The United States has the pooled resources of all the states and is in a much stronger position. *See generally* William W. Buzbee, *Brownfields, Environmental Federalism, and Institutional Determinism*, 21 WM. & MARY ENVTL. L. & POL’Y REV. 1, 50–51 & n.196 (1997) (discussing inadequacy of state resources to address hazardous substance contamination); Sam A. LeBlanc, III, *Federal Preemption Under CERCLA*, 1 TUL. ENVTL. L.J. 50, 54 (1988) (explaining the adoption of the Superfund law in part as the result of the recognition by “some of Congress’s leading conservatives as well as state officials . . . that the states were unwilling or, because of lack of resources, unable to solve the problem of polluted sites in a comprehensive, uniform and satisfactory way”).

⁸⁴ *See, e.g.,* Marla Cone, *When Superfund Expenses Go Mega*, L.A. TIMES, Jan. 26, 2007, at A1 (quoting Superfund expert who stated that “[s]tate programs can deal with garden-variety sites, but mega sites are ones that nobody but the federal government can deal with”).

⁸⁵ The race-to-the-bottom argument came to prominence as a critique of the influence of Delaware’s law of corporations, *e.g.,* William L. Cary, *Federalism and Corporate Law: Reflections upon Delaware*, 83 YALE L.J. 663 (1974), but it appeared earlier in Supreme Court decisions upholding portions of the Social Security Act, *e.g.,* *Helvering v. Davis*, 301 U.S. 619, 644 (1937) (reasoning that federal old age insurance was justified because “states and local governments are at times reluctant to increase so heavily the burden of taxation to be borne by their residents for fear of placing themselves in a position of economic disadvantage as compared with neighbors or competitors”); *Steward Mach. Co. v. Davis*, 301 U.S. 548, 588 (1937) (reasoning that federal unemployment compensation was necessary because “[m]any [states] held back through alarm lest in laying such a toll upon their industries, they would place themselves in a position of economic disadvantage as compared with neighbors or competitors”).

⁸⁶ If other states do not lower standards, an individual state is in a superior position to attract industry, while if other states do lower standards, then the state must lower its own standards in order to compete effectively.

⁸⁷ *See, e.g.,* Jonathan Adler, *Jurisdictional Mismatch in Environmental Federalism*, 14 N.Y.U. ENVTL. L.J. 130, 139 (2005) (“[C]laims that federal regulation is necessary to prevent a ‘race to the bottom’ are questionable on both theoretical and empirical grounds.”); Richard L. Revesz, *Rehabilitating*

have responded that the race to the bottom has been and remains a factor that provides obstacles to effective state environmental regulation.⁸⁸

Regardless of the academic debates, Congress has relied on the race to bottom as a rationale for federal action,⁸⁹ explicitly adverting to the fear that states would lower environmental standards to compete for industry as a justification for federal regulatory authority to control pollution. A House Report on the 1977 amendments to the Clean Air Act warned that “[i]f there is no Federal policy, States may find themselves forced into a bidding war to attract new industry by reducing pollution standards.”⁹⁰ In *Hodel v. Virginia Surface Mining and Reclamation Ass’n*,⁹¹ the Court endorsed this rationale for environmental regulation, characterizing the Surface Mining Control and Reclamation Act⁹² as a response “to a congressional finding that nationwide ‘surface mining and reclamation standards are essential in order to insure that competition in interstate commerce among sellers of coal produced in different States will not be used to undermine the ability of the several States to improve and maintain adequate standards on coal mining operations within their borders.’”⁹³

4. *Uniform Standards.*—A fourth justification for federal environmental regulation emphasizes the need for uniform standards. This rationale resonates with the original justifications for the federal commerce power, and the need for uniformity that is a critical factor in traditional

Interstate Competition: Rethinking the “Race to the Bottom” Rationale for Federal Environmental Regulation, 67 N.Y.U. L. REV. 1210 (1992); Richard L. Revesz, *The Race to the Bottom and Federal Environmental Regulation: A Response to Critics*, 82 MINN. L. REV. 535 (1997).

⁸⁸ See, e.g., Kirsten Engel, *State Environmental Standard-Setting: Is There a “Race” and Is It “to the Bottom”?*, 48 HASTINGS L.J. 271 (1997); Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570 (1996); Peter P. Swire, *The Race to Laxity and the Race to Undesirability: Explaining Failures in Competition Among Jurisdictions in Environmental Law*, 14 YALE L. & POL’Y REV. (SYMPOSIUM ISSUE) 67 (1996).

⁸⁹ See, e.g., H.R. REP. NO. 74-615, at 8 (1935); S. REP. NO. 74-628, at 11 (1935); *Steward Mach. Co.*, 301 U.S. at 588 (relating to the adoption of federal unemployment compensation legislation).

⁹⁰ H.R. REP. NO. 95-294, at 152 (1977), reprinted in 1977 U.S.C.C.A.N. 1077, 1231. The report continued: “This would result in the squandering of finite air resources, thereby limiting the potential for long-term economic growth. This clearly is contrary to the national interest.” *Id.*

⁹¹ 452 U.S. 264 (1981).

⁹² 30 U.S.C. §§ 1201–1328 (2000).

⁹³ *Hodel*, 452 U.S. at 281–82 (quoting 30 U.S.C. § 1201(g)). The Court added that “[t]he prevention of this sort of destructive interstate competition is a traditional role for congressional action under the Commerce Clause,” and found that the application of that rationale to the environmentally destructive effects of surface coal mining was a sufficient basis for invoking Congress’s authority to create a federal regulatory program under the authority vested in it by the Commerce Clause. *Id.* at 282; accord *Gibbs v. Babbitt*, 214 F.3d 483, 501 (4th Cir. 2000) (upholding the application of the Endangered Species Act (ESA) to a species located in one state); see also *Rancho Viejo, LLC v. Norton*, 323 F.3d 1062, 1069 n.7 (D.C. Cir. 2003).

dormant commerce clause and field preemption doctrines.⁹⁴ In economic terms, uniform standards reduce transaction costs for regulated entities such as product manufacturers and distributors, particularly for commodities in interstate commerce.⁹⁵ Although it is possible for states acting independently to develop uniform standards through harmonization of laws, it is very difficult and unusual for uniformity to be fully achieved.⁹⁶

Congress clearly enunciated the view that uniform federal pollution standards would reduce the transaction costs of regulated entities when it decided in the 1960s to regulate automotive emissions. A 1965 Senate committee report explained that federal regulation of automotive emissions was warranted because “it would be more desirable to have national standards rather than for each State to have a variation in standards and requirements which could result in chaos insofar as manufacturers, dealers, and users are concerned.”⁹⁷ Two years later, a House committee confirmed the need for uniform federal regulation of emissions controls, justifying its decision to prohibit the states from adopting their own controls on emissions from new motor vehicles or new motor vehicle engines by asserting that “a provision such as this is necessary in order to prevent a chaotic situation from developing in interstate commerce in new motor vehicles.”⁹⁸ The House committee rejected the suggestion that auto manufacturers would be able to meet any diverse standards that resulted from state regulation by manufacturing vehicles that comply with the most stringent controls on the ground that “this would lead to increased costs to consumers nationwide, with benefit only to those in one section of the country.”⁹⁹ Congress

⁹⁴ See *Cooley v. Bd. of Wardens*, 53 U.S. 299, 319 (1853) (“Whatever subjects of [the commerce] power are in their nature national, or admit only of one uniform system, or plan of regulation, may justly be said to be of such a nature as to require exclusive legislation by Congress.”).

⁹⁵ Kirsten Engel has noted that “[u]niform standards are of great benefit to industry, especially industries producing polluting products. Not only do they eliminate competition, but they free industries whose products have a national market from having to comply with fifty different standards as opposed to a single national standard.” Engel, *supra* note 88, at 369; cf. H. Geoffrey Moulton, Jr., *Federalism and Choice of Law in the Regulation of Legal Ethics*, 82 MINN. L. REV. 73, 142 (1997) (addressing, in a different regulatory context, “the broad and general claim that the predictability and reduced transaction costs afforded by uniform, nationally-imposed legal standards generally outweigh the benefits of federalism’s diversity”). In this sense, “uniformity” as a purpose for federal environmental regulation is more concerned with reducing regulatory burdens than improving the effectiveness of environmental regulation. See *infra* notes 288–99 and accompanying text (discussing uniformity and reduction of regulatory burdens as a basis for ceiling preemption in the global climate change context).

⁹⁶ The most notable example in the United States may well be the Uniform Commercial Code.

⁹⁷ S. REP. NO. 89-192, at 6 (1965).

⁹⁸ H.R. REP. NO. 90-728, at 8 (1967), *reprinted in* 1967 U.S.C.C.A.N. 1938, 1956.

⁹⁹ *Id.* at 22. In effect, the state imposing the highest standards can, to some degree, externalize the economic burdens of its environmental regulations onto other states, in much the same way that a tax on a federal entity externalizes its costs. See *infra* notes 115–18 and accompanying text (discussing the ability of states to externalize the economic burdens of regulation).

has relied on similar concerns to justify authorization of federal regulatory standards for other environmentally damaging activities.¹⁰⁰

5. *NIMBY*.—The NIMBY phenomenon arises when there is some undesirable but necessary activity or facility that must be located somewhere: people want one to exist, but “not in my back yard.” In the environmental arena, states typically want to avoid becoming the location of a necessary but environmentally damaging activity. In such cases, states may impose regulatory burdens intended to drive the activity into other states. This scenario is essentially the flipside of a negative externality problem because the source of a NIMBY problem is a positive externality—the state that is the location of the activity bears all or most of the environmental burdens, but the economic benefits are spread to other states.

Perhaps the best example of the adoption of federal environmental regulation as a response to the NIMBY problem concerns the location of radioactive waste disposal facilities. The efforts of both federal and state governments “to force hated facilities on terrified communities” spawned “a genuine political crisis—hundreds of battles have raged around the country, some dethroning elected officials, and some verging on violence.”¹⁰¹ Although the entire nation benefits from the production of nuclear power and the research and medical facilities that generate radioactive waste, few communities want to expose their citizens to the health risks that they would experience by living or working in proximity to a radioactive waste

¹⁰⁰ See, e.g., *Bates v. Dow Agrosciences LLC*, 544 U.S. 431, 452 (2005) (explaining that Congress decided to preempt state packaging and labeling requirements for pesticides that differ from those adopted by the EPA under FIFRA because “competing state labeling requirements . . . would create significant inefficiencies for manufacturers”); S. REP. NO. 101-449, at 2 (1990), *reprinted in* 1990 U.S.C.C.A.N. 4595, 4596 (stating that Congress sought “to preclude a multiplicity of State and local regulations and the potential for varying as well as conflicting regulations”). In *Gibbs v. Babbitt*, 214 F.3d 483, 502 (4th Cir. 2000), the court explained that “[a] desire for uniform standards also spurred enactment of the ESA.” The court quoted from the legislative history of the ESA: “[P]rotection of endangered species is not a matter that can be handled in the absence of coherent national and international policies: the results of a series of unconnected and disorganized policies and programs by various states might well be confusion compounded.” *Id.* (quoting H.R. REP. NO. 93-415, at 5 (1973)). The court refused to strike down the particular application of the ESA involved in that case because of its fear that leaving environmental regulation in general to the states “might well subject interstate companies to a welter of conflicting obligations. If Congress is constitutionally forbidden from even enacting uniform environmental rules, the confusion for interstate commercial enterprises might increase exponentially.” *Id.*

¹⁰¹ Michael B. Gerrard, *Fear and Loathing in the Siting of Hazardous and Radioactive Waste Facilities: A Comprehensive Approach to a Misperceived Crisis*, 68 TUL. L. REV. 1047, 1052 (1994); see also Barry G. Rabe et al., *NIMBY and Maybe: Conflict and Cooperation in Siting of Low-Level Radioactive Waste Disposal Facilities in the United States and Canada*, 24 ENVTL. L. 67, 69 (1994) (“Facility siting and management has been transformed from a fairly consensual area of environmental policy in the 1960s and 1970s to a conflict ridden area in more recent years. Time and time again, when either Canadian or American communities are confronted with the possibility of ‘hosting’ a new waste disposal or storage facility, the political reaction is immediate and intense. This reaction has blocked construction of any new facilities in either nation.”).

disposal site. By the late 1970s, only three states (South Carolina, Nevada, and Washington) operated low-level radioactive waste disposal sites, and officials in those states expressed frustration over the burdens placed on their states by being forced to accept low-level wastes generated throughout the nation.¹⁰² Because no other states volunteered to construct new sites, Congress decided that a federal solution was necessary; it adopted the Low-Level Radioactive Waste Policy Act of 1980 (LLRWPA)¹⁰³ to distribute the environmental burdens of waste disposal more equitably.¹⁰⁴ The strength of the NIMBY phenomenon is illustrated by the aftermath of *New York v. United States*,¹⁰⁵ which invalidated the most stringent enforcement provisions of LLRWPA, as states and local communities continue to struggle and litigate against hosting a site.¹⁰⁶

A similar pattern has manifested itself with respect to other kinds of facilities, including hazardous, solid, and biomedical waste management facilities,¹⁰⁷ and other kinds of potentially dangerous activities, such as hazardous waste transportation. Congress has often reacted by establishing federal standards or otherwise taking the power to exclude objectionable facilities out of the hands of state and local decisionmakers.¹⁰⁸ Despite the

¹⁰² See *New York v. United States*, 505 U.S. 144, 149–51 (1992) (discussing the operation of low-level radioactive waste facilities and legislation pertaining to them); Robert L. Glicksman, *Interstate Compacts for Low-Level Radioactive Waste Disposal: A Mechanism for Excluding Out-of-State Waste*, in *LOW-LEVEL RADIOACTIVE WASTE REGULATION: SCIENCE, POLITICS AND FEAR* 63 (Michael E. Burns ed., 1988). For analysis of *New York v. United States*, see generally Richard E. Levy, *New York v. United States: An Essay on the Uses and Misuses of Precedent, History, and Policy in Determining the Scope of Federal Power*, 41 U. KAN. L. REV. 493 (1993).

¹⁰³ 42 U.S.C. §§ 2021b–2021d (2000). The 1980 Act was amended in 1986. Low Level Radioactive Waste Policy Amendments Act of 1985, Pub. L. No. 99-240, 99 Stat. 1842 (1986).

¹⁰⁴ The LLRWPA declared that “[e]ach State is responsible for providing, either by itself or in cooperation with other states, for the disposal of low-level radioactive waste generated within the State.” 42 U.S.C. § 2021d(a)(1)(A); see also Low-Level Radioactive Waste Policy Amendments Act of 1985, H.R. REP. NO. 99-314, pt. 2, at 14 (1985), reprinted in 1985 U.S.C.C.A.N. 3002, 3002 (stating that Congress adopted the LLRWPA in 1980 “in order to lift the national burden of disposal from the three states with the only remaining commercial facilities”).

¹⁰⁵ 505 U.S. 144.

¹⁰⁶ E.g., *Entergy Arkansas, Inc. v. Nebraska*, 358 F.3d 528 (8th Cir. 2004) (holding that a state that was selected as the host state for a multistate compact’s disposal site was in breach of its good faith obligation under the compact by exhibiting a lack of diligence or cooperative effort in processing a license for the facility, willfully rendering imperfect performance, and denying the application without regard to its technical merits).

¹⁰⁷ See Rabe et al., *supra* note 101, at 69; see also Report on the Activity of the Committee on Energy and Commerce for the 101st Congress, H.R. REP. NO. 101-1021, at 233 (1991) (stating that “[d]isposal capacity is diminishing even as the amount of waste produced continues to grow,” that “[l]andfills are closing for environmental and regulatory reasons or because they have been filled to capacity,” and that “[c]ommunity opposition has made the siting of new landfills a difficult process, exacerbating the capacity shortage”).

¹⁰⁸ E.g., 42 U.S.C. § 6924(a) (provision of the Resource Conservation and Recovery Act requiring the EPA to set minimum standards for the design, construction, and operation of facilities for the treatment, storage, and disposal of hazardous waste); *Tennessee v. U.S. Dep’t of Transp.*, 326 F.3d 729,

federal government's intervention, some of the battles waged by the states selected to host undesirable activities have been protracted.¹⁰⁹

Each of these five justifications for federal environmental regulation reflects a kind of collective action problem that would tend to prevent states, acting as individual entities, from adopting and implementing appropriate environmental policies. Federal action is a means of overcoming those problems.¹¹⁰

C. *Collective Action Problems and Preemption*

The central question in many environmental preemption cases is whether the purposes underlying the federal law justify the displacement of state authority. From the collective action perspective, the answer depends on how the particular collective action problem at issue affects the incentives of states. The case for displacing state regulatory authority is strongest with respect to those areas in which each state has incentives to make regulatory decisions that serve the state's own interests while damaging the interests of the collective. The preemptive effect of federal legislation should be assessed in light of this principle.

It is important to bear in mind, however, that environmental policy-making inevitably involves some balancing of environmental benefits against regulatory costs, including burdens on economic activity and enforcement costs.¹¹¹ These countervailing concerns may be more or less explicit in the text or history of a statute, but in view of these countervailing costs there is always some upper limit to the expectations of environmental protection.¹¹² Just as collective action problems can distort a state's assess-

730–31 (6th Cir. 2003) (describing the Hazardous Materials Transportation Act, 49 U.S.C. §§ 5101–5127 (2000), as “an effort to create a coherent approach to addressing the problems posed by the interstate transportation of hazardous material”).

¹⁰⁹ See, e.g., *Nevada v. Dep't of Energy*, 457 F.3d 78 (D.C. Cir. 2006); *Nevada v. Watkins*, 914 F.2d 1545 (9th Cir. 1990). Some of these battles are ongoing. See, e.g., Sam Wood, *DEP: Slag Pile Plan in Glouco Is Flawed; The Material A Metal Company Departing for Brazil Wants to Leave in Newfield Would Be a Billion-Year Hazard, the Agency Says*, PHILA. INQUIRER, Jan. 18, 2007, at B01.

¹¹⁰ Of course, collective action problems remain at the international level. For example, the United States can and does externalize environmental harms to other countries. In that sense only global policymaking bodies—a larger collective of which the United States is part—would consider the full environmental cost of some environmentally damaging activities. This point would tend to reinforce the importance of international environmental law as a tool of environmental policy. For purposes of allocating regulatory responsibility at the state or federal level, however, the full environmental costs to be considered are those that affect the United States.

¹¹¹ We are grateful to Steve Ware and Chris Drahozal, our colleagues at the University of Kansas, for making this point forcefully at a faculty colloquium.

¹¹² David Driesen has argued that the feasibility principle often reflected in environmental regulation “requires stringent regulation, but presumptively subjects this demand for stringency to two constraints. First, the principle authorizes government agencies to forego physically impossible environmental improvements. Second, the principle authorizes government agencies to forego constraints so costly that they cause widespread plant shutdowns.” David M. Driesen, *Distributing the Costs of Environmental, Health, and Safety Protection: The Feasibility Principle, Cost-Benefit Analysis*,

ment of environmental costs and benefits, so too might those problems distort a state's assessment of regulatory burdens. Thus, any full assessment of the implications of collective action analysis for environmental preemption must be concerned with both sides of the environmental policy cost-benefit analysis.

1. Combating Underregulation by States.—The collective action perspective has important implications for the issue of ceiling preemption because not all of the collective action problems to which federal environmental regulation responds support ceiling preemption to the same degree. When federal regulation is premised upon negative interstate externalities, superior federal resources, or the race to the bottom, the collective action problems that call for action at the federal level can be expected to result in inadequate or insufficient regulation at the state level. In these situations, moreover, there is ordinarily not a countervailing collective action problem that would create incentives for states to regulate excessively. Thus, federal environmental regulation to combat these kinds of collective action problems might support floor preemption, but ordinarily would not support ceiling preemption.

The negative externalities justification for federal intervention provides a clear example of this result.¹¹³ If a state can externalize environmental harms because, for example, pollution created by industry in that state flows downstream or downwind into other states, the result we would expect is underregulation by the state of origin. The state can reap the economic benefits of the industrial activity without experiencing the harms (or at least all of the harms). These concerns would potentially justify floor preemption if laxer state standards impair the operation of stricter federal ones.¹¹⁴

and Regulatory Reform, 32 B.C. ENVTL. AFF. L. REV. 1, 9 (2005). Thus, even feasibility standards, such as the one at issue in *Industrial Union Department, AFL-CIO v. American Petroleum Institute*, 448 U.S. 607 (1980), and in *American Textile Manufacturers Institute, Inc. v. Donovan*, 452 U.S. 490 (1981), draw the limit at the destruction of an industry.

¹¹³ We do not mean to suggest that Congress could not decide to impose ceiling preemption under a statute combating externalities, but rather that the case for doing so is weak from a collective action perspective. Thus, Congress should not take this step lightly, and courts ordinarily should not infer such preemption in the absence of express statutory provisions. See *infra* notes 140–41 and accompanying text (discussing basic principles derived from this framework).

¹¹⁴ Note that enforcement of laxer state standards in addition to stricter federal ones might actually increase the level of environmental protection by imposing larger total penalties or increasing the likelihood of sanctions for the most serious violations. On the other hand, if state enforcement action precluded subsequent federal enforcement action, the state would have incentives to pursue weak sanctions as a means of shielding local polluters from more aggressive federal sanctions. Cf. *State Water Control Bd. v. Smithfield Foods, Inc.*, 542 S.E.2d 766 (Va. 2001) (holding that enforcement of state pollution laws was barred by principles of *res judicata* following a federal enforcement action based on the same pollution offense). Perhaps for this reason, the Supreme Court has held that state prosecutions for crimes that would violate federal laws do not bar subsequent federal prosecutions. See, e.g., *United States v. Lanza*, 260 U.S. 377, 385 (1922) (observing in the context of Prohibition that if state prosecutions were a bar to federal prosecution, “a State [could] punish the manufacture, transportation and sale of intoxicating liquor by small or nominal fines, [and] the race of offenders to the courts of that State to

But if—contrary to expectations—the state imposes stricter environmental protection measures, that result cannot be the product of an incentive to underregulate caused by externalized environmental harms. Indeed, the state has regulated, even though doing so imposes economic costs within the state, as a means of generating environmental benefits that will not be confined within its territory.

When a state imposes stricter environmental protection measures, moreover, it ordinarily does not create a corresponding negative regulatory externality.¹¹⁵ If a state regulates pollution-causing activities within the state, both the economic burdens and the environmental benefits are felt within the state, and the political process safeguards the weighing of regulatory costs and benefits.¹¹⁶ It is true that downstream or downwind states might have incentives to overregulate pollution-causing activity in other states, thus reaping the environmental benefits while externalizing the economic costs.¹¹⁷ But states generally lack the authority to regulate pollution-causing activities in other states.¹¹⁸ Thus, negative externalities might justify floor preemption, but they would not justify ceiling preemption.

plead guilty and secure immunity from federal prosecution for such acts would not make for respect for the federal statute or for its deterrent effect”).

¹¹⁵ The principal exception to this proposition is the regulation of pollution-causing goods that move in interstate commerce, insofar as regulation of products sold in one state may burden their production in another. *See Minnesota v. Clover Leaf Creamery Co.*, 449 U.S. 456 (1981) (upholding a state law prohibiting the use of plastic containers for milk even though the law imposed economic burdens on out-of-state interests); *Procter & Gamble Co. v. Chicago*, 509 F.2d 69 (7th Cir. 1975) (upholding a municipal ban on laundry detergents with phosphates despite its negative impact on plaintiffs’ national business). In such cases, however, there is some political process safeguard because producers in the state are also subject to the restriction, and the citizens of the state bear some of the economic costs in the form of higher prices or less desirable products. This kind of regulatory externality is closely aligned with the uniformity problem. *See supra* notes 97–100 and accompanying text (discussing this problem in relation to vehicle emissions). Its implications for preemption will be discussed in that context. *See infra* notes 132–33 and accompanying text.

¹¹⁶ Of course, economic activity within a state benefits other states as well, by producing goods and services that may be used in those other states. In that sense regulation of in-state activity externalizes some economic burdens by making those goods and services more expensive. Of course, this sort of regulation may also externalize environmental benefits to other states. If production of essential goods or services is sharply limited to achieve environmental benefits that are concentrated locally, this becomes a NIMBY problem. *See supra* notes 101–10 and accompanying text.

¹¹⁷ These incentives might manifest themselves in overregulation at the federal level if states can concentrate the economic burdens of environmental protection in a few states, thus externalizing a great deal of those costs while reaping the environmental benefits. This sort of concern is inherent in any federal system, and is one reason why legislation must meet bicameralism and presentment requirements. *See LEVY, supra* note 1, at 86 (discussing collective action implications of bicameralism and presentment).

¹¹⁸ *See, e.g., Nat’l Solid Wastes Mgmt. Ass’n v. Meyer*, 165 F.3d 1151 (7th Cir. 1999) (invalidating a Wisconsin statute prohibiting in-state disposal of solid waste from communities that had not enacted ordinances meeting Wisconsin’s recycling specifications); *Nat’l Solid Wastes Mgmt. Ass’n v. Charter County*, 303 F. Supp. 2d 835 (E.D. Mich. 2004) (invalidating a local ordinance making it unlawful for a Michigan landfill to accept solid waste from a state or local government or other generator that was not regulated by a beverage container deposit law comparable to Michigan’s).

In a similar manner, federal intervention premised on resource pooling responds to the concern that states cannot or will not protect the environment because they lack the resources to develop and enforce standards. Thus, with one notable exception (discussed below), resource pooling provides little justification for displacing state regulatory authority.¹¹⁹ The gains from resource pooling are achieved by regulating at the federal level whether or not the states retain concurrent regulatory and enforcement authority.¹²⁰

The exception to this reasoning is when the national government is “bargaining” over environmental regulation and enforcement with another party, either in terms of international treaties or settlement of enforcement actions.¹²¹ In those circumstances, states’ pursuit of independent actions could weaken the bargaining position of the national government.¹²² If so, the purposes that justify regulating at the national level would tend to support exclusive federal control, that is, both floor and ceiling preemption.¹²³ The Court has recognized these concerns outside of the environmental law context in cases involving sensitive foreign policy negotiations.¹²⁴

There does not appear to be any significant countervailing need to pool resources to prevent overregulation. When individual states do act to protect the environment, the absence of economies of scale and synergistic effects from resource pooling would not seem to foster excessive regulation or enforcement.¹²⁵ It is true that regulation and enforcement by states

¹¹⁹ As in the case of externalities, however, if compliance with state standards or the pursuit of state enforcement actions served as a defense to federal enforcement of federal standards, under the Supremacy Clause the federal standards and enforcement would prevail. *See supra* note 114.

¹²⁰ For example, if (contrary to congressional expectations) the state in which a mega-Superfund site is located commits sufficient resources to remediate the site, preemption of the state’s ability to control the remediation process cannot legitimately be premised on the federal government’s general resource superiority. *See supra* notes 83–84 and accompanying text.

¹²¹ *Cf.* 42 U.S.C. § 9613(f)(2) (2000) (providing that “a person who has resolved its liability to the United States or a State in an administrative or judicially approved settlement shall not be liable for claims for contribution” under CERCLA). Many of the citizen-suit provisions in the federal pollution control statutes bar citizen suits commenced while EPA or a state is diligently prosecuting alleged violations. *See, e.g.*, 33 U.S.C. § 1365(b)(1)(B) (2000) (provision in the Clean Water Act barring citizen suits while the EPA is prosecuting a civil or criminal action).

¹²² This is one argument that has been advanced against state regulation of greenhouse gases. *See infra* notes 187–211 and accompanying text.

¹²³ Note, however, that to overcome the presumption against preemption, these concerns should be both clearly expressed and central to the purposes of the statute.

¹²⁴ *See infra* notes 191–94 and accompanying text (discussing cases).

¹²⁵ It might be argued that lack of information by states could lead to overregulation in response to unfounded public fears. *See* Elizabeth A. Weeks, *Gauging the Cost of Loopholes: Health Care Pricing and Medicare Regulation in the Post-Enron Era*, 40 WAKE FOREST L. REV. 1215 (2005) (discussing how information errors led to an excessive regulatory response in the context of Medicare). *See generally* Cass R. Sunstein, *Hazardous Heuristics*, 70 U. CHI. L. REV. 751 (2003) (discussing information errors and their implications for regulation). This sort of purpose might justify ceiling preemption, but to this point such concerns are not reflected in the federal environmental laws.

alongside the federal government would increase regulatory burdens, but resource pooling does not point to any systematic skewing of incentives that would suggest a reason to displace the authority of states to draw a different balance than the national government.

Like externalities and resource pooling, the race-to-the-bottom rationale posits a concern that states have incentives to underregulate in the field of environmental protection. Thus, this rationale might support floor preemption to the extent that concurrent state regulation impairs the effectiveness of federal law.¹²⁶ But it does not support ceiling preemption. If, for example, a state adopted coal mining reclamation standards more stringent than the national standards under the Surface Mining Control and Reclamation Act, the congressional purpose of combating a race to the bottom¹²⁷ would not support ceiling preemption because the race to the bottom provides no incentive to overregulate.

It is conceivable that some states or localities might engage in a “race to the top,” competing to be the most environmentally friendly so as to attract some preferred group of citizens or businesses (for example, wealthy taxpayers).¹²⁸ In extreme cases where states or local governments have such incentives, the problem merges with the NIMBY phenomenon and will be addressed in that context below.¹²⁹ To date, however, there is little evidence that there is a systematic prisoner’s dilemma in which states are forced to overregulate in order to compete successfully with other states. More fundamentally, while concerns about a race to the bottom are reflected in the purposes of many federal environmental laws, the countervailing problem of overregulation from a race to the top is not reflected in any significant degree.

2. *Ceiling Preemption Based on Uniformity and NIMBY.*—Thus, externalities, resource pooling, and the race to the bottom do not generally support ceiling preemption because they do not involve situations in which the states have incentives to overregulate. On the other hand, if the purpose of federal regulation is to ensure uniformity of standards or combat a

¹²⁶ See *supra* note 114 and accompanying text.

¹²⁷ See *supra* notes 89–93 and accompanying text (discussing the race-to-the-bottom rationale for the Surface Mining Control and Reclamation Act).

¹²⁸ Although the literature at times refers to a race to the top to describe state and local governments’ adoption of aggressive environmental measures, an increasingly common phenomenon, the focus has been on disputing the race-to-the-bottom hypothesis rather than on making an argument for federal ceiling preemption. See, e.g., WILLIAM A. FISCHER, *THE HOMEVOTER HYPOTHESIS: HOW HOME VALUES INFLUENCE LOCAL GOVERNMENT TAXATION, SCHOOL FINANCE, AND LAND-USE POLICIES* 162–77 (2001) (arguing that suburbs are engaged in a race to the top in the protection of the environment); Richard L. Revesz, *Federalism and Environmental Regulation: A Public Choice Analysis*, 115 HARV. L. REV. 553, 583–625 (2001) (citing examples of aggressive state environmental regulation to dispute the empirical accuracy of the race-to-the-bottom argument).

¹²⁹ See *infra* notes 134–38 and accompanying text.

NIMBY problem, then federal purposes may well support ceiling preemption.

This point is most apparent when a major purpose of federal environmental law is to ensure uniformity. Both less and more protective state standards are by definition nonuniform and therefore undermine the federal purpose. Indeed, it is no coincidence that the need for uniformity is one of the most important factors in assessing field preemption.¹³⁰ Suppose, for example, that the basis for federal promulgation of nationally uniform standards controlling the emissions from motor vehicles is the desire to avoid the “chaos” that would face manufacturers, distributors, and dealers if they had to comply with a multiplicity of divergent state standards.¹³¹ Preemption of a more stringent set of state-issued auto emissions standards is consistent with congressional purposes because a failure to preempt would generate exactly the kind of “chaos” that Congress wanted to avoid.

To some extent, there is an argument for uniformity even when federal regulation is based primarily on negative environmental externalities, resource pooling, or the race-to-the-bottom rationale, insofar as making federal regulation exclusive would reduce the costs of regulatory compliance. Under these circumstances, businesses subject to federal law only have one set of standards with which they must comply. Given that some sort of balance between environmental protection and regulatory burdens is implicit in all federal environmental laws, opponents of more stringent state standards can almost always find some general language in the statute (such as a declaration of purpose) or in the legislative history to support an argument for preemption to avoid state regulation that disrupts the federally struck balance by imposing additional regulatory burdens.¹³² The question, however, is whether this concern justifies interpretation of the federal law so as to displace state authority to adopt more protective standards. In light of the presumption against preemption, something more than secondary purposes or general concerns for regulatory burdens should be necessary to warrant ceiling preemption.¹³³

¹³⁰ See, e.g., *Geier v. Am. Honda Motor Co.*, 529 U.S. 861, 871 (2000) (citing legislative history indicating that a purpose of the National Traffic and Motor Vehicle Safety Act was to promote a uniform standard).

¹³¹ See *supra* note 97 and accompanying text.

¹³² One court described the process of adopting statutes that seek to accommodate potentially conflicting policy objectives as follows:

It would be illegitimate for the judiciary, in pursuit of some overriding Congressional goal (such as eliminating water pollution), to tear asunder a specific provision which Congress saw fit to enact. It scarcely needs repeating that statutes are rarely, if ever, unidimensionally directed towards achieving or vindicating a single public policy. While a broad policy goal may well be the animating force driving the legislation, achievement of actual passage of the measure invariably requires compromise and accommodation.

Natural Res. Def. Council, Inc. v. EPA, 822 F.2d 104, 113 (D.C. Cir. 1987) (citations omitted).

¹³³ See *infra* notes 279–99 and accompanying text (discussing this issue in connection with global climate change).

Similarly, ceiling preemption makes sense when federal environmental regulation responds to a NIMBY problem because stringent state regulation may have the purpose and effect of forcing environmentally damaging activities to locate somewhere else. The LLRWPA illustrates this point.¹³⁴ Congress adopted the LLRWPA to prevent the forty-seven states that lacked disposal capacity from unfairly burdening the three states with operational facilities with the risks and costs created by the disposal of the entire nation's low-level wastes.¹³⁵ Given that purpose, no state should be allowed to adopt a siting regime that effectively precludes any disposal facility from locating and operating a facility within the state.¹³⁶ Accordingly, preemption of a state's siting law when it is more stringent than federal requirements would be consistent with the underlying justification for the federal regulatory program.¹³⁷

It is less clear whether such a federal law would also warrant floor preemption. Federal regulation in response to a NIMBY problem is likely the result of concern that states will overregulate. If, instead, a state lowers its environmental standards to attract a disposal site, the concerns that supported federal regulation under the LLRWPA would not be engaged.¹³⁸

3. *Synthesizing a Framework.*—Most federal environmental statutes reflect a variety of primary and secondary purposes with varying implications for preemption of state law under the foregoing analysis. Nonetheless, recognition of the fundamental differences in the extent to which particular

¹³⁴ Low Level Radioactive Waste Policy Amendments Act of 1985, Pub. L. No. 99-240, 99 Stat. 1842 (1986).

¹³⁵ See *supra* notes 101–06 and accompanying text.

¹³⁶ Although any form of aggressive state or local regulation that forces undesirable activities to locate elsewhere might be the result of NIMBY problems, such problems most frequently manifest themselves in overly strict regulations for siting environmentally hazardous facilities. See, e.g., Peter Margulies, *Building Communities of Virtue: Political Theory and Land Use Policy, and the Not in My Backyard Syndrome*, 43 SYRACUSE L. REV. 945 (1993) (discussing the role of fear of increased crime and decreased property values in the NIMBY phenomenon); A. Dan Tarlock, *Benjamin Davy's Essential Injustice: A Comparative and Philosophical Analysis of the LULU Siting Mess*, 22 HARV. ENVTL. L. REV. 607 (1998) (reviewing an Austrian law professor's book discussing the siting problem in the European context); see also Vicki Been, *Analyzing Evidence of Environmental Justice*, 11 J. LAND USE & ENVTL. L. 1 (1995) (empirical study of the extent to which locally undesirable land uses (LULUs) are disproportionately placed in communities that are predominantly populated by people of color and the poor).

¹³⁷ Although the problem is most obvious and common in the context of siting regulations, the same effect could be accomplished through the adoption of especially restrictive environmental standards for facilities, such as extremely costly measures to prevent radiation leaks.

¹³⁸ At the same time, however, statutes like the LLRWPA also typically incorporate some minimum federal standards. Absent a savings clause in the federal law, such standards are binding and compliance with lower state standards would not be a defense to a violation of federal law. The additional enforcement of state standards, even if they are not higher than the federal standards, would increase regulatory burdens and therefore might be incompatible with federal legislation that responds to a NIMBY problem. See *supra* note 114 (discussing the impact of lower state standards in the context of negative environmental externalities).

purposes support ceiling preemption suggests some basic principles to apply when analyzing preemption issues. These principles bear on both the legislative decision whether to preempt state law and the judicial decision whether federal environmental legislation preempts state law. The first principle is meant to guide congressional policymakers, while the rest are directed to courts to ascertain whether a federal statute has preemptive effect and, if so, how broad that effect is.

First, Congress should, as a general matter, refrain from express ceiling preemption unless there are strong justifications, in collective action terms, for displacing state authority to adopt more protective environmental regulations. Such justifications could include (1) resource pooling to the extent that exclusivity is needed to strengthen the bargaining position of the national government; (2) a particular need for uniform national standards to reduce transactions costs and other regulatory burdens; or (3) a need for federal regulation to combat a NIMBY problem. Further, Congress should explicitly reference that justification either in any preemption provision included within the statute or in the initial recitation of statutory objectives.

Second, express statutory language concerning preemption is of course controlling, and we do not mean to suggest that the courts should disregard the text of statutes that expressly preempt (or save) state law. Statutory language, however, does not always clearly reveal the intended scope of federal preemption.¹³⁹ In resolving ambiguities concerning the scope of an express preemption provision, courts should pay close attention to the extent to which ceiling preemption is, in a doubtful case, necessary to overcome collective action problems that would support it, such as the need for uniform standards or combating a NIMBY problem.

Third, there are powerful arguments against implied preemption that justify a strong judicial presumption against ceiling preemption under federal environmental statutes in the absence of an express provision.¹⁴⁰ The strong presumption against ceiling preemption might in principle be overcome by a clearly articulated statutory purpose that requires the conclusion that Congress intended to displace state regulatory authority, notwithstanding the presumption. In general terms, statutory purposes that reflect a desire to combat negative externalities, take advantage of superior federal resources, or preclude a race to the bottom would not support implied ceiling preemption of state environmental regulation because more protective

¹³⁹ See, e.g., *In re WTC Disaster Site*, 414 F.3d 352, 375 (2d Cir. 2005) (“Fathoming the extent of the intended preemption, however, requires a focus beyond the precise language of [the statute], for the respective reaches of terms such as ‘arising out of,’ ‘resulting from,’ and ‘relating to’ are not self-evident.”); *Verizon Maryland, Inc. v. Global Naps, Inc.*, 377 F.3d 355, 371–72 (4th Cir. 2004) (finding that despite statutory provisions that “partially flooded the existing statutory terrain with specific preempting federal requirements, carefully leaving numerous islands of State responsibility,” the “areas of responsibility are a patchwork, and the dividing lines are somewhat murky”).

¹⁴⁰ See *supra* notes 46–52 and accompanying text.

state regulation is not inconsistent with those purposes.¹⁴¹ The need for uniformity or a NIMBY rationale may support ceiling preemption, but courts should be reluctant to infer ceiling preemption unless these purposes are primary statutory purposes or central to the success of the federal regime.

Fourth, courts should be very reluctant to infer preemption based upon secondary statutory purposes unless it is clear that Congress gave those purposes considerable weight. Specifically, general references to minimizing regulatory burdens, protecting businesses, or balancing environmental protection and economic growth should not, standing alone, justify the conclusion that federal law precludes states from adopting a different balance that is more protective of the environment than the federal standard is. Likewise, the potential conflict with a desire to achieve uniformity or avoid NIMBYism should not support preemption unless Congress clearly articulated one of these ends as a major purpose of a federal environmental statute and the adverse impact of the state standard on the attainment of that purpose is clear.

This framework requires careful attention to the reasons for federal entry into a field of environmental regulation and to the manner in which state or local regulation will affect those purposes. In Part II we apply the framework to one multifaceted environmental issue: global climate change. The discussion demonstrates the ways in which our framework facilitates the analysis of preemption issues so as to accommodate competing federal and state interests.

II. CEILING PREEMPTION: A GLOBAL CLIMATE CHANGE EXAMPLE

In this Part we illustrate the utility of our analytical framework in the context of regulating various activities believed to contribute to global climate change.¹⁴² Section A provides general background for the analysis of preemption issues relating to climate change, including a brief overview of the federal government's current approach to regulation and of the regulatory initiatives the states have taken. Section B assesses how each of the five justifications for federal environmental regulation described in Part I bears on ceiling preemption of state efforts to address climate change, and suggests that ceiling preemption is more justified in relation to some aspects of global climate change regulation than others. Moreover, even when ceiling preemption is justified, our framework suggests some necessary accommodations within the substantive content of federal regulatory programs.

¹⁴¹ Nonetheless, in some cases ceiling preemption might be appropriate if federal law pursues those purposes using a means that would be frustrated by state regulation, such as a pollution trading regime, or supplements those purposes with other purposes that state law would thwart.

¹⁴² Although we focus in this Part primarily on climate change issues, we also discuss ceiling preemption under other environmental regulatory programs that provide useful comparisons with the resolution of the issues of ceiling preemption raised by climate change regulation.

A. Current Federal and State Regulation

The federal and state responses to global climate change reflect the trends discussed in the Introduction to this Article. At the federal level, although there is a statutory basis for the regulation of GHG emissions that contribute to global climate change, regulatory agencies (particularly the EPA) have resisted efforts to regulate on various legal and policy grounds. Some states, meanwhile, have taken a more aggressive regulatory posture. Thus, global climate change and the regulation of GHGs represent precisely the kind of scenario in which one would expect ceiling preemption issues to arise.

1. Federal Regulation.—The principal federal statute for controlling air pollution is the Clean Air Act (CAA).¹⁴³ Although the CAA authorizes a wide variety of regulatory programs, the two that are most obviously relevant to the threats posed by global climate change are (1) programs specifically regulating motor vehicle emissions and (2) those establishing “ambient air quality standards” and authorizing states to adopt plans for meeting those standards.

Section 202 of the CAA mandates that the EPA prescribe “standards applicable to the emission of any air pollutant” from new motor vehicles or new motor vehicle engines that, in the judgment of the EPA, “may reasonably be anticipated to endanger public health or welfare.”¹⁴⁴ The Act defines an “air pollutant,” in relevant part, as “any air pollution agent or combination of such agents, including any physical, chemical, [or] biological . . . substance or matter which is emitted into or otherwise enters the ambient air.”¹⁴⁵ To date, the EPA has not issued any motor vehicle emissions standards for carbon dioxide (CO₂) or the other principal GHGs. In 1999, a coalition of states, cities, and nongovernmental environmental organizations filed a petition with the EPA requesting that it regulate emissions of CO₂ and other GHGs from new motor vehicles under section 202 of the CAA. In 2003, the EPA denied the petition on two grounds.

First, the EPA asserted that it lacked the statutory authority to adopt vehicle emissions control standards for CO₂ and the other GHGs under section 202 because none of those substances qualifies as an “air pollutant” under the Act.¹⁴⁶ The EPA also supported the position that it lacked legal authority to regulate CO₂ emissions from motor vehicles on the ground that emissions standards would effectively regulate the fuel economy of passenger cars and light duty trucks. According to the EPA, “[n]o technology currently exists or is under development that can capture and destroy or reduce

¹⁴³ 42 U.S.C. §§ 7401–7671q (2000).

¹⁴⁴ *Id.* § 7521(a)(1).

¹⁴⁵ *Id.* § 7602(g).

¹⁴⁶ Control of Emissions From New Highway Vehicles and Engines, 68 Fed. Reg. 52,922, 52,925 (Sept. 8, 2003) (notice of denial of petition for rulemaking).

emissions of CO₂. . . . At present, the only practical way to reduce tailpipe emissions of CO₂ is to improve fuel economy.¹⁴⁷ Congress authorized the National Highway Traffic Safety Administration (NHTSA) within the Department of Transportation (DOT) to issue and implement mandatory corporate average fuel economy (CAFE) standards¹⁴⁸ for cars and light duty trucks when it adopted the Energy Policy and Conservation Act (EPCA) in 1975.¹⁴⁹ The EPA argued that “[t]he only way for EPA to proceed with CO₂ emissions standards without upsetting this statutory scheme would be to set a standard less stringent than [NHTSA’s CAFE standards] for cars and light duty trucks. But such an approach would be meaningless in terms of reducing GHG emissions from the U.S. motor vehicle fleet.”¹⁵⁰

Second, the EPA asserted that even if it had authority to regulate GHGs, it would exercise its regulatory discretion and refuse to adopt emissions control standards on several policy grounds. First, regulation under section 202 of GHG emissions from new motor vehicles, which are one of many sources of GHGs, would “result in an inefficient, piecemeal approach to the climate change issue.”¹⁵¹ Second, unilateral regulation by the United States of motor vehicle emissions might weaken efforts to persuade developing countries to reduce their own GHG emissions.¹⁵² Third, ongoing research into scientific uncertainties about the causes and effects of global climate change and into possible technological solutions made regulation premature.¹⁵³ Fourth, with respect to the petitioners’ second suggested remedial mechanism (improved tire efficiency), the EPA raised doubts that it had the authority under the CAA to regulate tire efficiency as an “emission” of an air pollutant.¹⁵⁴

¹⁴⁷ *Id.* at 52,929.

¹⁴⁸ The CAFE standards reflect “the sales weighted average fuel economy, expressed in miles per gallon (mpg), of a manufacturer’s fleet of passenger cars or light trucks with a gross vehicle weight rating (GVWR) of 8,500 lbs. or less, manufactured for sale in the United States, for any given model year.” NHTSA, CAFE Overview—Frequently Asked Questions, <http://www.nhtsa.dot.gov/cars/rules/cafe/overview.htm> (last visited Nov. 23, 2007). Thus, fuel economy standards are designed to require auto companies to design the engines they produce to increase the number of miles a vehicle is capable of traveling for each gallon of gasoline used, thereby decreasing fuel consumption, conserving energy resources, and reducing the nation’s dependence on petroleum.

¹⁴⁹ Pub. L. No. 94-163, § 301, 89 Stat. 871 (1975) (codified as amended at 49 U.S.C. §§ 32,906–32,919 (2000)).

¹⁵⁰ Control of Emissions From New Highway Vehicles and Engines, 68 Fed. Reg. at 52,929. The EPA pointed out that DOT recently had issued more stringent fuel economy standards, which would reduce CO₂ emissions by approximately 31 million tons. *Id.* at 52,931.

¹⁵¹ *Id.* at 52,931.

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ The petitioners failed to suggest any actions that the EPA could take to reduce emissions of other GHGs, including CH₄ and N₂O from motor vehicles. *Id.*

In *Massachusetts v. EPA*, however, the Supreme Court rejected both sets of arguments.¹⁵⁵ The Court gave short shrift to the EPA's claim that GHGs are not air pollutants, finding that they fit comfortably within the "capacious" statutory definition of that term.¹⁵⁶ It also firmly rejected the EPA's alternative basis for denying the petition—that even if it does have statutory authority to regulate GHGs, it would be unwise to do so at this time—because the EPA "has offered no reasoned explanation for its refusal to decide whether greenhouse gases cause or contribute to climate change."¹⁵⁷ The Court further indicated that, on remand, the "EPA can avoid taking further action [to regulate GHG emissions from motor vehicles] 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."¹⁵⁸

Whether the EPA retains discretion not to regulate GHGs after the decision in *Massachusetts* is unclear. Some observers claim that the case "leaves the EPA free to decide not to regulate, so long as it provides adequate justification for its decision."¹⁵⁹ Others have interpreted the decision as all but forcing the EPA to regulate GHG emissions not only from mobile, but also from stationary sources.¹⁶⁰ We regard the latter view as closer to the mark, based on language in the opinion suggesting that the only acceptable basis for refusing to regulate is a factual determination that GHGs do not endanger public health or contribute to global climate change.¹⁶¹ It is

¹⁵⁵ 127 S. Ct. 1438 (2007).

¹⁵⁶ *Id.* at 1462. The CAA defines an "air pollutant" as "any air pollution agent or combination of such agents, including any physical, chemical . . . substance or matter which is emitted into or otherwise enters the ambient air . . ." 42 U.S.C. § 7602(g) (2000) (emphasis added).

¹⁵⁷ 127 S. Ct. at 1463. More specifically, that aspect of the EPA's decision rested on "reasoning divorced from the statutory text," *id.* at 1462, and the EPA's "laundry list of reasons not to regulate" were not persuasive because "it is evident they have nothing to do with whether greenhouse gas emissions contribute to climate change." *Id.* at 1462–63.

¹⁵⁸ *Id.* at 1462.

¹⁵⁹ Kathryn A. Watts & Amy J. Wildermuth, *Massachusetts v. EPA: Breaking New Ground on Issues Other than Global Warming*, 102 NW. U. L. REV. 1029, 1029 (2008), 102 NW. U. L. REV. COLLOQUY 1, 1 (2007), <http://www.law.northwestern.edu/lawreview/Colloquy/2007/17/>. *But cf. id.* at 1044 ("[I]t is unclear whether it will be permissible for the EPA on remand to conclude that emissions of greenhouse gases do contribute to global warming, but decline to regulate greenhouse gases on the ground that the agency's resources are constrained and that the agency cannot possibly do everything that Congress has empowered it to do.").

¹⁶⁰ *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/>; Arnold W. Reitze, Jr., *Controlling Greenhouse Gas Emissions from Mobile Sources—Massachusetts v. EPA*, 37 ENVTL. L. REP. 10,535, 10,538 (2007) ("[T]he Court's opinion pushes [the] EPA to find that GHGs need to be regulated.").

¹⁶¹ The Court phrased the determinative "statutory question" as "whether sufficient information exists to make an endangerment finding." *Massachusetts*, 127 S. Ct. at 1463. The court also found fault in the EPA's failure to offer a "reasoned explanation for its refusal to decide whether [GHGs] cause or contribute to climate change." *Id.*

hard to imagine the EPA taking the position that GHGs do not cause or contribute to climate change.¹⁶² The Court did add that there was no need for it to decide whether on remand the “EPA must make an endangerment finding, or whether policy concerns can inform EPA’s actions in the event that it makes such a finding.”¹⁶³ The Court thus did not rule out the possibility of an acceptable policy-based rationale for refusing to regulate in the face of an endangerment finding, but it is certainly not clear that it would accept such a rationale either.

The *Massachusetts* case dealt with the scope of the EPA’s authority to regulate GHG emissions from motor vehicles under section 202 of the CAA.¹⁶⁴ The EPA also regulates pollution pursuant to sections 108 to 110 of the CAA, which direct the agency to compile a list of “each air pollutant” (called a “criteria pollutant”) whose emissions cause or contribute, in the EPA’s judgment, to “air pollution which may reasonably be anticipated to endanger public health or welfare” and whose presence “in the ambient air results from numerous or diverse mobile or stationary sources.”¹⁶⁵ Once the EPA lists an air pollutant as a criteria pollutant, the CAA requires that the EPA issue national ambient air quality standards (NAAQS) that specify maximum permissible concentrations of the relevant pollutant in the ambient air, measured over different periods of time.¹⁶⁶ The CAA requires the states to develop plans (called state implementation plans, or SIPs) to achieve the NAAQS within a period prescribed by the Act.¹⁶⁷

¹⁶² The EPA’s website states that “[g]reenhouse gases are necessary to life as we know it, because they keep the planet’s surface warmer than it otherwise would be. But, as the concentrations of these gases continue to increase in the atmosphere, the Earth’s temperature is climbing above past levels.” It adds that, “[i]f greenhouse gases continue to increase, climate models predict that the average temperature at the Earth’s surface could increase from 2.5 to 10.4°F above 1990 levels by the end of this century. Scientists are certain that human activities are changing the composition of the atmosphere, and that increasing the concentration of greenhouse gases will change the planet’s climate. But they are not sure by how much it will change, at what rate it will change, or what the exact effects will be.” Environmental Protection Agency, Climate Change, Basic Information, <http://www.epa.gov/climatechange/basicinfo.html#emissions> (last visited Nov. 23, 2007). The EPA’s website regards the degree of the changes in global climate due to GHG emissions to be uncertain, but notes the causal link between those emissions and climate change.

¹⁶³ *Massachusetts*, 127 S. Ct. at 1463.

¹⁶⁴ 42 U.S.C. § 7521(a) (2000).

¹⁶⁵ *Id.* § 7408(a)(1)(A)–(B). States must achieve these standards by developing implementation plans, which must include source-specific emissions limitations, that may apply to all sources of pollution, both stationary and mobile.

¹⁶⁶ *See id.* § 7409; 40 C.F.R. §§ 50.1–50.12 (2006). The EPA must issue “primary” ambient air quality standards that, “allowing an adequate margin of safety, are requisite to protect the public health.” 42 U.S.C. § 7409(a)(1), (b)(1). The EPA also must develop “secondary” ambient air quality standards that are “requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air.” *Id.* § 7409(a)(1), (b)(2). The statute defines the term “welfare” to include, but not be limited to, “effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, . . . and climate.” *Id.* § 7602(h).

¹⁶⁷ 42 U.S.C. §§ 7407(a), 7410, 7502(a).

The EPA has not issued NAAQS for CO₂ or other GHGs. As a result, the statutory requirement that states craft and implement plans for reducing emissions of the criteria pollutants from stationary as well as mobile sources has not been triggered for these pollutants. The Supreme Court's holding in *Massachusetts v. EPA*, that the CAA vests in the EPA the authority to regulate CO₂ as an air pollutant under the motor vehicle emissions standard provisions of the Act (and appears to sharply constrain its discretion to refuse to do so),¹⁶⁸ seems equally applicable to GHG emissions from stationary sources.¹⁶⁹ One or more of the EPA's policy-based reasons for deferring regulation of GHGs under the CAA at this time might also be relevant to the EPA's failure to regulate these substances as criteria pollutants (assuming the EPA has any discretion to choose which pollutants qualify as criteria pollutants).¹⁷⁰ These might include the desire to avoid unilateral U.S. reductions and the uncertainty about causes and technical solutions.

2. *State Regulation.*—Despite the holding in *Massachusetts v. EPA* that the EPA has the power to regulate GHG emissions under the CAA, the EPA has not yet exercised that authority, and there is no telling how long it will be before it does so. In the absence of EPA regulation of CO₂ emissions from motor vehicles or stationary sources under the CAA, many state governments have adopted their own regulatory programs.¹⁷¹ These state statutory regimes fall into at least three categories. First, California has adopted legislation and regulations requiring reductions in GHG emissions from motor vehicles, and several other states have followed suit by adopting California's standards.¹⁷²

Second, in 2006, California adopted the Global Warming Solutions Act of 2006.¹⁷³ The Act requires the State Air Resources Board to adopt a statewide GHG emissions limit, to be achieved by 2020, which is equivalent to the statewide level in 1990. The Board also must adopt regulations to achieve the maximum technologically feasible and cost-effective emis-

¹⁶⁸ *Massachusetts*, 127 S. Ct. at 1462–63; see *supra* notes 160–63 and accompanying text (discussing this aspect of the Court's decision).

¹⁶⁹ The triggers for the EPA's authority to regulate air pollution from stationary sources differ somewhat from the triggers for regulation of mobile source pollution, however. Compare 42 U.S.C. § 7521(a)(1) (mandate to regulate mobile source pollution), with *id.* § 7408(a)(1) (factors for listing criteria pollutants), and *id.* § 7411(b)(1)(A) (authority to regulate new stationary sources).

¹⁷⁰ Although the EPA has discretion to determine whether an air pollutant satisfies the tests for designation of an air pollutant as a criteria pollutant, it does not have the authority to fail to issue NAAQS for an air pollutant that does meet those criteria. See *Natural Res. Def. Council, Inc. v. Train*, 545 F.2d 320 (2d Cir. 1976).

¹⁷¹ See Glicksman, *supra* note 13, at 781–84.

¹⁷² CAL. HEALTH & SAFETY CODE § 43,018.5(a) (West 2006); see also Glicksman, *supra* note 13, at 782.

¹⁷³ CAL. HEALTH & SAFETY CODE §§ 38,501–38,599 (West 2007).

sions reductions of particular GHGs (which include CO₂, methane, nitrous oxide, and hydrochlorofluorocarbons) from various categories of sources.¹⁷⁴

Third, some states, either alone or in conjunction with other states, have adopted regulatory programs to reduce CO₂ emissions from particular kinds of stationary sources. The most prominent of these programs is the Regional Greenhouse Gas Initiative (RGGI) in which several northeastern and mid-Atlantic states are participating. The program mandates reductions in CO₂ emissions from power plants, but it includes a cap-and-trade program that permits regulated utilities to comply with their reduction obligations by purchasing emissions credits from other regulated entities that exceed their mandated emissions cuts.¹⁷⁵ Regulated entities have attacked the validity of state efforts on the ground that they are preempted by federal law.¹⁷⁶

B. Preemption and the Environmental Purposes of the CAA

Of the collective action purposes supporting federal environmental regulation, the CAA is based primarily on purposes that do not generally support ceiling preemption of state GHG regulation, such as negative externalities, resource pooling, and the race to the bottom, although there are some arguments for ceiling preemption in order to strengthen the bargaining position of the United States vis-à-vis other countries. The need for uniformity, which would tend to support ceiling preemption, is most prominent with respect to regulation of motor vehicle emissions (as to which there are express provisions), but even in that context the uniformity-based arguments in favor of ceiling preemption are not overwhelming. There is less need for uniformity in the context of stationary sources, which therefore present a weaker case for ceiling preemption. The NIMBY rationale, which in other contexts might support ceiling preemption, is not implicated in the current regulatory regimes.

I. Negative Externalities.—One of the primary justifications for federal intervention in the field of air pollution control, and the adoption of certain provisions of the CAA,¹⁷⁷ was to combat the negative externalities of interstate air pollution.¹⁷⁸ That justification provides no support for ceiling preemption of state laws designed to reduce emissions of air pollutants such as CO₂ that contribute to global climate change.

¹⁷⁴ *Id.* §§ 38,560, 38,562, 38,570.

¹⁷⁵ See Regional Greenhouse Gas Initiative, Overview, available at http://www.rggi.org/docs/mou_rggi_overview_12_20_05.pdf. Some Midwestern states have also participated in regional efforts to reduce CO₂ emissions. See Glicksman, *supra* note 13, at 782.

¹⁷⁶ See, e.g., Cent. Valley Chrysler-Jeep, Inc. v. Goldstene, 529 F. Supp. 2d 1151 (E.D. Cal. Dec. 11, 2007).

¹⁷⁷ 42 U.S.C. §§ 7410(a)(2)(D), 7426 (2000).

¹⁷⁸ See *supra* notes 73–74 and accompanying text.

There are certainly negative transboundary environmental externalities that support federal regulation of GHG emissions,¹⁷⁹ even if their precise impact is difficult to predict.¹⁸⁰ But federal intervention to combat negative environmental externalities justifies floor—not ceiling—preemption. If a state such as California adopts a program to control CO₂ emissions from motor vehicles or stationary sources, that program does not implicate the concern for underregulation because of interjurisdictional externalities.¹⁸¹ In a sense, a state that regulates GHG emissions to an extent not required by federal law is providing a public good rather than seeking to exploit the commons by filling it with a public bad. Unless state regulation of GHGs interferes with another primary purpose of the CAA or the implementation of a particular regulatory program,¹⁸² ceiling preemption has no legitimate role to play under those circumstances.¹⁸³

2. *Superior Resources/Pooling.*—The superiority of federal resources was a basis for precursors to the CAA, and the advantages of resource pooling continue to be a consideration in favor of regulation at the federal

¹⁷⁹ “By its very nature, climate change is a common global concern of all countries, for climate respects no political boundaries.” EDITH BROWN WEISS, *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* 591 (Aspen Pubs., 2d ed. 2007). It is fairly clear that the United States as a whole is externalizing some of the costs of global climate change. See DAVID HUNTER ET AL., *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* 663 (Found. Press, 3d ed. 2007) (suggesting that the United States, as the country with the greatest GHG output in the world, will contribute to the climate change problem worldwide). Scientific evidence seems to support the conclusion, for example, that portions of the developing world will experience the most dramatic adverse effects of climate change, even though GHG emissions there are relatively low. NICHOLAS STERN, *STERN REVIEW ON THE ECONOMICS OF CLIMATE CHANGE* vii (2006), available at http://www.hm-treasury.gov.uk/media/4/3/Executive_Summary.pdf (finding that although all countries will suffer the adverse effects of global climate change, the poorest countries will suffer earliest and most, despite the fact that they have contributed least to the problem).

¹⁸⁰ It is possible that some areas will derive some benefits from global climate change. Nonetheless, states are unlikely to pursue a policy of deliberately refusing to control CO₂ emissions because they believe they will benefit from doing so or that only other jurisdictions will be adversely affected.

¹⁸¹ With respect to mobile emissions sources, however, a state may be able to externalize regulatory burdens because the costs of stricter standards for GHG emissions (which inherently require greater fuel efficiency) may fall primarily on other states, such as those that produce vehicles, and may also fall on consumers in other states whose vehicles will be more costly. See *supra* notes 99–100 and accompanying text (discussing similar reasoning by Congress). We address these issues below in connection with the uniformity rationale for federal regulation. See *infra* Part II.B.4.a.

¹⁸² See *infra* Part II.C (discussing secondary purposes); Part II.D (discussing the implications of state regulation for cap-and-trade programs).

¹⁸³ In addition, the federal government may not provide effective regulation of interstate externalities. See, e.g., GLICKSMAN ET AL., *supra* note 14, at 525–27 (describing the inadequacy of the EPA’s implementation of interstate air pollution provisions under the 1970 Clean Air Act); *Air Pollution: N.J. Files Suit Against EPA over Pa. Power Plant Emissions*, GREENWIRE, Feb. 7, 2007, <http://www.eenews.net/Greenwire/print/2007/02/07/16> (describing New Jersey’s allegation that the EPA had failed to stop a Pennsylvania coal-fired power plant near the New Jersey border from emitting more than ten times the allowable amount of pollution).

level.¹⁸⁴ Even if this consideration is regarded as a primary justification for federal regulation of GHGs, under our framework that rationale generally provides little support for ceiling preemption, with the possible exception of circumstances under which independent state action might compromise a collective response to a third party, as in international negotiations by the United States.

Superior resources (as a result of pooling) might enable the federal government to generate scientific information on global climate change and to implement or enforce regulation of GHGs more effectively than states, but these advantages do not support ceiling preemption. Certainly, there has been an enormous federal investment in scientific research into climate change and its relation to GHGs.¹⁸⁵ This information, however, is in the public domain and generally available to policymakers in the states. Lack of state resources does not provide any inherent reason to suggest that state policymakers would be prone to overregulate on the basis of that information.¹⁸⁶ Similarly, if a particular state decides to expend its relatively limited resources for regulatory implementation and enforcement, the superiority of federal resources does not provide a rationale for precluding such efforts.

The more difficult issue relates to the premise that pooling of resources increases leverage and bargaining power vis-à-vis other parties.¹⁸⁷ When the EPA denied the states' petition to regulate CO₂ emissions from motor vehicles in 2003, one of the explanations it offered was its conviction that unilateral regulation by the United States of motor vehicle emissions might weaken efforts to persuade developing countries to reduce their own GHG emissions.¹⁸⁸ The auto industry advanced this reasoning in two unsuccessful actions, arguing that state restrictions on GHG emissions from motor vehicles are preempted because their implementation “interferes with the ability of the United States to speak with one voice upon matters of global climate change” and “diminishes the bargaining power of the United States

¹⁸⁴ See, e.g., GLICKSMAN ET AL., *supra* note 14, at 86 (discussing economies of scale and research leadership provided by federal information gathering).

¹⁸⁵ E.g., 7 U.S.C. §§ 6701, 6711 (2000); 15 U.S.C. §§ 2904–2961 (2000); 42 U.S.C. §§ 13,383, 13,385, 13,389 (2000).

¹⁸⁶ One possible argument would be that state policymakers, if less fully informed because the state lacks the resources to pay for the most highly qualified experts, may be more likely to process the information incorrectly. See *supra* note 125. Such reasoning, however, is not reflected in the purposes of the CAA and would provide a relatively weak justification for a congressional decision to preempt state law. Indeed, relatively uninformed policymakers may be just as prone to underregulate—due to lack of appreciation of the risks posed by climate change—as to overregulate. Cf. Manya A. Brachear, *Religious Leaders Divided About Global Warming*, CHI. TRIB., June 15, 2007, at C-11 (reporting Oklahoma Senator James Inhofe's comment that global warming is “the greatest hoax ever perpetrated on the American people”).

¹⁸⁷ See *supra* notes 121–24 and accompanying text (discussing the potential for independent state action to weaken the federal government's bargaining with foreign countries about environmental regulation and enforcement).

¹⁸⁸ See *supra* note 152 and accompanying text.

in negotiating multilateral reductions in greenhouse gases.”¹⁸⁹ The argument is based on the notion that the President is in the strongest position to extract commitments by foreign governments to reduce their GHG emissions if United States sources have not yet done so or committed to do so. A unilateral decision to abate GHG emissions within the United States—whether as a result of federal regulation or state regulation—will reduce the President’s leverage because foreign nations have less need to reduce their emissions in order to extract concessions from the United States. Both federal district courts to consider these challenges have rejected them.¹⁹⁰

The arguments for ceiling preemption based on the preservation of the federal government’s leverage in foreign affairs could draw some support from two recent Supreme Court decisions involving preemption in the foreign policy context, although those cases are distinguishable in important respects. First, in *Crosby v. National Foreign Trade Council*, the Court held that a Massachusetts law designed to put pressure on Burma (Myanmar) to improve its human rights practices was preempted by a federal statute authorizing the President to impose economic sanctions against Burma.¹⁹¹ The Court reasoned that the state law interfered with the statute’s “delegation of effective discretion to the President to control economic sanctions against Burma, its limitation of sanctions solely to United States persons and new investment, and its directive to the President to proceed diplomatically in developing a comprehensive, multilateral strategy toward Burma.”¹⁹² Second, in *American Insurance Ass’n v. Garamendi*,¹⁹³ the Court held that a California law designed to force foreign insurers to disclose records concerning insurance for Holocaust victims was impliedly preempted by presidential executive agreements with several countries in which insurers were located.¹⁹⁴ Both of these cases suggest that preemption of state law may be justified in order to afford the President a strong hand in negotiations on foreign policy issues.

Nonetheless, the situations in these cases differ from that of global climate change in critical respects that weaken the case for ceiling preemption of state GHG restrictions. First and foremost, in both cases the state laws in question directly addressed foreign relations matters in purpose and effect—in *Crosby* policy toward Burma, and in *Garamendi* the legal obligations of insurance companies located in Europe. By way of contrast, state

¹⁸⁹ Cent. Valley Chrysler-Jeep v. Witherspoon, 456 F. Supp. 2d 1160, 1177 (E.D. Cal. 2006) (quoting paragraph 130 of the plaintiffs’ first amended complaint), *on reconsideration sub nom.* Cent. Valley Chrysler-Jeep, Inc. v. Goldstene, 529 F. Supp. 2d 1151, 1190 (E.D. Cal. 2007) (granting summary judgment to the state); *accord* Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie, 508 F. Supp. 2d 295, 392 (D. Vt. 2007) (quoting a similar argument in plaintiffs’ complaint at paragraph 121).

¹⁹⁰ See *infra* notes 207–19 and accompanying text (discussing *Goldstene* and *Crombie*).

¹⁹¹ 530 U.S. 363 (2000).

¹⁹² *Id.* at 373–74.

¹⁹³ 539 U.S. 396 (2003).

¹⁹⁴ *Id.* at 420–25.

regulation of GHG emissions is directed at domestic activities within the state in an area of traditional state authority, even if those activities may have international effects.¹⁹⁵

Second, the legal basis for implied preemption was much stronger in both cases. In *Crosby*, intent to provide the President with a free hand in international negotiations was the central purpose of the federal statute and clear on its face, which is not the case for the CAA.¹⁹⁶ Another statute, the Global Climate Protection Act of 1987,¹⁹⁷ provides for the development of a federal global climate change policy and makes the State Department “responsible to coordinate those aspects of United States policy requiring action through the channels of multilateral diplomacy.”¹⁹⁸ While this provision might be analogized to the federal statute in *Crosby*, the Global Climate Protection Act contains little evidence of congressional intent to prevent states from regulating environmentally harmful activities within their jurisdictions in order to bolster the State Department’s negotiating position.¹⁹⁹ In *Massachusetts v. EPA*, moreover, the Supreme Court rejected the EPA’s reliance on this argument as a basis for declining to regulate GHGs, making clear that *Crosby*’s reasoning does not apply under the regulatory regime of the CAA.²⁰⁰

¹⁹⁵ See *Cent. Valley Chrysler-Jeep, Inc. v. Goldstene*, 529 F. Supp. 2d 1151, 1188 (E.D. Cal. 2007) (finding that California’s GHG emissions controls “are aimed internally at the state’s traditional role in the regulation of what may be sold in the state and at corporations, not nations, that manufacture items for the state’s market” and that the effect of the California regulations “is not on foreign countries or their activities or directly on United States’ policy with regard to any particular country”).

¹⁹⁶ There is nothing in the text or legislative history of the CAA that reflects a primary purpose to protect the President’s ability to negotiate international treaties. To the contrary, the entire thrust of the CAA is inconsistent with the notion that voluntary regulation of air pollution by states or by the federal government would somehow undermine our ability to negotiate international environmental agreements effectively. One provision of the CAA addresses the international effects of air pollution but, as will be discussed below, this provision is narrow and does not support broad preemption of state regulation. See *infra* notes 226–28 and accompanying text.

¹⁹⁷ Title XI—Global Climate Protection, Pub. L. No. 100-204, §§ 1101–1106, 101 Stat. 1407 (1987), amended by Pub. L. No. 103-199, § 603(1), 107 Stat. 2327 (1993) (codified at 15 U.S.C. § 2901 (2000)).

¹⁹⁸ *Id.* § 1103(c).

¹⁹⁹ The reluctance of courts to allow international political considerations to affect the scope or content of domestic regulatory programs in the absence of explicit congressional instruction is also reflected in *Earth Island Institute v. Hogarth*, 494 F.3d 757 (9th Cir. 2007), in which the court invalidated a finding by the Secretary of Commerce that the use of purse-seine nets to catch tuna was not having a significant adverse impact on depleted dolphin stocks in the Pacific Ocean. It concluded that the Secretary improperly relied on international political concerns that were “within Congress’s bailiwick,” instead of basing the finding exclusively on scientific factors, as Congress intended. *Id.* at 768 (quoting *Browner v. Evans*, 257 F.3d 1058, 1065–66 (9th Cir. 2001)).

²⁰⁰ 127 S. Ct. 1438, 1463 (2007). The Court reasoned that:

[W]hile the President has broad authority in foreign affairs, that authority does not extend to the refusal to execute domestic laws. In the Global Climate Protection Act of 1987, Congress authorized the State Department—not EPA—to formulate United States foreign policy with reference to environmental matters relating to climate. See § 1103(c), 101 Stat. 1409. EPA has made no showing that it issued the ruling in question here after consultation with the State Department. Con-

In *Garamendi*, there was no statutory basis for preemption, but the Court recognized that the President has power to negotiate executive agreements without congressional consent and that these agreements may preempt state laws.²⁰¹ Critically, however, valid executive agreements had been negotiated in *Garamendi*, and it was these agreements that provided the legal basis for preemption. In contrast, there is no executive agreement currently in place to preempt state GHG emissions.²⁰² Thus, preemption in this case would extend even further and recognize preemption of state environmental regulation on the basis of the President's *unexercised* foreign relations authority.

Such an argument might be supportable if the states were directly interfering with foreign relations by specifically targeting entities in other countries in order to achieve foreign relations objectives.²⁰³ But ceiling preemption of GHG regulation would displace the states' authority to regulate domestic activities within the state because of their incidental impact on international matters. In an era of increasing globalization, this argument would preempt a vast realm of state regulation that might implicate the interests of other countries and therefore could plausibly be subject to presidential negotiations.

We also doubt that unilateral state regulation would so undermine the international bargaining position of the United States as to warrant a congressional decision to adopt express ceiling preemption. The United States is responsible for an estimated twenty to twenty-five percent of the world's GHG emissions.²⁰⁴ An effective global solution to the climate change problem therefore depends on U.S. participation. As long as the United States refuses to unilaterally reduce its GHG emissions, the federal government can hold out U.S. participation in an international climate change regime as the carrot to induce other nations to make concessions. Theoretically, the decision by a state or group of states to require reductions before the EPA does so weakens the impact of the President's threat of continued noncooperation. But the "defection" of a state (even a large one such as Califor-

gress did direct EPA to consult with other agencies in the formulation of its policies and rules, but the State Department is absent from that list.

Id.

²⁰¹ 539 U.S. 396, 415–17 (2003).

²⁰² Indeed, as observed by the Court in *Massachusetts v. EPA*, the EPA is not even the proper body to assert foreign policy concerns. 127 S. Ct. at 1463 (quoted *supra* note 200); *cf.* *Hampton v. Mow Sun Wong*, 426 U.S. 88 (1976) (invalidating a Federal Civil Service Commission regulation barring aliens from the civil service because the agency justification of promoting reciprocal benefits for United States citizens in other countries was not within the responsibilities of the Commission).

²⁰³ *See Zschernig v. Miller*, 389 U.S. 429, 440 (1968) (invalidating an Oregon law imposing conditions on the right of foreign nationals to succeed to property as an interference with the exclusive federal foreign relations authority because the law was an effort to punish Communist regimes).

²⁰⁴ BROWN WEISS, *supra* note 179, at 649; HUNTER ET AL., *supra* note 179, at 663.

nia)²⁰⁵ or group of states from the united, antiregulatory front presented by the federal government is unlikely to put a significant dent in the clout that federal negotiators have in dealing with the environmental policymakers of foreign nations. Many other factors are likely to have a far more substantial impact on negotiations.²⁰⁶

This conclusion is supported by two recent lower court decisions involving the alleged preemption of state programs to restrict GHG emissions from motor vehicles. In the first case to address the ceiling preemption question squarely, a federal district court rejected the argument that Vermont's regulatory efforts improperly intruded upon the foreign policy prerogatives of the President and Congress.²⁰⁷ The court rejected the auto industry's assertion that Vermont's GHG controls "interfere[d] with the ability of the United States to speak with one voice upon matters of global climate change,"²⁰⁸ concluding that "national foreign policy on global warming encourages the development of international support for reducing GHG emissions, and . . . garnering international support depends in part on informing other nations of this country's commitment to this task on the national, state and local level."²⁰⁹ According to the court, state and local efforts to reduce GHG emissions contribute to the international environmental treaty commitments of the United States.²¹⁰ Thus, the court regarded U.S. policy as based on the premise that state regulation would enhance rather than detract from the federal government's ability to negotiate GHG reduc-

²⁰⁵ California contributes 6.7% of total U.S. CO₂ emissions. Margaret Kriz, *Bench Press for Cleaner Fuels*, NAT'L J., Feb. 24, 2007, at 38, 40.

²⁰⁶ The increase in media attention to global climate change issues in the United States; the shift in U.S. public opinion toward stronger support for federal regulation of GHG emissions, see Robert L. Glicksman, *Global Climate Change and the Risks to Coastal Areas From Hurricanes and Rising Sea Levels: The Costs of Doing Nothing*, 52 LOYOLA L. REV. 1127, 1184–97 (2006); the flurry of legislation introduced in Congress with bipartisan support to abate climate change, see, e.g., Global Warming Reduction Act of 2007, S. 485, 110th Cong. (2007); the impending change in presidential administrations in 2009; and the support for federal regulation provided by many important businesses in the United States, see Margaret Kriz, *Flash: Industry Now Seeks GHG Limits*, ENVTL. F., Mar./Apr. 2007, at 8, 8, are all likely to send stronger signals to foreign negotiators about the ability of the President to strike a deal on his own terms than would the decisions by the states to initiate mandatory controls on GHGs even in the absence of federal controls.

²⁰⁷ *Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 2d 295 (D. Vt. 2007).

²⁰⁸ *Id.* at 392 (quoting plaintiff's complaint at paragraph 121) (internal quotation marks omitted).

²⁰⁹ *Id.* at 394.

²¹⁰ *Id.* at 394–95. These include the United Nations Framework Convention on Climate Change (UNFCCC), May 9, 1992, 31 I.L.M. 849. See *Crombie*, 508 F. Supp. 2d at 392–95 (discussing the UNFCCC). The court cited a State Department release to the United Nations that stated that "California's GHG regulation, far from charting a divergent, potentially disruptive or embarrassing course, fits squarely within the nation's emission reduction policies." *Id.* at 395. Likewise, the court concluded that Vermont's program exemplified "a cooperative federal state approach to the global issues of climate change," rather than "representing an intrusion into the 'field' of foreign affairs entrusted exclusively to the national government." *Id.* The court also held that *Garamendi* did not support preemption because it found no "clear conflict between the state law and an express national foreign policy." *Id.* at 392, 395–96.

tion commitments with foreign nations. The court relied in part on the Supreme Court's decision in *Massachusetts v. EPA*, in which the Court "dismissed EPA's contention that regulating [GHGs] domestically might impair the President's ability to negotiate with developing countries to reduce emissions."²¹¹

Another district court similarly held that California's restrictions on GHG emissions from motor vehicles were not preempted by the federal government's foreign policy.²¹² Relying on the Supreme Court's decision in *Massachusetts v. EPA*, the court reasoned that the CAA reflects Congress's intent to empower California to develop automotive emissions controls stronger than the EPA's restrictions "subject only" to the EPA's determination that the CAA criteria for issuance of a preemption waiver are satisfied.²¹³ According to the district court, executive branch policy may not interfere with that intent by precluding California from seeking a waiver for GHG emission controls.²¹⁴ It interpreted Supreme Court precedents to require a party asserting foreign policy preemption to show "clear conflict" between a state law and the functioning of some agreement, treaty, or program that is the product of negotiations between the executive and a foreign government.²¹⁵ The court concluded that U.S. foreign policy on climate change seeks to (1) "approach climate change through voluntary agreements of partnerships negotiated with single or multiple foreign states"; (2) "reduce the [CO₂] intensity . . . of their economies"; and (3) retain robust economies.²¹⁶ The plaintiffs asserted that U.S. policy consisted of "speaking with one voice," but the court responded that this is a strategy, or a

²¹¹ *Crombie*, 508 F. Supp. 2d at 396–97 (citing *Massachusetts v. EPA*, 127 S. Ct. 1438, 1463 (2007)).

²¹² *Cent. Valley Chrysler-Jeep, Inc. v. Goldstene*, 529 F. Supp. 2d 1151 (E.D. Cal. 2007). The court initially concluded that the argument had sufficient merit to withstand a motion for judgment on the pleadings, anchoring its analysis in the proposition, recognized by the Supreme Court, that "it was out of 'concern for uniformity in this country's dealings with foreign nations' that the Constitution allocated the foreign relations power to the federal government." *Cent. Valley Chrysler-Jeep v. Witherspoon*, 456 F. Supp. 2d 1160, 1175 (E.D. Cal. 2006). The court reversed itself on reconsideration, however, in light of *Massachusetts v. EPA* and *Crombie*. *Goldstene*, 529 F. Supp. 2d at 1154–55, 1190.

²¹³ *Goldstene*, 529 F. Supp. 2d at 1182 (citing 42 U.S.C. § 7543(b) (2000)). In addition, Congress intended to allow any other state to adopt California's standards once the EPA has granted a waiver to California under § 203(b). *Id.* The EPA denied California's petition for a waiver of the CAA's preemption of state restrictions on GHG emissions from motor vehicles in late 2007. *See infra* note 246.

²¹⁴ *Goldstene*, 529 F. Supp. 2d at 1182. The court added, relying on *Massachusetts v. EPA*, that when a court seeks to identify U.S. foreign policy concerning regulation of GHG emissions, "it must look to sources other than EPA because EPA's pronouncements of what is United States foreign policy, and what constitutes interference with that policy, are not authoritative." *Id.* at 1181. As the Supreme Court concluded in *Massachusetts v. EPA*, Congress authorized the State Department, not the EPA, to formulate U.S. foreign policy with respect to climate change. *Id.* at 1185 (citing the Global Climate Protection Act of 1987).

²¹⁵ *Id.* at 1188.

²¹⁶ *Id.* at 1186.

means of achieving an acceptable policy, rather than a policy itself.²¹⁷ The court characterized the plaintiffs' argument that unilateral efforts to regulate GHG emissions might interfere with U.S. foreign policy as an effort to bootstrap the EPA's erroneous and post hoc rationalization for not regulating GHG emissions into a foreign policy pronouncement. It found "absolutely nothing" to support the contention that it is U.S. policy to limit efforts by the federal government or individual states to control GHG emissions to leverage agreements with foreign nations.²¹⁸ Finally, the court rejected the "bargaining chip" theory because it embraces an impermissibly broad range of activities covered by the traditional state police powers.²¹⁹

3. *Race to the Bottom.*—A third rationale that underlies certain components of the CAA is concern over a race to the bottom.²²⁰ This rationale, like negative externalities and resource pooling, does not provide much support for ceiling preemption of state regulation of GHG emissions because it responds to state incentives to underregulate.²²¹

A different issue is presented by the Bush Administration's reliance on the existence of an international race to the bottom in refusing thus far to support the adoption of mandatory controls on GHG emissions.²²² An international race to the bottom provides incentives for the United States and other countries to underregulate, viewed from the perspective of the global collective, but that does not suggest any incentive for individual states within the United States to overregulate. Indeed, the same incentives that create an international race to the bottom would tend to cause states to un-

²¹⁷ *Id.*

²¹⁸ *Id.* at 1187 (also finding "that Plaintiff's contention that it is also United States foreign policy to hold in abeyance internal efforts to reduce [GHG] emissions in order to leverage foreign cooperation is completely without factual support"). The court analogized the plaintiffs' argument to the irrational argument that "it would be a rational negotiating strategy to refuse to stop pouring poison into the well from which all must drink unless your bargaining partner agrees to do likewise." *Id.*

²¹⁹ *Id.* at 1187–88.

²²⁰ See Erin Ryan, *Federalism and the Tug of War Within: Seeking Checks and Balance in the Interjurisdictional Gray Area*, 66 MD. L. REV. 503, 581 (2007) (discussing federal regulation of activities that generate air pollution as a way to prevent a race to the bottom); Christopher A. Brook, Comment, *Cuba: Undermining or Underlining the "Race to the Bottom?"*, 30 N.C. J. INT'L & COMP. REG. 197, 199–200 (2004) (discussing the role of the race-to-the-bottom theory in spurring the adoption of federal environmental legislation, and characterizing the argument as an "animating" force in enactment of the CAA); *supra* note 90 and accompanying text.

²²¹ See *supra* notes 126–29 and accompanying text.

²²² The Secretary of Energy, Samuel Bodman, for example, has expressed a concern that "the imposition of a carbon cap in this country would . . . lead to the transfer of jobs and industries abroad that do not have such carbon caps. . . . [a]nd that you'd have the U.S. economy damaged on the one end and the same emissions, potentially worse emissions, because they don't have the same type of standards." Darren Samuelson, *Climate: Bush Officials Insist No Change Is Coming on GHG Caps*, GREENWIRE, Feb. 2, 2007, <http://www.eenews.net/Greenwire/2007/02/02/2> (quoting Samuel Bodman). The Secretary also warned that "[t]he U.S. economy is not something to be experimented with in my judgment." *Id.* (quoting Samuel Bodman).

derregulate as well. Thus, if a state decides to adopt more stringent GHG regulation than the federal government,²²³ that judgment is not the result of a race-to-the-bottom problem. Moreover, because the economic costs will be borne at least in part by businesses and consumers in the state, there is no systematic externalization of economic burdens that might be expected to produce overregulation.²²⁴

The thrust of the international race-to-the-bottom argument, however, is focused on international relations and is thus a variant of the collective bargaining argument discussed above in connection with resource pooling.²²⁵ The idea would be that unilateral regulation by states would prevent the federal government from insisting on reciprocity from other countries before the United States restricts its GHG output. There is, however, little evidence that the CAA was intended to withhold federal and state regulation of pollutants in order to strengthen the negotiating position of the United States with respect to other countries on air pollution matters. Section 115 of the Act does allow the EPA to require revisions to a state implementation plan to address pollution that endangers health or welfare in another country if the affected country offers similar protection for the United States.²²⁶ This provision arguably reflects a congressional purpose to pursue a strategy of reciprocity in response to the prisoner's dilemma that underlies the race-to-the-bottom problem.

But section 115 applies only (1) when considerations of harm to another country, standing alone, would be used (2) to require a state to regulate more stringently pollution activity within the state.²²⁷ A critical point is that this provision does not prohibit or reflect concern for a state's voluntary restriction of GHG emissions based upon its own determination that the environmental benefits outweigh the economic costs, but rather is a limitation on the EPA's ability to force states to reduce emissions based on effects in another country. Indeed, outside this narrow context, the CAA reflects a rejection of the international race-to-the-bottom phenomenon, in-

²²³ The Secretary of Energy acknowledged that some states, such as California, have reached a different judgment as to the proper balance between economic competitiveness and environmental protection than the Administration has. He responded that "[i]f I am right" about the adverse economic implications of choosing to regulate, "California will lose jobs and of course we're going to follow that." *Id.* (quoting Samuel Bodman).

²²⁴ It is true that some economic burdens from stringent regulation of GHGs would be felt in other states, but unless the state is somehow externalizing regulatory burdens, *see infra* notes 282–85 and accompanying text, the regulating state would feel at least its proportional share of the burden. Conversely, some of the environmental benefits would be externalized as well.

²²⁵ *See supra* notes 187–211 and accompanying text.

²²⁶ *See* Clean Air Act § 115, 42 U.S.C. § 7415 (2000).

²²⁷ *Id.*

sofar as it contemplates unilateral reduction of pollutants within the United States without regard to similarly strict regulation in other countries.²²⁸

Furthermore, even if strengthening the ability of the United States to negotiate reciprocal concessions from other countries so as to combat the international race to the bottom provides a theoretical argument for ceiling preemption, in practice it provides little support for such an outcome. As noted previously, the tendency of state restrictions on GHG emissions to weaken the United States' bargaining position with respect to other countries is marginal, and likely overwhelmed by a host of other factors.²²⁹ Moreover, virtually every industrialized nation in the world has already committed to the reduction regime established by the Kyoto Protocol.²³⁰ Accordingly, were the United States to impose mandatory controls on GHG emissions, it would hardly stand on its own in doing so, and state restrictions would not seriously undermine its negotiating position.

In sum, the international race to the bottom provides only weak support for ceiling preemption, particularly implied preemption based upon the provisions of the CAA. Notwithstanding the theoretical possibility that such a justification for federal regulation could support ceiling preemption, in the context of GHG emissions the prospect of state regulation interfering with the federal government's strategy to combat an international race to the bottom is insufficient to overcome the presumption against preemption. There is neither sufficient support in statutory language or history to conclude that it was a primary purpose of the CAA or related statutes, nor evidence to suggest it is a serious concern in practice. Under these circumstances, the argument proves too much, since it would apply equally to all kinds of pollutants and thus would support broad occupation of the field by the CAA, which is clearly contrary to its text and to its purposes.²³¹

²²⁸ The court in *Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 2d 295 (D. Vt. 2007), made this point as follows:

Although the United States has consistently called for international consensus and a comprehensive approach to global warming, it has never disapproved of domestic regulation of domestic GHG emissions. To the contrary. The United States has praised such efforts to the international community. That the United States also encourages voluntary efforts to reduce GHG emissions is not evidence that domestic regulatory programs are antithetical to the country's foreign policy.

Id. at 396.

²²⁹ See *supra* notes 204–19 and accompanying text.

²³⁰ As of October 23, 2007, 175 nations, not including the United States, had ratified the Protocol. See UNFCCC, Kyoto Protocol Status of Ratification (Oct. 23, 2007), http://unfccc.int/files/kyoto_protocol/background/status_of_ratification/application/pdf/kp_ratification.pdf. Indeed, the more accurate description of the United States' approach to global GHG regulation is as a "hold out" tactic—a form of "strategic behavior" in which a party whose participation is necessary for successful collective action refuses to participate in order to extract concessions from other participants. See RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 55–56 (6th ed. 2003) (discussing the hold out problem as a justification for eminent domain power).

²³¹ See 42 U.S.C. § 7416 (preserving state authority to regulate air pollution, provided state regulation is not less stringent than applicable federal regulation).

4. *Uniform Standards.*—The CAA reflects a legislative purpose to obtain the advantages of uniform federal regulation, particularly when dealing with regulation of motor vehicle emissions. Under our framework, the desire for uniformity as a justification for the federal regulation of GHGs would generally tend to support ceiling preemption (as well as floor preemption). But the extent to which this purpose is sufficiently clear and central to the CAA to support ceiling preemption varies depending upon the type of source and emissions being regulated. The need for uniformity in regulating motor vehicle emissions is particularly strong, a determination Congress reached when it adopted express preemption provisions in the CAA on that subject. As to stationary sources, however, the justification for ceiling preemption based on the need for uniformity is far weaker.

a. *State regulation of motor vehicle emissions.*—The transaction costs of nonuniform regulation are particularly high for goods produced in large numbers that move from state to state, like cars and trucks. It is hardly surprising, then, that section 209 of the CAA expressly prohibits state or local governments from “adopt[ing] or . . . enforc[ing] any standard relating to the control of emissions from new motor vehicles or motor vehicle engines subject to this part,”²³² although there is a separate waiver provision under which the EPA may permit California to adopt more stringent standards that may then be adopted by other states as well.²³³ The analysis of the ceiling preemption issue in this context is complicated, however, by two factors. First, the federal government has declined thus far to regulate GHGs under the CAA. Second, because of the direct linkage between control of GHG emissions and motor vehicle fuel economy, this issue implicates a second statutory scheme governing fuel economy standards.

When the federal government declines to regulate in a given area, ceiling preemption creates a regulatory void, leaving states with no power whatsoever to protect the health, safety, and welfare of their citizens. Given that ceiling preemption in such cases prevents the states from protecting their citizens without providing any alternative protections, the presumption

²³² *Id.* § 7543(a).

²³³ *See id.* §§ 7543(b), 7507. Under § 7543(b), any state that had vehicle emissions standards in place before March 30, 1966, may adopt more restrictive standards if it applies for and receives a waiver from the EPA. In practice, the only state that had standards in place by the specified date is California. *See Cent. Valley Chrysler-Jeep, Inc. v. Goldstene*, 529 F. Supp. 2d 1151, 1156 (E.D. Cal. 2007). Under § 7507, other states may opt to follow California’s more stringent standards. California applied for a waiver under § 7543(b) to allow it to implement emissions controls on GHGs from passenger cars and light trucks. EPA denied the waiver request in late 2007. *See infra* note 246. For a discussion of California’s unique treatment under the motor vehicle emissions standards of the CAA and its predecessors, see generally Ann E. Carlson, *Federalism, Preemption, and Greenhouse Gas Emissions*, 37 U.C. DAVIS L. REV. 281 (2003). This system preserves uniformity to a large degree because there are only two possible standards: the federal standard or the California standard. At the same time, it also preserves the states’ interest in protecting their citizens from environmental harms based on a different judgment than the federal government regarding the need for protection against those harms.

against implied preemption should be especially strong. If the decision is reflected in a statute that embodies a conscious legislative decision in favor of a laissez faire environment, ceiling preemption has been subjected to the political safeguards of federalism.²³⁴ But the mere failure to regulate lacks similar political safeguards and should not preempt state regulatory initiatives.²³⁵ First, the failure of Congress to pass a regulatory statute does not necessarily reflect a decision to adopt a laissez faire regulatory regime because legislation may fail for a variety of reasons. Second, congressional failure to adopt a statute, unlike enacted legislation, does not meet the requirements of bicameralism and presentment.²³⁶

The situation for GHGs is more complex because Congress has authorized the EPA to regulate GHGs, but the EPA has to this point declined to do so.²³⁷ The CAA's preemption provisions have been subjected to the political safeguards of federalism, but the CAA assumes that the EPA will regulate harmful pollutants.²³⁸ Thus, it is by no means clear that Congress intended to authorize the EPA to preempt states' ability to regulate harmful pollutants by declining to exercise its regulatory authority.²³⁹ Moreover, the

²³⁴ See *supra* note 52 and accompanying text.

²³⁵ One exception to this premise might be when the state regulation would violate the dormant commerce clause, in which case the preemptive effect of congressional inaction is derived from the underlying constitutional provision rather than the inaction of Congress.

²³⁶ Legislative inaction can be achieved by any of the three components of the legislative process: the House or Senate by failure to approve or the President if a veto cannot be overridden. See, e.g., Michael J. Kaufman, *Mending the Weathered Jurisdictional Fences in the Supreme Court's Securities Fraud Decisions*, 49 SMU L. REV. 159, 208 n.361 (1996) (describing the ability of the House, the Senate, or the President to block the enactment of legislation and explaining why "[t]he judicial treatment of congressional inaction as the equivalent of congressional legislation . . . disrupts the constitutional roles assigned to the President and the Congress in the lawmaking process").

²³⁷ See *supra* notes 146–58 and accompanying text.

²³⁸ Indeed, there is language in the Supreme Court's recent decision in *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007), strongly implying that, if the EPA finds as a scientific matter that GHGs have harmful environmental effects, it has no discretion not to regulate them. The Court stated:

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. . . . 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 other priorities of the Administrator or the President, this is the congressional design.

Id. at 1462; see also *supra* notes 159–63 and accompanying text (discussing debate in academic literature over this question).

²³⁹ One of the authors has argued elsewhere that Congress should preempt state environmental regulation despite federal inaction only in very limited circumstances, such as when it determines either that a state's regulatory initiative would inappropriately impose adverse effects on other states or that federal policies can best be achieved in the absence of regulation at any level of government. Further, the courts should find implied preemption arising from federal regulatory inaction based on a conflict with federal objectives only if Congress has explicitly delegated to a federal agency the power to preempt state law to prevent it from subverting federal goals and the agency has clearly and persuasively exercised that

extent to which agency construction of preemption provisions should be accorded “*Chevron* deference” is the subject of considerable debate.²⁴⁰ Under our framework, the usual presumption against preemption has been overcome by express statutory language, and the need for uniformity provides a strong basis for ceiling preemption. At the same time, when an agency refuses to regulate a pollutant pursuant to a preemptive regime, it is difficult to argue that Congress consciously decided to adopt a *laissez faire* regime, insofar as it enacted legislation authorizing the agency to regulate.

Because there is an express preemption provision, the critical question for preemption of state regulation of GHG emissions by motor vehicles is how that provision is to be construed.²⁴¹ It preempts “any standard relating to the control of emissions from new motor vehicles or motor vehicle engines subject to this part.”²⁴² Whatever the collective implications of state standards for GHG emissions from motor vehicles, this text would appear to leave little doubt that state standards regulating GHG emissions are preempted. After *Massachusetts v. EPA*,²⁴³ it is clear that GHGs are “pollutants” within the scope of the Act, and therefore “subject to this part,” and California’s restrictions likewise clearly qualify as “standards relating to emissions from new motor vehicles.”²⁴⁴ California appears to recognize this and has applied for a waiver,²⁴⁵ which the EPA must grant unless it finds that the state standards are arbitrary and capricious, that the state does not need the standards to meet compelling and extraordinary conditions, or that the standards do not meet the general requirements for regulation of motor vehicle emissions under section 202(a) of the CAA.²⁴⁶

authority in favor of no regulation. See generally Robert L. Glicksman, *Nothing Is Real: Protecting the Regulatory Void Through Federal Preemption by Inaction*, 26 VA. ENVTL. L.J. 5 (2008).

²⁴⁰ Indeed, several of the participants in this Symposium focus on this issue. See Nina Mendelson, *A Presumption Against Agency Preemption*, 102 NW. U. L. REV. 695 (2008); Ernest Young, *Executive Preemption*, 102 NW. U. L. REV. 869 (2008); see also Nina Mendelson, *Chevron and Preemption*, 102 MICH. L. REV. 737 (2004).

²⁴¹ Nonetheless, the foregoing analysis might suggest that Congress should consider amendments to limit the scope of preemption or otherwise protect states when the EPA fails to regulate harmful pollutants.

²⁴² 42 U.S.C. § 7543(a) (2000).

²⁴³ 127 S. Ct. 1438.

²⁴⁴ See *id.* Before the Supreme Court’s decision in *Massachusetts v. EPA*, this was a more difficult question because one ground the EPA gave for not regulating GHGs was that they were not pollutants. Were this so, then GHGs would be outside the scope of the CAA altogether and thus (although the industry argued otherwise) not within the scope of the preemption provision. The Supreme Court, however, squarely held that GHGs are pollutants within the scope of the CAA and regulation of their emissions by motor vehicles would thus be within the scope of the statutory preemption provision.

²⁴⁵ See Lisa Friedman, *Smog Fighters Furious at Bush Administration*, L.A. DAILY NEWS, July 3, 2007, at N1 (describing opposition to California’s request for a waiver within the federal Department of Transportation).

²⁴⁶ See 42 U.S.C. § 7543(b)(1)(A)–(C) (2000). During the final stages of editing of this Article, the EPA denied California’s application for a waiver of the CAA’s preemption of state regulation of motor vehicle emissions. Press Release, U.S. EPA, America Receives a National Solution for Vehicle Green-

The second complicating factor is that the only currently available way to reduce GHG emissions in motor vehicles appears to be by increasing fuel economy. Thus, the regulation of GHG emissions has clear and direct practical implications for fuel economy standards, which are subject to a different regulatory regime. Under the Energy Policy and Conservation Act (EPCA), the NHTSA is authorized to establish corporate fuel economy standards for manufacturer motor vehicle fleets.²⁴⁷ State regulation of fuel economy standards for automobiles implicates the same kinds of uniformity

house Gas Emissions (Dec. 19, 2007), available at <http://yosemite.epa.gov/opa/advpress.nsf/d0cf6618525a9efb85257359003fb69d/41b4663d8d3807c5852573b6008141e5!OpenDocument> [hereinafter EPA, National Solution]. EPA Administrator Stephen Johnson provided several reasons for the denial in the press release announcing the decision. First, the denial allowed the Bush Administration to “mov[e] forward with a clear national solution—not a confusing patchwork of state rules.” *Id.* Second, President Bush signed the Energy Independence and Security Act of 2007 on the same day that EPA denied the waiver. Pub. L. No. 110-140, 121 Stat. 1492 (2007) (to be codified in scattered sections of 49 U.S.C.). That Act raised the CAFE standards for passenger automobiles to thirty-five miles per gallon by 2020. *Id.* § 102(a) (to be codified at 49 U.S.C. § 32,902(b)(2)). According to the EPA, efforts to achieve reductions in GHG emissions through implementation of the new, more stringent CAFE standards will be more effective than “a partial, state-by-state approach.” EPA, National Solution, *supra*. Third, California’s request for a waiver allowing it to regulate GHG emissions differs from all of California’s previous § 7543(b) waiver requests (none of which the EPA had ever completely denied) because previous petitions “covered pollutants that predominantly impacted local and regional air quality,” whereas GHGs “are fundamentally global in nature.” *Id.* As a result, California failed to satisfy one of the conditions for issuance of a waiver, that is, California failed to demonstrate that it needs the waiver “to meet compelling and extraordinary conditions.” *Id.*; see also California State Motor Vehicle Pollution Control Standards, 73 Fed. Reg. 12, 156 (Mar. 6, 2008).

A full discussion of the merits of the EPA’s decision is beyond the scope of this Article, as well as precluded by the timing of the decision. Nevertheless, the EPA’s position contains several obvious flaws. For example, as indicated above, see *supra* note 233, approval of California’s waiver would create two and only two standards, not the dreaded “patchwork” referred to by the EPA. This is true even though at the time the EPA denied California’s request, at least sixteen other states had already adopted California’s standards or announced their intention to do so. See Zachary Coile, *EPA Blocks State’s Bid to Curb Car Emissions; Ruling Sets Up Battle on Who Has the Right to Fight Global Warming*, S.F. CHRON., Dec. 20, 2007, at A1. The CAA only allows other states to adopt or enforce standards that differ from the EPA’s if they are identical to California’s standards. 42 U.S.C. § 7507; see also *supra* note 233 and accompanying text. Second, California regulators claim that the state’s GHG emissions controls would have forced automakers to sell cars in that state (and other states that adopt the California standards) that achieve greater fuel efficiency than the standards dictated by the Energy Independence and Security Act. See Juliet Eilperin, *EPA Chief Denies Calif. Limit on Auto Emissions: Rule Would Target Greenhouse Gases*, WASH. POST, Dec. 20, 2007, at A1. Third, the Supreme Court’s holding in *Massachusetts v. EPA* that the risk of flooding of state-owned land as a result of GHGs qualified as injury in fact that supported the state’s standing to sue makes the EPA’s claim that California’s need to address climate change is no different from that of any other state questionable, given the state’s long coastline. See *Massachusetts*, 127 S. Ct. at 1453–56; see also *infra* note 255 (describing some of the risks California faces from unabated climate change). For further discussion casting doubt on the persuasiveness of the EPA’s justifications for denying the waiver, see *infra* notes 253–61 and accompanying text.

²⁴⁷ 49 U.S.C. § 32,902(a), (c) (2000). The statute requires the NHTSA to set the standards at the “maximum feasible average fuel economy level,” after taking into consideration factors that include technological feasibility, economic practicability, the effect of other government standards on motor vehicle fuel economy, and the need to conserve energy. *Id.* § 32,902(f).

concerns as regulation of motor vehicle emissions, so it is not surprising that the statute includes an express preemption provision that bars the states from adopting regulations “related to fuel economy standards . . . for automobiles covered by an average fuel economy standard under [the EPCA].”²⁴⁸

Thus, in its challenge to California’s auto emissions standards for GHGs, the auto industry argued not only that those standards were preempted by the CAA, but also that California’s GHG controls are “related to fuel economy standards” and therefore expressly preempted by the EPCA.²⁴⁹ The NHTSA has advanced similar arguments in favor of preemption of GHG emissions standards.²⁵⁰ A California district court rejected the claim, concluding that California’s GHG emissions controls do not conflict with federal law by failing to require state regulators to consider economic practicability. The court disagreed that Congress intended the CAFE standards set by the NHTSA under the EPCA to provide “a level of protection from economic uncertainty by preventing states from promulgating regulations that upset the balance struck through the EPCA process.”²⁵¹

²⁴⁸ *Id.* § 32,919.

²⁴⁹ *Cent. Valley Chrysler-Jeep v. Goldstene*, 529 F. Supp. 2d 1151, 1174–75 (E.D. Cal. 2007). The industry also argued that the state regulatory program conflicts with the EPCA because it frustrates the balance between fuel economy and safety struck by the NHTSA. According to the industry, the CAFE program was designed to impose fuel economy standards that maximize fuel economy, while at the same time avoiding economic harm to the auto industry, maintaining consumer choice in vehicle availability, and ensuring vehicle safety, and the state regulatory program will frustrate the balance Congress struck among those goals. *Id.* at 1178.

²⁵⁰ *See, e.g., National Highway Traffic Safety Administration, Average Fuel Economy Standards for Light Trucks Model Years 2008–2011*, 71 Fed. Reg. 17,566, 17,668 (Apr. 6, 2006) (final rule) (“[M]anufacturers confronted with requirements for the reduction of tailpipe CO₂ emissions would look at the same pool of technology used to reduce fuel consumption. NHTSA concludes that it is disruptive to the orderly implementation of the CAFE program, and to NHTSA’s reasonable balancing of competing concerns, to have two different governmental entities assessing the need to conserve energy, technological feasibility, economic practicability, employment, vehicle safety and other concerns, and making inconsistent judgments about how quickly and how much of that single pool of technology could and should be required to be installed consistent with those concerns. EPCA does not specify how to weight each concern; thus, NHTSA determines the appropriate weighting based on the circumstances in each CAFE standard rulemaking. More important, ignoring the judgments made by NHTSA at the direction of Congress could result in setting standards at levels higher than NHTSA can legally justify under EPCA, increasing the risk of the harms that that body sought to avoid, e.g., serious adverse economic consequences for motor vehicle manufacturers and unduly limited choices for consumers.”). The Ninth Circuit in *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 508 F.3d 508 (9th Cir. 2007), held that the NHTSA’s 2006 CAFE standards for light trucks were arbitrary and capricious and that the NHTSA violated the National Environmental Policy Act in failing to prepare an environmental impact statement on the environmental impacts of and alternatives to the standards.

²⁵¹ *Goldstene*, 529 F. Supp. 2d at 1178. The court found that EPA approval of California’s GHG emission controls under section 209(b) of the CAA would promote both the CAA’s objective of achieving the greatest degree of emissions reduction achievable and the EPCA’s goal of implementing the maximum feasible average fuel economy. To the extent the state standards are inconsistent with the CAFE standards, the “NHTSA is empowered to revise its standards taking into account” the California regulations. Requiring the fuel efficiency standards to accommodate GHG emissions controls, rather

These arguments must be reassessed in light of *Massachusetts v. EPA*, however, insofar as that decision made clear that the CAA, including its preemption provisions, applies to GHGs.²⁵² Under the CAA, any state regulation of GHG emissions by motor vehicles must be pursuant to an EPA-approved waiver. The implications of the EPCA for state regulation of GHG emissions by motor vehicles are therefore less an issue of federal preemption of state law than of the interaction between two federal statutes. The question is whether Congress's decision to allow a modest departure from uniformity in regulating motor vehicle emissions or its desire for uniform fuel economy standards should take precedence.

Although a full analysis of this issue is beyond the scope of this Article, a few points are worth noting that suggest GHG waivers should be permitted under the CAA notwithstanding the provisions of the EPCA. The CAA is directly concerned with motor vehicle *emissions*, while the EPCA is focused on *fuel economy*. Normally, a statute dealing directly with a subject would take precedence over one that only indirectly implicates the subject.²⁵³ Moreover, giving effect to the CAA's waiver provisions would have only a minimal effect on uniformity because there would be at most two sets of requirements to meet: the federal standards and the California standards (which may be adopted by other states).²⁵⁴ By way of contrast, precluding the EPA from issuing a waiver for California's efforts to regulate GHG emissions would—as to GHGs—entirely thwart Congress's decision to allow California to play the role of innovator in restricting mobile source pollution.²⁵⁵

than vice versa, would be more consistent with the CAA's technology-forcing character. *Id.* at 1179; *see also id.* at 1168 (concluding that "Congress intended to allocate to EPA the broader scope of authority to regulate vehicle exhaust emissions for the more important purpose of safeguarding the public's health and welfare"); *id.* (interpreting the EPCA as evincing "Congress's intent to empower NHTSA to adapt its regulations developed through EPCA to accommodate emissions requirements" adopted or approved by EPA under the CAA to protect health and welfare). Indeed, the court stated that "it would be the very definition of folly if EPA were precluded from action simply because the level of decrease in [GHG] output is incompatible with existing mil[e]age standards under EPCA." *Id.* at 1170. The district court's conclusion that Congress intended the CAFE standards to give way to GHG emissions controls in the event of inconsistency also casts doubt on the viability of the EPA's reliance on the 2007 energy legislation's increase in CAFE standards as a reason to deny California's waiver application. *See supra* note 246.

²⁵² *Massachusetts v. EPA*, 127 S. Ct. 1438, 1459 (2007).

²⁵³ Insofar as Congress did not directly address the matter, it is reasonable to assume that it did not consider the interaction between fuel economy and emissions standards when it adopted the statutes. In the absence of strong evidence to the contrary, it is also reasonable to assume that Congress did not anticipate that adoption of a preemption provision for fuel economy standards would displace the CAA's waiver system for emissions.

²⁵⁴ *See supra* note 233.

²⁵⁵ One critical reason for the waiver program is congressional recognition of California's leadership role in the fight against automotive pollution—the state adopted mandatory controls on motor vehicle emissions in 1959, long before the federal government did. *See* JAMES E. KRIER & EDMUND URSIN, POLLUTION AND POLICY 103 (1977) (displaying a timeline of California initiatives). In similar fashion,

Indeed, the Supreme Court in *Massachusetts v. EPA* specifically rejected the claim that restrictions on GHG emissions from motor vehicles would conflict with the NHTSA's implementation of the CAFE standards under the ECPA. The EPA asserted that it lacks the power to regulate CO₂ emissions from motor vehicles because doing so would require it to tighten mileage standards, a task that Congress delegated exclusively to the NHTSA.²⁵⁶ The Court responded that the NHTSA's authority to set CAFE standards

in no way licenses EPA to shirk its environmental responsibilities. The EPA has been charged with protecting the public's 'health' and 'welfare,' a statutory obligation wholly independent of [the NHTSA's] mandate to promote energy efficiency. The two obligations may overlap, but there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency.²⁵⁷

The federal district court's reasoning in the Vermont litigation supports our analysis. The court concluded first that the relationship between the CAA's waiver provision and the EPCA's fuel economy standards provisions is not governed by preemption doctrine,²⁵⁸ but rather is a question of reconciling two federal statutes.²⁵⁹ Like the Supreme Court, the district

California has been the first state to adopt mandatory controls on emissions of GHGs from motor vehicles (as well as the first state to adopt an across-the-board set of controls for stationary sources). Congress also recognized "the unique problems facing California as a result of its climate and topography," which made the adverse effects of automotive pollutants such as ozone particularly severe in that state. H.R. REP. NO. 90-278, at 42 (1967); *see also id.* at 39–40 ("Although the situation may change, in the 15 years that auto emission standards have been debated and discussed, only the State of California has demonstrated compelling and extraordinary circumstances sufficiently different from the Nation as a whole to justify standards on automobile emissions which may, from time to time, need [to] be more stringent than national standards."). California does not face uniquely severe concentrations of CO₂, but its long Pacific coast may make it more susceptible to the risk of coastal flooding caused by sea levels that rise in response to global climate change. For a discussion of the possible links between global climate change, melting glaciers and ice sheets, and rising sea levels, see generally Glicksman, *supra* note 206. California could experience other adverse effects of global climate change. *See, e.g.,* Dean E. Murphy, *Study Finds Climate Shift Threatens California*, N.Y. TIMES, Aug. 17, 2004, at A19 (reporting on a study financed by the Department of Energy and the California Energy Commission that predicted a reduction in snow pack in the Sierra Nevada of seventy-three to ninety percent by the end of the century if fossil fuel use continues at its present pace; such a reduction would disrupt water supplies to the San Francisco Bay area and the Central Valley); A.L. Westerling et al., *Warming and Earlier Spring Increases Western U.S. Forest Wildfire Activity*, 313 SCIENCE 940 (Aug. 18, 2006) (describing a University of California study linking increased wildfire activity to global climate change).

²⁵⁶ *Massachusetts*, 127 S. Ct. at 1461–62.

²⁵⁷ *Id.* at 1462 (citations omitted).

²⁵⁸ *Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 2d 295, 343–44 (D. Vt. 2007). The court noted that "[t]he Supremacy Clause is not implicated when federal laws conflict or appear to conflict with one another. In such a case courts have a duty to give effect to both provisions, if possible." *Id.* (citations omitted).

²⁵⁹ *Id.* at 347. According to the court, once the EPA issues a waiver to California, the emissions controls approved by the waiver (as well as identical controls adopted by any other state adopted pursu-

court perceived no conflict between the two federal laws, adding that if a conflict were to develop, the EPA and the NHTSA “are capable of and even encouraged to cooperate in a joint accommodation or resolution.”²⁶⁰ In the alternative, the district court held that the EPCA does not preempt the Vermont standards, either expressly or implicitly. Of particular relevance for analysis of ceiling preemption based on the need for uniformity is the court’s conclusion that the EPCA did not expressly preempt state standards because Congress’s desire to achieve uniformity of fuel economy standards did not extend to vehicle emissions controls.²⁶¹

Under our framework, the benefits of uniform standards provide a stronger justification for ceiling preemption of state environmental regulation of motor vehicles than does a desire to avoid negative externalities, to achieve the benefits of resource pooling, or to prevent a race to the bottom.²⁶² For that reason, the inclusion of an express provision in both the CAA and the EPCA to preempt state regulation of motor vehicle emissions and fuel economy standards is consistent with our framework. Even in this context, however, Congress recognized state concerns and incorporated a waiver provision in the CAA that accommodates to some degree a state’s decision to adopt more protective regulation of emissions, while minimizing the degree to which state regulation will disrupt Congress’s desire to achieve uniformity. This result is an excellent example of the political safeguards of federalism at work. Insofar as the EPA is not subject to those political safeguards, Congress and the courts should be especially reluctant to

ant to section 177 of the CAA, 42 U.S.C. § 7507) become “a motor vehicle standard of the [federal] government, with the same stature as a federal regulation.” *Crombie*, 508 F. Supp. 2d at 347.

²⁶⁰ *Crombie*, 508 F. Supp. 2d at 350 (citing Exec. Order No. 13,432, 72 Fed. Reg. 27,717 (May 14, 2007)).

²⁶¹ *Id.* at 353–54. In addition, there was no express preemption because the state’s GHG emissions controls did not qualify as a “de facto fuel economy standard.” *Id.* at 351. With respect to implied preemption, the district court held that the EPCA does not occupy the field of regulation of CO₂ emissions from motor vehicles. *Id.* at 354–55. The court found no “inherent conflict” between the EPCA fuel economy mandate and the control of GHG emissions, *id.* at 356, and concluded that state GHG emissions controls do not disrupt the balance struck by Congress between reducing emissions levels and improving fuel economy, rejecting a variety of industry arguments against Vermont’s emissions control regulations. *Id.* at 358–92 (rejecting industry arguments that the controls were not technologically feasible or economically practical, would deprive consumers of choice in vehicles, would create hardship for the industry and cause the loss of jobs, and would reduce vehicle safety). The recent adoption of the Energy Independence and Security Act should not affect this analysis. See Pub. L. No. 110-140, § 3, 121 Stat. 1492 (2007) (to be codified in scattered sections of 49 U.S.C.) (“Except to the extent expressly provided . . . nothing in this Act or an amendment made by this Act supersedes, limits the authority provided or responsibility conferred by, or authorizes any violation of any provision of law (including a regulation), including any energy or environmental law or regulation.”).

²⁶² The adoption of state motor vehicle emissions controls on GHGs raises additional issues relating to the balancing of competing interests that are discussed *infra* Part II.C.

allow the EPA, through its failure to regulate GHGs, to displace all state authority to do so.²⁶³

b. State regulation of stationary source emissions.—Efforts by the states to regulate GHGs from stationary sources, the most significant category of which are large electric power plants,²⁶⁴ present different questions because the transaction costs created by varying state standards are much lower. Stationary sources do not move across state lines. Moreover, stationary sources are not generally mass-produced, so it is unnecessary to gear up multiple production methodologies to meet both federal emissions controls promulgated under the CAA and any more stringent state standards.²⁶⁵

These differences are reflected in the CAA itself, insofar as there is no express preemption provision applicable to stationary sources and the CAA clearly preserves the authority of states to regulate stationary sources more aggressively than required by federal law.²⁶⁶ If CO₂ were to be designated as a criteria pollutant, for example, the states would have the primary authority to decide which controls to impose on various kinds of stationary sources located within their borders.²⁶⁷ The rationale that supports allowing the states to decide how to allocate the burdens of reducing ozone pollution, for example, would also necessarily support allowing the states to make

²⁶³ Cf. Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 163 (2006) (“Preemption . . . is the real boogeyman of public interest lawmaking because it prevents the political process from policing itself.”). In the wake of the EPA’s denial of California’s application for a waiver to allow it to regulate GHG emissions from automobiles, *see supra* note 246, environmental groups and even some industry analysts characterized the waiver denial as apparently “a reward to the [auto] industry, in return for dropping its opposition to the energy legislation.” Micheline Maynard, *E.P.A. Says 17 States Can’t Set Greenhouse Gas Rules for Cars*, N.Y. TIMES, Dec. 20, 2007, at A1.

²⁶⁴ *See, e.g.*, Thomas Gremillion, Comment, *Environmental Defense v. Duke Energy Corporation*, 31 HARV. ENVTL. L. REV. 333, 343 (2007) (“Electric utilities’ carbon dioxide, methane, and nitrous oxides emissions account for nearly twenty-eight percent of the United States’ greenhouse gas emissions, which themselves represent nearly a quarter of the world’s anthropogenic emissions each year.”); Daniel J. Grimm, Note, *Global Warming and Market Share Liability: A Proposed Model for Allocating Tort Damages Among-Co Producers*, 32 COLUM. J. ENVTL. L. 209, 228 (2007) (“[E]missions from the electric power industry composed approximately 41 percent of energy-related U.S. CO₂ emissions in 2000.”).

²⁶⁵ *See* Thomas Magnusson, Fredrik Tell & Jim Watson, *From CoPS to Mass Production? Capabilities and Innovation in Power Generation Equipment Manufacturing*, 14 INDUS. & CORP. CHANGE 1, 1 (2005) (characterizing traditional large-scale power plants as “high-cost, unit-produced and customized,” and contrasting them with dispersed microgenerators, which are “less complex, standardized, easy to install and designed for mass production”).

²⁶⁶ Congress included an express floor preemption provision, 42 U.S.C. § 7416 (2000), but there is no corresponding provision for ceiling preemption.

²⁶⁷ *See id.* §§ 7407(a), 7410; *Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 79 (1975) (concluding that “so long as the ultimate effect of a State’s choice of emission limitations is compliance with the national standards for ambient air, the state is at liberty to adopt whatever mix of emission limitations it deems best suited to its particular situation”).

similar decisions with respect to CO₂ emissions. Site-specific state decisions on the allocation of CO₂ emissions create no greater transaction costs than the SIPs and Title V permits²⁶⁸ issued under the CAA for the other criteria pollutants. Likewise, if the EPA were to adopt national emissions standards for new stationary sources under section 111 of the Act²⁶⁹ or national emissions standards for hazardous air pollutants under section 112²⁷⁰ that apply to GHGs, the current statute would allow states to adopt their own controls, provided they were at least as stringent as the federal standards.²⁷¹

In view of these provisions, concerns for uniformity cannot be characterized as particularly central to the purposes of the CAA's regulation of stationary sources.²⁷² In addition, as noted previously, the EPA's failure to regulate GHG emissions means that implied ceiling preemption would create a regulatory void that states would be precluded from filling. Thus, the purpose of promoting uniformity so as to reduce transaction costs would not appear to be sufficiently strong to warrant ceiling preemption of state regulation of stationary sources.

5. *NIMBY*.—As indicated above, federal intervention in environmental regulatory matters is sometimes justified as a means of preventing states from trying to exclude important activities that create undesirable health, safety, or environmental risks.²⁷³ In essence, the state or locality in which the activity is located bears all the costs, but the economic benefits of the activity are exported to a significant degree to other states. Thus, a state prohibiting these activities or imposing restrictions with the same practical effect often hopes to enjoy the benefits of the activities when they wind up locating in another state.²⁷⁴ The NIMBY problem provides a strong justification for exclusive federal control of certain regulatory regimes, such as those governing hazardous waste transportation, nuclear waste generation or disposal, or the operation of facilities that present attractive targets for terrorist attacks.²⁷⁵

²⁶⁸ The CAA requires states to develop permit programs as a means of imposing and enforcing controls on individual sources. The permit program is codified as Title V of the CAA, 42 U.S.C. §§ 7661–7661f.

²⁶⁹ *Id.* § 7411.

²⁷⁰ *Id.* § 7412.

²⁷¹ *Id.* § 7416.

²⁷² Moreover, the absence of a ceiling preemption provision for stationary sources gives rise to a negative inference insofar as the statute includes an express ceiling preemption provision for motor vehicle emissions standards.

²⁷³ *See supra* notes 101–10 and accompanying text.

²⁷⁴ This is a variant on the free rider problem inherent in the production of public goods. *See supra* note 1 (discussing collective action theory).

²⁷⁵ The Department of Homeland Security has taken the position that it has the power to preempt state chemical security regulations for high-risk facilities. *See* Department of Homeland Security,

Responding to NIMBY problems, however, is not a central purpose of the CAA and lends no support to ceiling preemption of state regulations directed at global climate change. If anything, the CAA reflects a desire to combat a race to the bottom among states, rather than to combat excessive regulation based on a desire to avoid environmental harms.²⁷⁶ Given the unique characteristics of GHGs, moreover, states have no incentive to engage in NIMBYism. A CO₂-belching power plant will have the same impact on global climate change whether it is located in southwestern Kansas, southeastern Alabama, or Beijing, even if the magnitude and kind of threats facing each of those areas as a result of climate change may differ.²⁷⁷ The exclusion of such a power plant from a state concerned about its vulnerability to global climate change will not shield the state from the adverse impacts of climate change if the plant is located and begins to operate elsewhere.²⁷⁸ Global climate change from GHG emissions actually creates the reverse (race to the bottom) incentives because a state could lower its standards to compete with other states for the economic benefits of a new power plant without increasing environmental costs from GHG emissions to its own residents, who would experience the same harms regardless of where the plant is located.

C. *Secondary Purposes and Balancing*

Although the environmental purposes of the CAA provide little basis for ceiling preemption of state regulation of GHG emissions (with the principal exception of motor vehicle emissions), analysis of ceiling preemption would not be complete without some consideration of other purposes underlying the Act. The primary focus of the CAA was to achieve cleaner and healthier air by responding to collective action problems likely to cause underregulation by states of air-polluting activities. As a secondary matter, however, Congress did not disregard the economic burdens of regulation. Thus, the statutory text and legislative history contain various statements indicating the intent to strike a balance between environmental protection and regulatory burdens.²⁷⁹ In principle, it is possible to argue for ceiling

Chemical Facility Anti-Terrorism Standards, 71 Fed. Reg. 78,276, 78,292 (Dec. 28, 2006) (advance notice of rulemaking) (declaring high-risk chemical facilities to be matters of national security).

²⁷⁶ See Glicksman, *supra* note 13, at 736; *supra* note 90 and accompanying text.

²⁷⁷ See Erwin Chemerinsky et al., *California, Climate Change, and the Constitution*, 37 ENVTL. L. REP. 10,653, 10,653 (2007) (“The threat of climate change does not hinge on where GHG emissions occur. On the contrary, because these gases quickly assimilate into the global atmosphere, emissions in Florence, Italy, have the same global impact as those releases in Florence, California.”).

²⁷⁸ There may be other reasons that a state or local government may object to the location of a power plant within its jurisdiction, including the emission of more localized pollutants, such as particulate matter. Such objections may justify preemption of state controls on those emissions to avoid NIMBYism, but they do not support ceiling preemption of state or local controls on GHG emissions.

²⁷⁹ See, e.g., 42 U.S.C. § 7401(b)(1) (2000) (setting forth the purpose of protecting and enhancing air quality to promote public health and welfare and the productive capacity of the U.S. population); *id.* § 7470(3) (declaring the purpose of insuring that economic growth will occur in areas with relatively

preemption on the basis that more restrictive regulation of GHGs (or other pollutants) would compromise the purpose of reducing regulatory burdens or because it would upset the balance struck under the federal statute.²⁸⁰

There is, however, a critical difference between the intent to strike a balance in making federal regulatory decisions and the intent to displace state authority to strike a different balance. Of course, regulators or regulated entities might prefer ceiling preemption because of a policy preference for less environmental regulation or because of a general mistrust of state and local political processes, but in federalism terms that would not distinguish environmental regulation from any other regulatory subject matter, including subjects, such as criminal law, that are areas of traditional state authority.²⁸¹ Ceiling preemption based on striking a balance between environmental and economic concerns is not justified unless there are collective action problems that create incentives for states to overregulate.

Focusing on the economic burdens of regulation, there are few collective action problems that would create incentives for states to overregulate. For example, states limiting GHG emissions cannot generally export the economic burdens of those regulations to other states, and state legislators are politically accountable for the regulatory burdens they impose within the state.²⁸²

clean air “in a manner consistent with the preservation of existing clean air resources”); *see also* *Chevron U.S.A. Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 851 (1984) (characterizing the CAA’s permit program for new and modified major stationary sources in nonattainment areas as an effort by Congress “to accommodate the conflict between the economic interest in permitting capital improvements to continue and the environmental interest in improving air quality”).

²⁸⁰ This argument might apply in some contexts to other kinds of considerations that must be balanced against environmental benefits. For example, the CAFE standards adopted by the NHTSA represent that agency’s effort to comply with its obligation under the EPCA to balance a series of health, safety, energy policy, and economic factors, which the NHTSA has argued would be disrupted by regulation of GHG emissions from motor vehicles. *See supra* note 250. If efforts to comply with a state’s tailpipe emissions standards on GHGs require states to manufacture and sell a different kind of fleet than they would otherwise have done in meeting their EPCA obligations, the balance struck by the federal agency might be disrupted. Manufacturers, for example, might decide to build smaller hybrid cars than they would need to manufacture to comply with the applicable CAFE standards. If the occupants of these vehicles are more susceptible to injuries from accidents than the occupants of the vehicles they replaced would have been, the result might be a decline in safety below the level that the NHTSA concluded was desirable. Such a disruption of the federally struck balance raises legitimate concerns, but preemption of state authority should not be inferred absent clear evidence that Congress intended to prevent states from striking a different balance than the federal agency struck.

²⁸¹ *See United States v. Lopez*, 514 U.S. 549, 564 (1995) (rejecting the government’s economic effects argument for federal regulation of gun possession in schools in part because under that argument, “it is difficult to perceive any limitation on federal power, even in areas such as criminal law enforcement or education where States historically have been sovereign”).

²⁸² *See supra* notes 181–83 and accompanying text. If anything, because reduced GHG emissions would produce the same world-wide environmental benefits regardless of where they occur, the state is bearing the regulatory costs but externalizing the environmental benefit. Externalities may arise, however, when states regulate products sold within the state but produced elsewhere, an issue that arises in connection with motor vehicles. *See supra* notes 115–18 and accompanying text. Aside from motor

One situation in which regulatory burdens may be externalized is the regulation of CO₂ emissions from electric utilities that generate power through the combustion of fossil fuels, which generate a significant percentage of the CO₂ emissions in the United States.²⁸³ The stringency of environmental regulations applicable to utility facilities obviously affects the price of electricity that the regulated utility providers charge their customers. Because many of the nation's utilities are connected in a massive interstate grid and wheel power to one another, sometimes over long distances, the stringent regulation of CO₂ emissions in one state could cause electricity prices to rise in other states.²⁸⁴ These concerns might justify a legislative decision to preempt state regulation of CO₂ emissions,²⁸⁵ but such a judgment is not reflected in the language or history of the CAA strongly enough to overcome the presumption against preemption.

Resource pooling issues, race-to-the-bottom arguments, and NIMBY concerns do not provide much support for ceiling preemption in this context either. The limited resources of individual states would not tend to cause overregulation or underprotection of economic rights when it comes to GHG regulation.²⁸⁶ And race-to-the-bottom arguments are particularly weak in the context of GHG emissions because aggressive regulation of GHGs by states and localities cannot produce concentrated environmental amenities. Thus, even if communities were somehow engaged in a race to

vehicles, there appear to be few mass-produced products that are shipped throughout the United States that emit GHGs. In other contexts, such as products liability, the problem of exporting regulatory burdens through regulation of products sold in a state is a much more sweeping one.

²⁸³ Janine Maney, *Carbon Dioxide Emissions, Climate Change, and the Clean Air Act: An Analysis of Whether Carbon Dioxide Should Be Listed as a Criteria Pollutant*, 13 N.Y.U. ENVTL. L.J. 298, 370 (2005) (citing U.S. DEP'T OF STATE, U.S. CLIMATE ACTION REPORT—2002, THIRD COMMUNICATION OF THE UNITED STATES OF AMERICA UNDER THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE 226 (2002), available at <http://yosemite.epa.gov/oar/globalwarming.nsf/content/ResourceCenterPublicationsUSClimateActionReport.html>) (stating that electrical utilities accounted for twenty-nine percent of U.S. emissions from 1990 to 1999).

²⁸⁴ See Kirsten H. Engel & Scott R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 ECOLOGY L.Q. 183, 230 (2005) (“[A]s a result of electricity deregulation in many states, the reach of electricity grids and markets is now regional, if not national. A patchwork of different state and regional climate regulations could increase costs and to a degree undermine industry competition.”).

²⁸⁵ If Congress is concerned about the economic disruptions that such price hikes might cause, it could address this problem through a variety of means other than ceiling preemption of state GHG regulation. For example, it could address the issue through rate regulation or the provision of federal subsidies to those consumers hardest hit by price increases traceable to the imposition of controls on emissions. Those options would prevent the state seeking to regulate emissions from exporting economic burdens to other states while protecting the environmental policy decision of the regulating state.

²⁸⁶ It might be argued that lack of information could lead states to overregulate because of information processing errors that lead to exaggerated public fears of environmental harms. See *supra* note 125. But as noted previously, once information has been produced the federal and state governments are acting on the same information and responding to the same public fears. Thus, it not clear why the federal judgment about the legitimacy of those fears is inherently more likely than the state's judgment to be accurate.

the top in which they compete to overregulate pollution-causing activities so as to attract desirable citizens or businesses,²⁸⁷ the regulation of GHG emissions would not be an attractive means of competing. A GHG-emitting plant in another state will have the same environmental impact as it would have had if it were located in the state whose law precluded it. For the same reason, state and local governments have no incentive to engage in NIMBYism regarding GHG emissions.

Perhaps the strongest argument for ceiling preemption based on the legislative purpose of minimizing regulatory burdens can be derived from uniformity concerns. Even outside of the motor vehicle context, uniform federal regulation will reduce the transaction costs for regulated entities. Indeed, it is not unusual for industries facing the potential application of regulatory standards that differ from state to state to support the adoption of federal regulation (sometimes even stringent regulation), provided it preempts any state regulations that deviate from the federal program.²⁸⁸ Some industries that emit GHGs have expressed support for mandatory federal controls precisely because they fear being subject to a welter of regulatory regimes that differ from state to state in the absence of preemptive federal regulation.²⁸⁹

Nonetheless, this argument is inherent in any federal regulation of any field. Thus, in the absence of an express preemption provision or clear evidence that a major purpose of the CAA was to impose uniform federal standards so as to minimize transaction costs for regulated entities, a general concern for regulatory burdens should not be sufficient to support implied ceiling preemption of state regulation of GHG emissions on uniformity grounds. In this regard, the differences between motor vehicle emissions and emissions from stationary sources are particularly instructive. In the context of motor vehicle emissions, where the transaction costs of nonuniform state regulation are especially great, Congress focused on uniformity concerns and incorporated express preemption provisions. As to stationary sources, however, for which transactions costs of nonuniform state regulation are less significant, there is no express preemption provision and the CAA expressly preserves the authority of states to regulate more aggressively than the federal government.²⁹⁰

The critical point here is that the primary goal of the CAA is to reduce air pollution, and that secondary economic goals should not be sufficient, without more, to establish the requisite preemptive intent. A recent deci-

²⁸⁷ See *supra* notes 128–29 and accompanying text.

²⁸⁸ Jonathan H. Adler, *Judicial Federalism and the Future of Federal Environmental Regulation*, 90 IOWA L. REV. 377, 466 (2005); Eric Lipton & Gardiner Harris, *In Turnaround, Industries Seek U.S. Regulations*, N.Y. TIMES, Sept. 16, 2007, at A1.

²⁸⁹ E.g., Felicity Barringer, *A Coalition for Firm Limit on Emissions*, N.Y. TIMES, Jan. 19, 2007, at C1.

²⁹⁰ 42 U.S.C. § 7416 (2000).

sion by the Court of Appeals for the Ninth Circuit, *Oxygenated Fuels Ass'n v. Davis*,²⁹¹ illustrates the appropriate approach to secondary purposes under our framework. The CAA at one time required that gasoline sold in heavily polluted parts of the country must contain a minimum oxygen content by weight.²⁹² Initially, to meet the oxygen content requirements, gasoline manufacturers added oxygenate fuel additives to their products. Methyl tertiary butyl ether (MTBE) and ethanol were the two most widely used additives.²⁹³ After determining that MTBE poses risks of groundwater contamination from leaking storage tanks, California banned MTBE as a fuel additive within the state. A trade association of MTBE manufacturers sued the state, claiming that the CAA implicitly preempted the state's ban because the state ban conflicted with the statutory purposes of giving gasoline producers unrestricted choice among oxygenate fuel additives and of ensuring an adequate and reasonably priced supply of oxygenated gasoline.²⁹⁴

The Ninth Circuit dismissed both arguments. Beginning with the proposition that various provisions of the CAA reflected the intent to preserve state authority,²⁹⁵ including one that explicitly retained special discretion for California to restrict fuel additives,²⁹⁶ the court found no evidence in the text or legislative history to support the conclusion that state regulation of fuel additives would conflict with the congressional design. "There is some evidence," the court found, "that the EPA is required to be [oxygenate] neutral, but there is none that the states must also be neutral."²⁹⁷ The Ninth Circuit's rejection of the association's claim that the state ban would improperly disrupt the gasoline market is even more revealing as to the limited role that secondary purposes should play in preemption analysis:

The central goal of the Clean Air Act is to reduce air pollution. . . . [The association] has offered virtually no support for its assertion that the Clean Air Act's goals—for purposes of preemption analysis—are a smoothly functioning market and cheap gasoline. It is questionable whether a smoothly functioning market should be considered a "goal" of the Clean Air Act; the statutory text describing the purposes of the Act mentions no such goal. We take it as true that Congress wanted to reduce pollution caused by motor vehicles, but at the same time did not want to harm the nation's economy by causing gasoline prices to rise substantially. But saying that Congress might not have wanted to

²⁹¹ 331 F.3d 665 (9th Cir. 2003).

²⁹² 42 U.S.C. § 7545(k)(2)(B), (m)(2)(B). This requirement was part of an effort to bolster the use of "clean fuels" that are inherently less polluting than those already on the market. Congress repealed the oxygenate requirement in the Energy Policy Act of 2005, Pub. L. No. 109-58, § 1504, 119 Stat. 594, 1077 (2005).

²⁹³ *Oxygenated Fuels*, 331 F.3d at 667.

²⁹⁴ *Id.* at 670.

²⁹⁵ 42 U.S.C. § 7401(a)(3), (b)(4), (c).

²⁹⁶ *Id.* § 7545(c)(4)(B).

²⁹⁷ *Oxygenated Fuels*, 331 F.3d at 672.

cause a substantial increase in gasoline prices is not the same as saying that assuring inexpensive gasoline was a goal of the Act.²⁹⁸

Invoking the presumption against preemption of state authority in areas of traditional state control (such as environmental regulation), the court found insufficiently clear evidence of a congressional intent to oust state regulation of fuel additives to invalidate California's ban.²⁹⁹

The analysis in the fuel additive case does not preclude Congress from preempting state regulation that would frustrate the secondary purposes associated with environmental legislation. It simply cautions courts not to find preemption based on conflicts with those purposes absent clear indicia of congressional intent, preferably on the face of the statute. In the same way, state regulation of GHG emissions from stationary sources might interfere with secondary goals of the CAA, including balancing environmental protection and economic growth. But in the absence of a much clearer expression from Congress that states are precluded from striking a balance different than the one struck by the EPA, these goals do not support implied ceiling preemption of state regulation of GHG emissions.

D. Federal Cap-and-Trade Programs

As a bonus, we offer some preliminary thoughts about a final form of federal regulation of GHG emissions: cap-and-trade programs.³⁰⁰ The regional cap-and-trade program established by the RGGI initiative of the northeastern and mid-Atlantic states provides one example.³⁰¹ The Kyoto Protocol and the European Union's program for controlling CO₂ emissions both allow emissions trading under a cap-and-trade program.³⁰² The legislation introduced in Congress to establish mandatory controls on CO₂ emissions in the United States also has tended to rely on cap-and-trade approaches.³⁰³ It seems highly likely, then, that any adopted federal legislation directed at climate change will authorize emissions trading.

²⁹⁸ *Id.* at 673 (citations omitted).

²⁹⁹ *Id.*

³⁰⁰ Under a cap-and-trade program, total emissions of a given pollutant are capped and businesses are allocated a proportion of the total as emissions allowances, which can then be used, sold, or traded. The theory is that market forces will encourage low-cost pollution avoiders to reduce their emissions and sell their allowances, which will in turn be purchased by polluters for whom it would be costly to reduce emissions. In this way, market forces will lead to an efficient allocation of the costs of reducing pollution. The level at which the government sets the cap affects whether the aggregate amount of allowable pollution is efficient, but a trading program is designed to assure efficiency of pollution reduction efforts, rather than to assure an efficient overall level of pollution. Thus, even if the overall cap is too high or too low, market forces would still lead to the reduction of pollution by those polluters who can most efficiently do so.

³⁰¹ See *supra* note 175 and accompanying text.

³⁰² See, e.g., HUNTER ET AL., *supra* note 179, at 691–94, 705–11.

³⁰³ E.g., S. 843, 108th Cong. § 704 (2003).

Assuming that a federal cap-and-trade system is adopted for GHG emissions, the question becomes the extent to which ceiling preemption would be justified. The “cap” portion of such a program reflects conventional justifications for federal environmental regulations, particularly externalities and the race to the bottom, that would not generally support ceiling preemption, but the “trade” component reflects a legislative judgment that market forces would lead to the most efficient allocation of pollution reduction obligations. Restrictions by states on trading of federal allowances would tend to undermine the efficiency of that market, but it does not follow inevitably that the cap-and-trade system will or should preempt state regulation.

The answer to that question depends on the impact of the state restrictions on the market and the state interests that might justify restrictions. The most likely form of state regulation would be the adoption (or retention) of state laws that restrict GHG emissions by sources within the state.³⁰⁴ Such a regulation would tend to distort the market for efficient allocation of emissions in two ways. First, it would prevent high-cost pollution avoiders within the state from using emissions allowances, thus forcing them either to reduce emissions or to locate in another state. Second, and as a result of the first effect, it would reduce the demand for and increase the supply of allowances in other states, which means that at the margins some sources that would have sold allowances and reduced emissions in the absence of the state regulatory program will consume or purchase allowances and pollute instead.

Notwithstanding this effect on the market, there may be state interests that would justify permitting this sort of restriction on trades as a general matter, although they would not appear to apply to GHGs. While a cap-and-trade program promotes economically efficient allocation of the costs of reducing pollution, it does nothing to promote efficient allocation of environmental harms. Put differently, high-cost pollution avoiders may be located in areas in which the costs of pollution are also particularly high (such as densely populated areas or critical and widely used aquifers). In addition, if individual polluters may purchase unlimited allowances, there is a potential for the creation of “hot spots” that states may legitimately wish to prevent. These points are well illustrated by the example of mercury pollution.

In 2005, the EPA issued regulations for mercury emissions from coal-fired electric utilities that established a cap-and-trade program under which allowances are readily transferable among all regulated facilities.³⁰⁵ Be-

³⁰⁴ A state law that directly restricts purchases would have essentially the same effect.

³⁰⁵ Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg. 28,606 (May 18, 2005) (codified at 40 C.F.R. pts. 60, 72 & 75 (2006)). The regulations reflect the EPA’s conclusion that such an approach represents the most cost-effective way to achieve reductions in mercury emissions from power plants. *Id.*

cause mercury is a toxic pollutant that tends to concentrate in the vicinity of the emissions source, however, if a facility regulated under a cap-and-trade program purchases large numbers of allowances, residents located near the purchasing source may be exposed to dangerously high levels of mercury.³⁰⁶ Thus, a significant number of states have either prohibited sources within the state from participating in the mercury cap-and-trade program or restricted their ability to do so.³⁰⁷ Although these restrictions interfere with the market for allowances, the EPA's rule recognizes the states' interest in avoiding hot spots and explicitly allows states to opt out of the trading scheme³⁰⁸ and to adopt more stringent controls.³⁰⁹

For pollutants that tend to stay near the emitting sources and may create hot spots, there are powerful reasons for federal regulators to respect the state's interest in preventing concentrations of pollutants and no particular reason to believe that such regulations would be the result of collective action problems that distort state incentives.³¹⁰ Such restrictions do not in-

³⁰⁶ See Lisa Heinzerling & Rena Steinzor, *A Perfect Storm: Mercury and the Bush Administration*, 34 ENVTL. L. REP. 10,297 (2004); Lisa Heinzerling & Rena Steinzor, *A Perfect Storm: Mercury and the Bush Administration, Part II*, 34 ENVTL. L. REP. 10,485 (2004).

³⁰⁷ See Margaret Kriz, *States Blowing Out the Fuse on Mercury Rule*, ENVTL. F., Nov./Dec. 2006, at 6, 6 (indicating that twenty-four states have approved or are in the process of approving restrictions on mercury emissions from coal-fired power plants that are more stringent than those adopted by the EPA in 2005); see also John Pendergrass, *States Rolling Out Mercury Cut Plans*, ENVTL. F., Jan./Feb. 2007, at 10, 10 (describing state efforts to reduce mercury emissions below federally mandated levels, including programs that completely prohibit trading of mercury emissions allowances).

³⁰⁸ 40 C.F.R. § 60.24(h) (2005); see also Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg. at 28,624 (stating that for "States that elect not to participate in an EPA-managed cap-and-trade program, their respective State [mercury] budgets will serve as a firm cap"); *id.* at 28,640 ("States, in fact, can choose not to participate in the optional cap-and-trade program. However, EPA believes that a cap-and-trade system for the power sector is the best approach for reducing Hg emissions and EPA's analysis assumes that States will adopt this more cost effective approach.").

³⁰⁹ 40 C.F.R. § 60.24(g) (2005); see also Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg. at 28,632 ("States remain authorized to require emissions reductions beyond those required by the State budget, and nothing in the final rule will preclude the States from requiring such stricter controls and still being eligible to participate in the Hg Budget Trading Program.").

³¹⁰ In response to pressure from federal legislators, for example, the EPA has reportedly considered adopting its own restrictions on trading of benzene emissions credits among oil refineries as a means of addressing potential hot spots. See Anthony Lacey, *EPA May Scale Back Benzene Credit Trading in Final Air Toxics Rule*, INSIDE E.P.A. WEEKLY, Feb. 2, 2007, at 1, 8-9. Nevertheless, when the EPA issued its regulations for controlling emissions of hazardous air pollutants, including benzene, from motor vehicles, in 2007, it decided not to impose geographic restrictions on trading based on its finding that doing so could reduce refiners' incentives to generate credits and "hinder trading essential to this program." Control of Hazardous Air Pollutants from Mobile Sources, 72 Fed. Reg. 8428, 8489 (Feb. 26, 2007). It did, however, put a ceiling on the total content of benzene in gasoline produced after 2011. See *id.* at 8477 (stating that "credits may not be used to demonstrate compliance with the 1.3% maximum average standard"); *id.* at 8484 (explaining that a maximum average cap ensures "that the benzene content of gasoline produced by each refiner . . . will average no higher than this standard, regardless of the use of credits"); 40 C.F.R. § 80.1230(b)(2) (2005). More to the point, the federal regulations will not

volve the exportation of economic burdens to other states.³¹¹ Although the state's restrictions on the purchase of allowances has the potential to affect prospective out-of-state sellers,³¹² the restrictions will be facially neutral; in-state as well as out-of-state sales will be affected. Thus, while such restrictions may cause minor disruptions of the market, they may be justified by legitimate state concerns and are not likely to reflect distorted incentives caused by collective action problems.³¹³

These arguments are irrelevant to the regulation of GHG emissions, however, because the effects of GHG emissions on global climate change are not localized and there is no potential for the creation of hot spots.³¹⁴ Nonetheless, a state might decide to restrict purchase and use of allowances because it believes the federal cap is too generous and that greater reductions in GHG emissions are needed.³¹⁵ There is no particular reason to believe this judgment would be the product of a collective action problem that distorts the state's regulatory incentives. On the other hand, in the context of GHGs, such regulation by states would disrupt the efficiency of the market for allowances without any corresponding environmental benefit because out-of-state sources would purchase (at somewhat lower cost) the excess allowances from sources within the state and the same total amount of GHGs would be emitted.

Nonetheless, Congress might wish to facilitate state efforts to further reduce GHG emissions by capping the total federal allowance within a state at the level of the state's more stringent pollution controls, thus ratcheting down the overall cap established by federal law. After all, the primary goal of a cap-and-trade program is the reduction of emissions, which might weigh more heavily than the goal of preventing any disruption of the market for allowances. Such an approach would also prevent sources in states

affect California's preexisting standard, which is more stringent than the new federal standards. *Id.* § 80.1236.

³¹¹ It might be argued, by analogy to the taxation of federal institutions in *McCulloch*, see *supra* notes 62–66 and accompanying text, that the disruption of the cap-and-trade market for allowances imposes burdens on the federal program that are borne by all the states, while the environmental benefits of preventing hot spots are concentrated locally. By the same token, however, other states are externalizing the environmental costs of activities causing unsafe concentrations of pollution elsewhere. Thus, any congressional decision to preempt in this area should carefully consider the states' interests in protecting their citizens from significant environmental harms.

³¹² If there are fewer allowance buyers competing for allowances in the cap-and-trade market, the price sellers are able to charge for an allowance will fall.

³¹³ One exception would be if there is a NIMBY problem, in the sense that states have an incentive to limit purchases so as to force environmentally hazardous, but necessary, activities elsewhere. In such cases, ceiling preemption to protect a cap-and-trade program may be necessary, but it might also be necessary to ensure that federal regulation addresses the hot-spot problem in some way.

³¹⁴ See *supra* note 277 and accompanying text. On the other hand, some states might bear the costs of climate change more heavily, particularly states with significant coastlines.

³¹⁵ See, e.g., Chemerinsky, *supra* note 277, at 10,655 (claiming that one of California's objectives in regulating GHG emissions "is to reduce the impact that California has on climate change—a problem of global dimensions").

with stringent regulations from flooding the market, causing a decline in the value of an allowance in other states.

Instead of, or in addition to, restricting the purchase or use of allowances, state regulation might restrict or prevent the sale of allowances. This kind of state restriction has already arisen in the context of efforts to control acid rain. In 2000, the New York legislature adopted a law that assessed an “air pollution mitigation offset” equal to any sum received for the sale or trade of sulfur dioxide (SO₂) allowances to a regulated facility operating in an upwind state. Any money received by a regulated unit in New York in such a transaction was forfeited to the state public utility commission, effectively banning sales to utilities in upwind states.³¹⁶ The impetus for the New York statute was its desire to prevent SO₂ emissions by midwestern utilities from migrating to and adversely affecting New York in the form of acid rain.³¹⁷ For similar reasons, a coastal state that imposes more stringent restrictions on GHG emissions might wish to prevent the sale of allowances outside the state to avoid the adverse consequences of global climate change.

When the constitutionality of the New York law was challenged, the Court of Appeals for the Second Circuit held that the CAA preempted New York’s law because the latter interfered with the method selected by Congress for regulating SO₂ emissions, which includes a nationwide allowance transfer system.³¹⁸ Our model for analyzing ceiling preemption under environmental laws suggests that this was the correct result. The situation represented one of reciprocal externalities. Ohio’s failure to restrict the emissions of its own utilities resulted in the export of pollution to New York, but the New York law imposed economic externalities on Ohio by forcing Ohio utilities to purchase allowances elsewhere at higher cost or to reduce their emissions.³¹⁹ Because neither of the states can be expected to accommodate its laws (and sacrifice the interests of its citizens) to achieve the interests of the other state, a federal solution is necessary. In this instance, the interstate migration of pollution suggests the need for the federal decisionmaker to carefully design the rules governing the purchase and sale of allowances in light of the ability of one state to export the burdens of its pollution to another. Because GHGs operate on a global rather than a regional level, however, it is unclear how common such restrictions might be.

In sum, state regulation may distort markets in pollution allowances and thus undermine the efficiency goals of cap-and-trade programs, which

³¹⁶ Even if allowances were sold elsewhere, moreover, the offset could be avoided only by attaching a restrictive covenant to a transfer of SO₂ allowances that prohibited their later transfer to and usage in an upwind state.

³¹⁷ See GLICKSMAN ET AL., *supra* note 14, at 541–42.

³¹⁸ *Clean Air Mkts. Group v. Pataki*, 338 F.3d 82 (2d Cir. 2003). The court did not reach the issue of whether the state statute violated the dormant commerce clause.

³¹⁹ Either of those options is presumably more expensive than purchasing allowances from the New York utility would be, were that allowed.

would support a congressional decision in favor of ceiling preemption. Nonetheless, such a decision may impair legitimate countervailing state environmental interests that Congress should accommodate when structuring cap-and-trade programs. States have a legitimate interest in combating the localized effects of concentrated pollution (for pollutants, such as mercury, that concentrate near the emissions source) that may result from the purchases of allowances, whether the pollution is caused by sources within or outside of state. Steps to combat hot spots and the externalization of pollution from sources in upwind or upstream states should be incorporated into federal programs if the states' authority to combat such problems is displaced. These concerns are less prominent for GHGs because their impact on global climate change is not so localized,³²⁰ but Congress may nonetheless wish to accommodate a state's desire to impose more aggressive restrictions on GHG emissions from sources within the state by permitting the state to restrict emissions and capping the federal allowances within the state so as to conform to the state's standards.

CONCLUSION

The issue of ceiling preemption in environmental law is an increasingly important and difficult one as states have begun to address environmental concerns that they believe have not been adequately addressed at the federal level. The regulation of GHG emissions in response to global climate change is a prime example of this phenomenon. While the exercise of federal power to preempt these efforts may be justified by legitimate federal concerns, doing so displaces the states' traditional authority to protect the health and safety of their citizens. The principles of federalism caution against doing so absent compelling justifications.

Collective action theory provides a useful perspective for considering these issues. Insofar as federalism is in many respects a pragmatic response to collective action problems, it makes sense to consider preemption issues in terms of their collective action implications. This analysis can guide and inform both congressional and judicial decisions about preemption.

In this Article, we have used collective action theory to develop a framework for the analysis of preemption in the environmental law context and applied it to the specific problem of ceiling preemption of state restric-

³²⁰ As the decision in *Massachusetts v. EPA* indicates, some places are more likely to experience particular kinds of adverse effects arising from global climate change than others are. 127 S. Ct. 1438, 1442–43 (2007). Coastal states and nations, for example, are at greater risk of flooding than are places that do not abut the oceans. But a state cannot avoid experiencing those effects by forcing GHG-emitting facilities to locate near the state's border or by precluding such facilities from operating within the state altogether. If a facility excluded from state *A* locates in state *B* (or nation *C*) and generates the same amount of GHGs as it would have were it located in state *A*, the impact of climate change on state *A* will be the same as it would have been were the facility located in state *A*.

tions on GHG emissions in response to global climate change.³²¹ We believe that this example demonstrates the utility of the framework, which helps to identify the right questions and offers insights on how to answer them, despite the variety of legal and practical considerations that are likely to bear on ceiling preemption questions. In the case of global climate change, the framework indicates that ceiling preemption of state restrictions on GHG emissions is not supported by most of the principal justifications for federal environmental regulation, including interstate externalities, resource pooling, a race to the bottom, and NIMBYism. The desire to achieve uniformity in regulation in order to avoid burdening regulated entities with excessive transaction costs provides limited justification for ceiling preemption of programs to control GHG emissions from motor vehicles, but not of stationary source controls.

³²¹ We hope in a subsequent article to develop the framework and consider its application to a broader range of regulatory fields.