

A Collective Action Perspective on Ceiling Preemption by Federal Environmental Regulation: The Case of Global Climate Change

by

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In this paper, we draw on collective action theory¹ and traditional preemption doctrine² to develop a framework for thinking about environmental preemption, and then apply it in the context of regulation of greenhouse gases 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 as to which they exercise concurrent authority.⁴

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¹Collective 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* (1965). For further discussion of collective action theory, see, e.g., JAMES S. COLEMAN, *INDIVIDUAL INTERESTS AND COLLECTIVE ACTION* (1986); MICHAEL HECHTER, *PRINCIPLES OF GROUP SOLIDARITY* (1987); MANCUR OLSON, *THE RISE AND DECLINE OF NATIONS* (1982); DAVID REISMAN, *THEORIES OF COLLECTIVE ACTION* (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 U. S. CONSTITUTION 83-90* (2006) [hereinafter *THE POWER TO LEGISLATE*]; Richard E. Levy, *Federalism and Collective Action*, 45 U. KAN. L. REV. 1241 (1997) [hereinafter *Federalism and Collective Action*]; see also William W. Buzbee, *Recognizing the Regulatory Commons: A Theory of Regulatory Gaps*, 89 IOWA L. REV. 1 (2003); Clayton P. Gillette, *The Exercise of Trumps by Decentralized Governments*, 83 VA. L. REV. 1347 (1997); Ken Killman et al., “*Decentralization and the Search for Policy Solutions*,” 16 J. L. ECON. & ORG. 102 (2000).

² See *infra* notes ___ and accompanying text.

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 authority to regulate and federal power is exclusive. See U.S. CONST. art. 1, § 10. In all other areas states retain their power, which means that federal and state

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. 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).⁵ 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 (or at least benefits exceeded in magnitude by the costs, direct and indirect, of regulation).⁶ In light of this sustained challenge to the administrative state, we live in an era of regulatory skepticism.

Even if 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.⁷ Deregulation or market-based approaches to regulation have been implemented in various areas.⁸ Statutes and executive orders direct federal agencies to assess the costs of regulation and seek the least burdensome alternatives.⁹ There are even some signs of more aggressive judicial review of government regulation.¹⁰ The modern regulatory state

authority in many fields is concurrent. 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* THE POWER TO LEGISLATE, *supra* note ___, at 46-50, 60-62.

⁵ This includes the "Chicago School" law and economics movement and supporters of public or social choice theory.

⁶ Examples include the Reagan Revolution and the Contract with America.

⁷ Of course, this sort of political change is never permanent, and the pendulum may have already begun to swing in the other direction, as 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); RESCUING SCIENCE FROM POLITICS: REGULATION AND THE DISTORTION OF SCIENTIFIC RESEARCH (Wendy Wagner & Rena Steinzor eds., 2006); A NEW PROGRESSIVE AGENDA FOR PUBLIC HEALTH AND THE ENVIRONMENT (Christopher H. Schroeder & Rena Steinzor eds., 2005); 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 A. 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.*, 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); Sidney A. Shapiro & Joseph P. Tomain, *Rethinking Reform of Electricity Markets*, 40 WAKE FOREST L. REV. 497 (2005). *Cf.* Rena Steinzor, "You Just Don't Understand" – *The Right and the Left in Conversation*, 32 ENVTL. L. REP. (ENVTL. L. INST.) 1109 (2002) (analyzing defects in California air pollution emission trading system).

⁸ *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).

⁹ *See, e.g. id.* at 22-23 (summarizing such requirements).

¹⁰ 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

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, as proponents of regulation bear a heavier burden of justification to persuade policy makers, and must overcome a variety of new legal hurdles.

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.¹¹ It has also removed or weakened some of the substantive constraints applicable to activities that are potentially harmful to public health or the environment.¹² The executive branch, through the issuance of executive orders and agency regulations, has embarked upon a similar path, although the anti-regulatory thrust has been stronger under some administrations than others. 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.¹³

Faced with 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. Many states and localities, for example, have responded to the federal government's failure to craft a meaningful regulatory response to the threats posed by global climate change by embarking on their

(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 interpret narrowly the scope of federal environmental legislation. *See, e.g.*, *Solid Waste Agency of N. Cook County v. United States Army Corps of Eng'rs*, 531 U.S. 159 (2001); *Industrial 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 & 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 pro-development and pro-environmental decisions by agencies).

¹¹ *See, e.g.*, the Healthy Forests Restoration Act of 2003, Pub. L. No. 108-148 (codified at 16 U.S.C. §§ 6501-6591) (exempting timber sales from federal environmental assessment requirements).

¹² 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, 768 (2006) (discussing legislation creating exemptions for military activities from the Endangered Species Act, the Migratory Bird Treaty Act, and the Marine Mammal Protection Act).

¹³ 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 ___, at 754-78.

own regulatory restrictions and launching their own emissions trading programs.¹⁴ Insofar as the federal government has historically taken the lead in environmental protection, this represents something of a role reversal.

Federal inaction and deregulation increasingly presents a new kind of preemption question: when does federal environmental law preempt state laws that are more protective of the environment?¹⁵ To use terminology employed by William Buzbee, we may distinguish between “floor” and “ceiling” preemption.¹⁶ 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 regulation, it establishes a ceiling above which states cannot go, although the law might leave the states free to enact less restrictive regulation. And when federal law completely preempts the field, it establishes both a floor and a ceiling.

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.¹⁷ In such a case, the conflict between federal and state law would be clear and federal law would prevail under the Supremacy Clause.¹⁸ It is far less clear whether and when ceiling preemption is appropriate.¹⁹ 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 environmental protection at all

¹⁴ See generally Glicksman, *supra* note __, at 781-86; Kirsten H. Engel, *Mitigating Global Climate Change in the United States: A Regional Approach*, 14 N.Y.U. ENVTL. L.J. 254 (2005).

¹⁵ See, e.g., *Bates v. Dow Agrosociences 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., Inc. v. Comm'r, Mass. Dep't of Envtl. Prot.*, 208 F.3d 1 (1st Cir. 2000).

¹⁶ See William W. Buzbee, *Asymmetrical Regulation: Risk, Preemption and the One-Way Ratchet*, __ N.Y.U. L. REV. __ (forthcoming).

¹⁷ Technically, the state law might remain on the books and could be enforced by the state alongside of a 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.

¹⁸ U.S. CONST. art. VI, cl. 2.

¹⁹ See, e.g., *Fireman's Fund Ins. Co. v. City of Lodi*, 302 F.3d 928 (9th Cir. 2002) (engaging in lengthy analysis of whether local ordinance authorizing 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. American Cyanamid, Inc.*, 59 F.3d 69 (8th Cir. 1995) (holding that 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).

costs, and limiting regulatory burdens is always a countervailing concern, but those concerns may not justify ceiling preemption.²⁰

We believe that the resolution of environmental preemption issues requires careful consideration of the reasons for federal regulation, evaluated in light of collective action principles. In Part I of the article, we develop our framework for considering these issues, using 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 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, emphasizing that the important purposes for preemption analysis 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 floor and/or 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.”²¹ Thus, state laws that “retard, impede, burden, or in any manner control the operations” of federal law are invalid.²² 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.²³ It is the displacement of state authority that concerns us here.

1. Preemption and Purposes

²⁰ For further discussion of this issue, *see infra* notes ___ and accompanying text.

²¹ U.S. CONST. art. VI, cl. 2.

²² *McCulloch v. Maryland*, 17 U.S. (4 Wheat.) 316, 436 (1819).

²³ Thomas W. Merrill, *Preemption and Institutional Choice*, ___ N.W. U. L. REV. ___ (2007).

The Supreme Court has constructed a well-established doctrinal approach to preemption.²⁴ Under this doctrine, 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.²⁵

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.²⁶ Express preemption provisions usually create a negative inference that state laws falling outside the scope of the provisions are valid,²⁷ although such an inference is not inevitable.²⁸ Thus, the

²⁴ *E.g.*, *Gade v. National Solid Wastes Mgmt. Ass'n*, 505 U.S. 88, 98 (1992); *Pacific Gas and Elec. Co. v. State Energy Res. Conservation & Dev. Com'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. (2000), the current doctrine appears to be relatively stable and we will take it as a given.

²⁵ 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. National 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”); *Wisconsin 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 state common law tort remedies, 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.

²⁶ 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 ___ and accompanying text.

²⁷ *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 v. National Solid Wastes Mgmt. Ass'n*, 505 U.S. 88 (1992); *cf. New Mexico v. General Elec. Co.*, 467 F.3d 1233, 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

principal questions in express preemption cases are the scope of the preemption provision and whether the state law falls within that scope.²⁹ The scope of the preemption provision presents an interpretive question that may be resolved using the traditional tools of statutory construction.³⁰ The purposes of the federal legislation are potentially relevant to the congressional decision 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.³¹

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 state laws on the same subject,” or [3] if the

natural resource, notwithstanding CERCLA's saving clauses, because there is no evidence that Congress intended to undermine CERCLA's carefully crafted liability scheme through the saving clauses).

²⁸ 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. Thus, for example, a state law outside the scope of the preemption provision might nonetheless conflict 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 saving 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 Prod.*, 511 U.S. 244 (1993) (refusing to draw negative inference from express retroactivity provision and resolving remaining retroactivity issue through judicial retroactivity doctrine).

²⁹ *See, e.g.* *Cipollone v. Liggett Group, Inc.*, 505 U.S. 504 (1992) (holding 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.

³⁰ As will be discussed more fully below, in this sense federal preemption issues are part and parcel of a larger debate between textualist and intentionalist schools of statutory construction. *See infra* notes ___ and accompanying text.

³¹ *See, e.g.*, *California 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.”). 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 textualists on the Court. *See supra* note ___.

goals “sought to be obtained” and the “obligations imposed” reveal a purpose to preclude state authority.³²

Once it has been determined that federal regulation occupies the field, the question still remains whether the state law falls with that field.³³ This determination depends on the legislative purpose as well, particularly in determining the scope of the occupied field.

The final category of preemption, conflict preemption, may arise 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 preemption is clear. It is important to note that the existence of state standards that differ from the federal standards does not always implicate impossibility of compliance, if the regulated party can physically comply with both standards.³⁴ The second type of conflict preemption occurs when state law is an obstacle to the object and purpose of the federal law.³⁵ While some conflicts of this kind involve the kind of specific and direct conflict under which federal law “trumps” state law,³⁶ this type of conflict preemption is potentially applicable to a broad range of situations and may displace a large field of state regulatory authority.³⁷ Again, in the absence of a clear and unmistakable conflict, this sort of preemption depends on the purposes of federal environmental regulation.

³² Wisconsin Pub. Intervenor v. Mortier, 501 U.S. 597, 605 (1991) (citations omitted, bracketed numbers added).

³³ See, e.g., Pacific Gas and Elec. v. California 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); Silkwood v. Kerr-McGee Corp., 464 U.S. 238 (1984) (concluding that state common law tort actions were not within the field occupied by federal safety regulation of nuclear power plants). The determination of whether state law falls within the scope of a preempted field resembles the determination of whether state law falls within the scope of an express preemption provision. See *supra* note ___ and accompanying text.

³⁴ 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.

³⁵ 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”).

³⁶ Consider, for example, the state taxation of a national bank at issue in *McCulloch*. See *supra* notes ___ and accompanying text. 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.

³⁷ If pushed hard enough, field and conflict preemption tend to merge and the doctrine reflects overlapping considerations of purpose, since field preemption considers whether congressional goals reveal an intent to occupy the field and conflict preemption considers whether 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 both that the goal of balancing reveals an intent to preempt because additional state regulation necessarily disrupts the balance struck at the federal level or that state regulation conflicts with federal law because it is an obstacle to the accomplishment of the purpose of balancing the desire to achieve environmental protection while avoiding excessive regulatory burdens. In using this example, we do not mean to suggest that either argument would or should be successful in any particular case. See *infra* notes ___ and accompanying text.

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 finding 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 is not entirely clear.³⁸ The presumption against preemption is based principally on federalism concerns, but we think those federalism principles are reinforced by principles of textualism in statutory construction. Taken together, we believe 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.³⁹ Displacement of this state authority is strong medicine and should not be undertaken lightly. When Congress preempts state law 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 does not ordinarily want to preempt state law.⁴⁰ 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.⁴¹

³⁸ See generally CHRISTOPHER R. DRAHOZAL, *THE SUPREMACY CLAUSE: A REFERENCE GUIDE TO THE UNITED STATES CONSTITUTION*, 111-115 (2004) (discussing the presumption); S. Candice Hoke, *Preemption Pathologies and Civic Republican Values*, 71 B.U.L. REV. 685 (1991) (same). 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. & POLITICS 609 (1993).

³⁹ See, e.g., *Alden v. Maine*, 527 U.S. 706, 748 (1999) (stating that, “[a]lthough 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”).

⁴⁰ 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).

⁴¹ See generally, Lawrence Sager, *Fair Measure: The Legal Status of Underenforced Constitutional Norms*, 91 HARV. L. REV. 1212 (1978).

We also believe that there are powerful arguments related to textualism 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.⁴² Reading a statute to displace state law 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.⁴³

As an institutional matter, federalism and textualism are mutually reinforcing principles. 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 that has been approved through the constitutional process of bicameralism and presentment. This ensures in turn that the political safeguards of federalism are operative.⁴⁴

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.⁴⁵ Courts in the 1960s and 1970s were quite willing to further the purposes of federal regulatory statutes by interpreting them to create a private right of action, even though the statute itself did not expressly provide one.⁴⁶ Over time, emphasizing the text of the statute 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

⁴² In this regard, the distinction between trumping state law and displacing federal authority is significant. 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.

⁴³ 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 "limited preemption" model under which implied preemption would not be recognized).

⁴⁴ See *Gregory v. Ashcroft*, 501 U.S. 452, 463 (1991). There is, of course, considerable debate over the extent to which the political safeguards of federalism are effective in protecting state interests. See generally 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 interest of states in the political process.

⁴⁵ 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.

⁴⁶ See, e.g., *J. I. Case Co. v. Borak*, 377 U.S. 426 (1964).

right of action.⁴⁷ By the same token, one might argue that implied preemption, in the sense of displacement of state regulatory authority, should be extremely rare.⁴⁸

In any event our framework proceeds on the assumption that there is a strong presumption against implied displacement of federal 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 would 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 environment 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 transactions costs and other barriers. Power is delegated to politically accountable governmental bodies that make policy decisions on behalf of the collective. These regulatory decisions involve an analysis of the costs and benefits to the collective of a proposed regulatory policy.⁴⁹

In our federal system, regulatory decisions can be made at the state or national level.⁵⁰ 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.⁵¹ Federal power is most appropriate

⁴⁷ See, e.g., *Middlesex County Sewerage Auth. v. Nat'l Sea Clammers Ass'n*, 453 U.S. 1, 10-11 (1981); *California v. Sierra Club*, 451 U.S. 287, 293 (1981); *Cort v. Ash*, 422 U.S. 66 (1975).

⁴⁸ 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* notes ___ and accompanying text. The displacement of broad swaths of state authority, however, arguably should occur only when explicitly approved by the legislative process.

⁴⁹ 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 policy makers. For critical examination of cost-benefit analysis, see ACKERMAN & HEINZERLING, *supra* note ___.

⁵⁰ States, of course, also have smaller local governmental units, such as counties and cities.

⁵¹ See THE POWER TO LEGISLATE, *supra* note ___, 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 George A. Bermann, *Taking Subsidiarity Seriously: Federalism in the European Community and the United States*, 94 COLUM. L. REV. 331 (1994); Jared Bayer, *Re-balancing Federal and State Power: Toward a Political Principle of Subsidiarity in the United States*, 53 AM. U. L. REV. 1421 (2004); 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 the political campaigns and lobbying may distort the political process, but these forces operate at all levels of government, including the federal level.

when the cost-benefit analysis of state policy makers is distorted by collective action problems.⁵² This general point is well illustrated by the reasoning of *McCulloch v. Maryland*.⁵³ Although *McCulloch* is most famous for its recognition of implied federal legislative authority and its broad reading of the Necessary and Proper Clause,⁵⁴ 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 state exclusively, but the burdens would fall upon all the states.⁵⁵

This reasoning, which gave rise to the "political process" school of constitutional analysis, is essentially an economic argument that reflects a common type of collective action problem – externalities. When a state imposes a tax on a federal entity, the benefits of the tax come entirely to that state, while most of the burden of the tax is borne by the other states (in the form of a more costly or less effective federal entity). Thus, the state is likely to tax excessively in terms of the overall costs and benefits to the collective of states. Moreover, since all other states have a similar incentive to tax federal entities, there is a "prisoners' dilemma" situation: each state has an incentive to overtax the federal entity, regardless of what the other states do, even though it would be in the best interest of the states as a collective to refrain from doing so.⁵⁶ Generalizing from this analysis, it makes sense to displace state regulatory authority when a collective action problem means that the incentives of states will lead to sub-optimal regulatory decisions when viewed from the perspective of the United States as a whole.

⁵² See generally *Federalism and Collective Action*, *supra* note ____, at 1268-70 (discussing 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).

⁵³ 17 U.S. (4 Wheat.) 316, 436 (1819).

⁵⁴ See generally, e.g., *THE POWER TO LEGISLATE*, *supra* note ____, at 20-25 (discussing *McCulloch* and its interpretation of the Necessary and Proper Clause).

⁵⁵ *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 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.

⁵⁶ See generally DOUGLASS BAIRD, ET AL., *GAME THEORY AND THE LAW* ____-____ (19__). In the prisoners' 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 choice and that of the others. 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.

In this section, we apply that 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 over-utilized.⁵⁷ The tragedy of the commons explains why environmental regulation may be necessary, but from the federalism perspective the question is whether that regulation is best undertaken at the federal or state level (or even local level). Federal environmental regulation is most justified when collective action problems create incentives that would distort policy outcomes if states act individually. Thus, it is not surprising that the traditional justifications for federal environmental regulation, which include negative environmental externalities, resource pooling, the “race to the bottom,” uniform standards, and the “NIMBY” (not in my back yard) phenomenon, all reflect collective action problems for states.

1. *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,⁵⁸ particularly air and water pollution. Air and water pollution move downwind or downstream across political boundaries.⁵⁹ 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.⁶⁰

⁵⁷ 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); ROBERT L. GLICKSMAN ET AL., *ENVIRONMENTAL PROTECTION: LAW AND POLICY* 8-9 (5th ed. 2007) (“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 (1968).

⁵⁸ Externalities are spillover costs imposed on persons other than those who produce them and therefore not taken into account by those who produce them. Government regulation is one way to force those who impose spillover costs to internalize them. See, e.g., SIDNEY A. SHAPIRO & JOSEPH P. TOMAIN, *REGULATORY LAW AND POLICY: CASES AND MATERIALS* 52-53 (3d ed. 2003).

⁵⁹ See GLICKSMAN ET AL., *supra* note __, at 85 (“Perhaps the most widely accepted rationale for federal over state environmental standard setting is pollution externalities that move interstate.”). See generally Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 *YALE L.J.* 1210, 1215 (1977) (discussing how interstate “spillovers . . . generate conflicts and welfare losses not easily remedied under a decentralized regime”); Thomas Merrill, *Golden Rules for Transboundary Pollution*, 46 *DUKE L.J.* 931 (1997); Richard Revesz, *Federalism and Interstate Externalities*, 144 *U. PA. L. REV.* 2341 (1996).

⁶⁰ While downstream or downwind states have a corresponding incentive to over-regulate pollution causing activities in upstream or upwind states, they lack the legal authority to do so. See *infra* notes __ and accompanying text.

Some of the earliest federal pollution control programs responded to this kind of interstate air and water pollution externality.⁶¹ 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.⁶² A House report on an early piece of air pollution legislation stated, for example, that “many aspects of air pollution are – and will remain – inherently beyond the reach of State and local agencies,” including interstate air pollution.⁶³ A House report on the 1977 amendments to the Clean Air Act made the point even more clearly: “air 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.”⁶⁴

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.⁶⁵ The advantages of resource pooling are a quintessential “public good,” which in collective action terms creates an incentive for

⁶¹ See, e.g., the Water Quality Act of 1965, Pub. L. No. 89-234, 79 Stat. 903; Robert V. Percival, *Environmental Federalism: Historical Roots and Contemporary Models*, 54 MD. L. REV. 1141, 1157 (1995) (describing 1963 federal legislation, Pub. L. No. 88-206, 77 Stat. 392 (1963), that was directed at interstate air pollution); H.R. REP. NO. 90-728 (1967), reprinted in 1967 U.S.C.C.A.N. 1938, 1944 (stating that “[t]he Clean Air Act of 1963 marked the beginning of a new and much more hopeful era in air pollution control” that for the first time provided authority “for Federal regulatory action to abate interstate air pollution problems”).

⁶² See, e.g., H.R. REP. NO. 90-728 (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”).

⁶³ H.R. REP. NO. 89-2170 (1966), reprinted in 1966 U.S.C.C.A.N. 3473, 3476.

⁶⁴ 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. United States 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 “the 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. In 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 (1955), reprinted in 1955 U.S.C.C.A.N. 3023, 3024 (stating that “[r]egulatory 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”).

⁶⁵ 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 *American 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. National 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).

each state to free ride on the efforts of others.⁶⁶ As a structural response to such incentives, the federal government represents the pooled resources of the states and thus has superior resources to the individual states. The superiority of federal resources has often been cited as a reason for federal environmental regulation.⁶⁷

To some extent, this justification may be based on efficiencies in generating scientific and technical information or superior federal technical expertise.⁶⁸ 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.⁶⁹ 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.⁷⁰ These advantages, however, only justify a federal role in generating

⁶⁶ See *supra* note 1.

⁶⁷ 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 __, at 86. Cf. Rena Steinzor & Margaret Clune, *Paper Tigers and Killer Air: How Weak Enforcement Leaves Communities Vulnerable to Smog 9-11* (Nov. 2006), available at <http://www.progressiveregulation.org/publications.cfm> (documenting that chronically under-funded states were not performing required inspections under the CAA).

⁶⁸ 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 JAMES M. BERRY, *THE INTEREST GROUP SOCIETY* __-__ (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 policy makers, as opposed to a single set of policy makers at the national level, which may be geographically remote. See, e.g., Robert L. Glicksman & Stephen Chapman, *Regulatory Reform and (Breach of) the Contract with America*, 5-Wtr. KAN. J. L. & PUB. POL'Y 9, 21 (1996) (noting that "the 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.

⁶⁹ See, e.g., H.R. REP. NO. 89-2170 (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. The 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 (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.").

⁷⁰ 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).

information and disseminating it to the states and do not provide particularly powerful reasons for federal regulation on the basis of that information.⁷¹

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.⁷² One recent example in which the federal government's resource superiority has provided a rationale for federal regulatory implementation and enforcement relates to the Superfund law.⁷³ There has been concern that the states do not have adequate resources to supervise remediation of "mega-sites" contaminated with hazardous substances and that the federal government is better equipped to do so.⁷⁴

3. *Race to the Bottom.* Another rationale for federal environmental regulation is the so-called "race to the bottom."⁷⁵ A race to the bottom assumes that competition for business and industry will create a prisoner's dilemma scenario 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 regardless of what other states do,⁷⁶ 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

⁷¹ 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).

⁷² As will be discussed further *infra* notes ___ and accompanying text, the international dimensions of global climate change has been an important argument in favor of ceiling preemption with respect to GHG emissions, but this aspect of resource pooling was not a significant factor in the adoption of major federal environmental laws.

⁷³ To take a dramatic illustration, a state like Kansas might lack resources to effectively tackle 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.

⁷⁴ *See, e.g.,* Marla Cone, *When Superfund Expenses Go Mega*, L.A. TIMES, Jan. 26, 2007.

⁷⁵ 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. *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"); *Charles C. 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").

⁷⁶ 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.

efficient outcomes.⁷⁷ Other academics have responded that the race to the bottom has been and remains a factor that provides obstacles to effective state environmental regulation.⁷⁸

Regardless of the academic debates, Congress has relied on the race to bottom as a rationale for federal action,⁷⁹ explicitly adverting to the fear that states would lower environmental standards to compete for industry to justify federal regulatory authority to control pollution. A House report on the 1977 amendments to the Clean Air Act provides a clear illustration:

[T]here is a strong national interest in not encouraging industries to go forum shopping, seeking to locate new plants in areas which allow the greatest pollution. If there is no Federal policy, States may find themselves forced into a bidding war to attract new industry by reducing pollution standards. 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.⁸⁰

Preventing a race to the bottom has also been recognized and endorsed by the Supreme Court as an appropriate purpose for federal environmental regulation.

In *Hodel v. Virginia Surface Mining and Reclamation Association*,⁸¹ the Court characterized the Surface Mining Control and Reclamation Act⁸² 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.’”⁸³ 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

⁷⁷ See, e.g., Richard L. Revesz, *Rehabilitating 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); Jonathan Adler, *Jurisdictional Mismatch in Environmental Federalism*, 14 N.Y.U. ENVTL. L.J. 130, 139 (2005) (asserting that “claims that federal regulation is necessary to prevent a ‘race to the bottom’ are questionable on both theoretical and empirical grounds”).

⁷⁸ 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 J. ON REG. 67 (1996).

⁷⁹ See, e.g., *Chas. C. Steward Mach. Co. v. Davis*, 301 U.S. 548, 588 (1937).

⁸⁰ H.R. REP. NO. 95-294, at 51-52 (1977), reprinted in 1977 U.S.C.C.A.N. 1077, 1230-31.

⁸¹ 452 U.S. 264 (1981).

⁸² 30 U.S.C. §§ 1201-1328.

⁸³ *Hodel*, 452 U.S. at 281-82 (citing 30 U.S.C. § 1201(g)).

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.⁸⁴

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 in traditional "dormant" Commerce Clause and field preemption doctrine.⁸⁵ In economic terms, uniform standards reduce transactions costs for regulated entities such as product manufacturers and distributors, particularly for commodities in interstate commerce.⁸⁶ Although it is possible for states acting independently to develop uniform standards through harmonization of laws, it is very difficult and unusual for these results to be fully achieved.⁸⁷

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:

In view of the fact that the automobile is one of the principal sources of air pollution and manufacturers have the capability of incorporating air pollution reduction facilities in their vehicles, there is no apparent reason

⁸⁴ *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):

The Supreme Court has recognized that protection of natural resources may require action from Congress. This general point holds true where endangered species are concerned. Species conservation may unfortunately impose additional costs on private concerns. States may decide to forego or limit conservation efforts in order to lower these costs, and other states may be forced to follow suit in order to compete. The Supreme Court has held that Congress may take cognizance of this dynamic and arrest the "race to the bottom" in order to prevent interstate competition whose overall effect would damage the quality of the national environment.

See also *Rancho Viejo, LLC v. Norton*, 323 F.3d 1062, 1069 n.7 (D.C. Cir. 2003) (arguing that "[a]pplication of the ESA to habitat degradation has a further impact on interstate commerce by removing the incentives for states 'to adopt lower standards of endangered species protection in order to attract development,' thereby preventing a destructive 'race to the bottom'").

⁸⁵ *See* *Cooley v. Board 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.").

⁸⁶ 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." Kirsten H. Engel, *State Environmental Standard-Setting: Is There a "Race" and Is It "to the Bottom"?*, 48 HASTINGS L.J. 271, 369 (1997). *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 ___ and accompanying text (discussing uniformity and reduction of regulatory burdens as a basis for ceiling preemption in the global climate change context).

⁸⁷ The most notable example in the United States may well be the Uniform Commercial Code.

why the entire Nation should not benefit from such advances. Also, 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.⁸⁸

Indeed, the committee justified 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.”⁸⁹

Two years later, a House committee report recognized that if states were allowed to impose their own controls, the auto manufacturers would be able to meet any diverse standards that resulted from this authorization by manufacturing vehicles that comply with the most stringent controls, federal or state. It found this solution objectionable, however:

While manufacturers could meet [the] problems [stemming from separately issued and administered standards] by building vehicles that meet whichever standard is the more stringent, this would lead to increased costs to consumers nationwide, with benefit only to those in one section of the country.

The committee therefore decided to provide for uniform administration of standards for motor vehicle emissions, by providing that the Secretary of Health, Education, and Welfare shall administer the program of control of automotive emissions.⁹⁰

Congress has relied on similar concerns to justify authorization of federal regulatory standards for other environmentally damaging activities.⁹¹

⁸⁸ S. REP. NO. 89-192, at 6 (1965).

⁸⁹ *Id.* at 8.

⁹⁰ Air Quality Act of 1967, H.R. REP. NO. 90-728 (1967), *reprinted in* 1967 U.S.C.C.A.N. 1938, 1958. 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 ___ and accompanying text (discussing the ability of states to externalize the economic burdens of regulation).

⁹¹ *See, e.g.*, Hazardous Materials Transportation Act Uniform Safety Act Amendments of 1990, H.R. REP. NO. 101-441, pt. 1, at ___ (1990) (stating that “[t]he Committee believes conflicting designations by non-Federal entities would undermine the consistency needed to promote uniform requirements for all hazardous materials”); *Bates v. Dow Agrosciences LLC*, 544 U.S. 431 (2005) (explaining that Congress decided to preempt state packaging and labeling requirements for pesticides that differ from those adopted by EPA under FIFRA because “competing state labeling requirements . . . would create significant inefficiencies for manufacturers”). 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

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 flip side 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.”⁹² 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 they would experience by living or working in proximity to a radioactive waste 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 those states by being forced to accept low-level wastes generated throughout the nation.⁹³ 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)⁹⁴ to distribute the environmental burdens of waste disposal more equitably.⁹⁵ The strength of the *NIMBY* phenomenon is illustrated by the aftermath of

constitutionally forbidden from even enacting uniform environmental rules, the confusion for interstate commercial enterprises might increase exponentially.” *Id.*

⁹² Michael B. Gerrard, *Fear and Loathing in the Siting of Hazardous and Radioactive Waste Facilities: A Comprehensive Approach to a Misperceived Crisis*, 68 *TULANE L. REV.* 1047, 1052 (1994). See also Barry G. Rabe, *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) (claiming that “[f]acility siting and management has been transformed from a fairly consensual area of environmental policy in the 1960s and 1970s to a conflict ridden area” and that, “[t]ime and 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,” and “has blocked construction of any new facilities in either nation”).

⁹³ See *New York v. United States*, 505 U.S. 144, 149-51 (1992); 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).

⁹⁴ 42 U.S.C. §§ 2021b-2021d. The 1980 Act was amended in 1986. Pub. L. No. 99-240, 99 Stat. 1842 (1986).

⁹⁵ The LLRWPA declared that “each State is responsible for providing for the availability of capacity either within or outside the State for the disposal of low-level radioactive waste generated within its borders.” 42 U.S.C. § 2021d(a)(1)(A). See also Low-Level Radioactive Waste Policy Amendments Act of 1985, H.R.

New York v. United States,⁹⁶ which invalidated the most stringent enforcement provisions of the act, as states and local communities continue to struggle and litigate against hosting a site.⁹⁷

A similar pattern has manifested itself with respect to other kinds of facilities, including hazardous, solid, and biomedical waste management facilities,⁹⁸ and other kinds of potentially dangerous activities, such as hazardous waste transportation. Congress often reacted by establishing federal standards or otherwise taking the power to exclude objectionable facilities out of the hands of state and local decisionmakers.⁹⁹ Despite the federal government's intervention, some of the battles waged by the states selected to host undesirable activities have been protracted.¹⁰⁰

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. Federal regulation overcomes the perverse incentives resulting from states' ability to externalize environmental harms because the full costs of those harms are felt by the nation as a whole.¹⁰¹ The benefits of resource pooling are a classic public goods scenario that requires collective action to overcome free rider problems. The race to the bottom requires collective action to

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").

⁹⁶ 505 U.S. 144 (1992).

⁹⁷ In one instance, for example, a court held that a state that was selected as the host state for a multi-state compact's disposal site breached its good faith obligation under 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. *Entergy Arkansas, Inc. v. Nebraska*, 358 F.3d 528 (8th Cir. 2004), *rehearing and rehearing en banc denied*, 366 F.3d 688 (8th Cir. 2004).

⁹⁸ *See Rabe, supra* note __, 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 __ (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").

⁹⁹ *E.g.*, 42 U.S.C. § 6924(a) (provision of the Resource Conservation and Recovery Act requiring that EPA set minimum standards for the design, construction, and operation of facilities for the treatment, storage, and disposal of hazardous waste); *Tennessee v. United States Dep't of Transp.*, 328 F.3d 729, 730-31 (6th Cir. 2003) (describing the Hazardous Materials Transportation Act, 49 U.S.C. §§ 5101-5127, as "an effort to create a coherent approach to addressing the problems posed by the interstate transportation of hazardous material").

¹⁰⁰ *See, e.g.*, *Nevada v. Department 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.*, Lucy Kafanov, *Toxic Waste: N.J. Senators Move to Block Radioactive Waste Dump*, ENERGY & ENV'T DAILY, Jan. 26, 2007, available at <http://www.eenews.net/EEDaily/print/2007/01/26/7>.

¹⁰¹ Of course, the United States can and does externalize environmental harms to other countries, and in that sense only global policy making 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.

overcome the prisoners' dilemma situation under which the incentives for states acting independently would produce sub-optimal outcomes for the states as a collective. Federal standards substantially reduce transaction costs for regulated entities by establishing uniform standards. Federal regulation overcomes the NIMBY problem when individual states have incentives to avoid bearing certain environmental costs inherent in modern society (such as waste disposal or the generation of electricity), while benefiting from the location of the relevant cost-generating activities in other states.

C. Collective Action Problems and Preemption

As the discussion to this point indicates, the central question in 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 the state's regulatory actions are symptomatic of the collective action problems that justify federal action. The preemptive effect of federal legislation should be assessed with this principle in mind.

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.¹⁰² These countervailing concerns may be more or less explicit in the text or history of a statute, but in view of the countervailing costs there is always some upper limit to the expectations of environmental protection.¹⁰³ Just as collective action problems can distort a state's assessment of environmental costs and benefits, so too might a state's assessment of regulatory burdens be distorted by collective action problems. 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 Under-Regulation 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

¹⁰² 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.

¹⁰³ 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, 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 Dep't, AFL-CIO v. Am. Petroleum Inst.*, 448 U.S. 607 (1980), and *Am. Textile Mfrs. Inst., Inc. v. Donovan*, 452 U.S. 490 (1981), draw the limit at the destruction of an industry.

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 negative economic externality 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 would not ordinarily support ceiling preemption.

The negative externalities justification for federal intervention provides a clear example of this result.¹⁰⁴ 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 under-regulation 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.¹⁰⁵ But if – contrary to expectations – the state imposes stricter environmental protection measures, the collective action problem giving rise to regulation at the federal level is not an issue.

When a state imposes stricter environmental protection measures, moreover, it does not ordinarily create a corresponding negative regulatory externality.¹⁰⁶ If a state

¹⁰⁴ 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 should not ordinarily infer such preemption in the absence of express statutory provisions. *See infra* notes ___ and accompanying text (discussing basic principles derived from this framework).

¹⁰⁵ 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 a state enforcement action precluded subsequent enforcement action at the federal level, 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.*, 261 Va. 209, 542 S.E.2d 766 (2001) (holding that enforcement of state pollution laws was barred by principles of *res judicata* following federal enforcement action based on the same pollution offense). For this reason perhaps, 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 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 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”).

¹⁰⁶ 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 state law prohibiting the use of plastic containers for milk even though the law imposed economic burdens on out-of-state interests); *Procter and Gamble v. Chicago*, 509 F.2d 69 (7th Cir 1975) (upholding municipal ban on laundry detergents with phosphates). 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 ___ and accompanying text (discussing this problem in relation to vehicle emissions), and its implications for preemption will be discussed in that context. *See infra* notes ___ and accompanying text.

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.¹⁰⁷ It is true that downstream or downwind states might have incentives to over-regulate pollution-causing activity in other states, thus reaping the environmental benefits while externalizing the economic costs.¹⁰⁸ But states generally lack the authority to regulate pollution-causing activities in other states.¹⁰⁹ Thus, negative externalities might justify floor preemption, but they would not justify ceiling preemption.

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.¹¹⁰ The gains from resource pooling are achieved by regulating at the federal level whether or not the states retain concurrent regulatory and enforcement authority. For example, if (contrary to congressional expectations) the state in which a mega-Superfund site is located commits sufficient resources to remediate the site,¹¹¹ preemption of the state's ability to control the remediation process cannot legitimately be premised on the federal government's general resource superiority.

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.¹¹² In those circumstances if the states were to pursue independent actions it could weaken the bargaining position of the national government.¹¹³ If so, the purposes that justify regulating at the national level

¹⁰⁷ Of course, economic activity within a state benefits other states as well, and in that sense regulation of in-state activity externalizes some economic burdens (as well as environmental benefits because there will be less pollution moving into other states). In an extreme case, this becomes a NIMBY problem. *See supra* notes ___ and accompanying text.

¹⁰⁸ These incentives might manifest themselves in over-regulation 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 THE POWER TO LEGISLATE, supra* note ___, at 86 (discussing collective action implications of bicameralism and presentment).

¹⁰⁹ *See, e.g., Nat'l Solid Wastes Mgmt. Ass'n v. Meyer*, 165 F.3d 1151 (7th Cir. 1999); *Nat'l Solid Wastes Mgmt. Ass'n v. Charter County*, 303 F. Supp. 2d 835 (E.D. Mich. 2004).

¹¹⁰ 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* notes ___ and accompanying text.

¹¹¹ *See supra* note ___ and accompanying text.

¹¹² *Cf.* 42 U.S.C. § 9613(f)(2) (providing that a person who has resolved its liability to the United States or a state in a settlement is not 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) (Clean Water Act).

¹¹³ This is one argument that has been advanced against state regulation of greenhouse gases. *See infra* notes ___ and accompanying text.

would tend to support exclusive federal control; i.e., both floor and ceiling preemption.¹¹⁴ The Court has recognized these concerns outside of the environmental law context in cases involving sensitive foreign policy negotiations.¹¹⁵

There does not appear to be any significant countervailing need to pool resources to prevent over-regulation. 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.¹¹⁶ It is true that regulation and enforcement by states along side of 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 under-regulate 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.¹¹⁷ But it does not support ceiling preemption.

Consider the example of surface coal mining reclamation standards, which as noted previously¹¹⁸ reflect congressional concern that “States would find themselves forced into a bidding war to attract new industry by reducing pollution standards.”¹¹⁹ Suppose that, contrary to congressional expectations, a particular state resisted the temptation to grovel for new coal mining industry and adopted reclamation standards more stringent than those promulgated by the Interior Department because the state regarded protection of the public health in this particular instance as more important than the attraction of new industry to the state. The purposes that prompted Congress to enact SMCRA would not support preemption of the more stringent state standards because the state did not engage in the kind of conduct that Congress anticipated would necessitate federal regulation.

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

¹¹⁴ Note, however, that to overcome the presumption against preemption, these concerns should be both clearly expressed and central to the purposes of the statute.

¹¹⁵ See cases cited at *supra* note ____.

¹¹⁶ It might be argued that lack of information by states could lead to over-regulation 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 preemption, but to this point such concerns are not reflected in the federal environmental laws.

¹¹⁷ See *supra* notes __ and accompanying text.

¹¹⁸ See *supra* notes __-__ and accompanying text.

¹¹⁹ H.R. REP. NO. 25-294, at 51-52 (1977), *reprinted in* 1977 U.S.C.C.A.N. 1077, 1230-31.

of citizens or businesses (e.g., wealthy taxpayers).¹²⁰ In extreme cases where states or local governments have such incentives, the problem merges with NIMBY phenomenon and will be addressed in that connection below.¹²¹ To date, however, there is little evidence that there is a systematic prisoners dilemma scenario in which states are forced to over-regulate 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 over-regulation 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 over-regulate. On the other hand, if the purpose of federal regulation is to ensure uniformity of standards or combat a 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 would by definition be 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.¹²² 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.¹²³ Preemption of a more stringent set of state-issued auto emission 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, economies of scale, 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

¹²⁰ 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 as 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 empirical accuracy of race to the bottom argument).

¹²¹ See *infra* notes ___ and accompanying text.

¹²² See *supra* notes ___ and accompanying text.

¹²³ See *supra* note ___ and accompanying text.

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.¹²⁴ 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.¹²⁵

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 of 1980 illustrates this point. Congress adopted the LLRWPA because it concluded that the desire of 47 states to avoid becoming the repository of low-level radioactive waste was unfairly burdening the three states with operational facilities with the risks and costs created by the disposal of all low-level wastes generated across the country.¹²⁶ Given that purpose, it makes no sense to allow a state to adopt a siting regime that differs from the federal system and that effectively precludes any disposal facility from satisfying the state's conditions for issuance of a permit to locate and operate the facility within the state.¹²⁷ Accordingly, preemption of the state's siting law would be consistent with the underlying justification for the federal regulatory program.¹²⁸

It is less clear whether such a federal law would also warrant floor preemption. Arguably, if federal regulation responds to a NIMBY problem, the concern is over-regulation. If, contrary to the expectations of Congress, a state were to lower its environmental standards to attract a radioactive waste disposal site, the concerns that

¹²⁴ 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).

¹²⁵ See *infra* notes ___-___ and accompanying text (discussing this issue in connection with global climate change).

¹²⁶ See *supra* notes ___-___ and accompanying text.

¹²⁷ In practice, NIMBY problems most frequently manifest themselves in overly strict regulations for siting environmentally hazardous facilities. See, e.g., 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); 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). 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).

¹²⁸ Although the problem is most obvious and common in the context of siting regulation, 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.

supported federal regulation under the LLRWPA would not be engaged. 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.¹²⁹

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 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 ascertaining 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 make explicit reference to 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.¹³⁰ 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.

¹²⁹ 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* notes ___ and accompanying text (discussing the impact of lower state standards in the context of negative environmental externalities).

¹³⁰ *See, e.g.*, *In re WTC Disaster Site*, 414 F.3d 352, 375 (2d Cir. 2005) (concluding that “[f]athoming 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”).

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.¹³¹ 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 state regulation is not inconsistent with those purposes.¹³² 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. 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 statutory purposes. In the following section we apply the framework to one multi-faceted environmental issue: global climate change. The analysis 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 of the article we illustrate the utility of our analytical framework in the context of regulating various activities believed to contribute to global climate change.¹³³ 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

¹³¹ See *supra* notes ___ and accompanying text.

¹³² 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.

¹³³ Although we focus in this part primarily on climate change issues, we also discuss ceiling preemption under other environmental regulatory programs where they provide useful comparisons with the resolution of the issues of ceiling preemption raised by climate change regulation.

bears on ceiling preemption of state efforts to address climate change and suggests that it is more justified as 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.

A. Current Federal and State Regulation

The federal and state response to global climate change reflects 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 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 that may be harmful to the public health or the environment is the Clean Air Act (CAA).¹³⁴ 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 EPA prescribe “standards applicable to the emission of any air pollutant” from new motor vehicles or new motor vehicle engines which, in the judgment of EPA, “may reasonably be anticipated to endanger public health or welfare.”¹³⁵ The Act defines an “air pollutant,” in relevant part, as “any air pollution agent or combination of agents, including any physical, chemical, [or] biological substance or matter which is emitted into or otherwise enters the ambient air.”¹³⁶ To date, EPA has not issued any motor vehicle emission standards for carbon dioxide (CO₂) or the other principal greenhouse gases (GHGs). In 1999, a coalition of states, cities, and environmental nongovernmental organizations filed a petition with EPA requesting that it regulate emissions of CO₂ and other GHGs from new motor vehicles under § 202 of the CAA. In 2003, EPA denied the petition on two grounds.

First, EPA asserted that it lacked the statutory authority to adopt vehicle emission control standards for CO₂ and the other GHGs under § 202 because none of those substances qualifies as an “air pollutant” under the Act.¹³⁷ EPA also supported the position that it lacks legal authority to regulate CO₂ emissions from motor vehicles on the

¹³⁴ 42 U.S.C. §§ 7401-7671q.

¹³⁵ 42 U.S.C. § 7521(a)(1).

¹³⁶ 42 U.S.C. § 7602(g).

¹³⁷ Control of Emissions From New Highway Vehicles and Engines; Notice of denial of petition for rulemaking, 68 Fed. Reg. 52,922 (Sept. 8, 2003).

ground that emission standards would effectively regulate the fuel economy of passenger cars and light duty trucks. According to EPA, “[n]o technology currently exists or is under development that can capture and destroy or reduce emissions of CO₂. At present, the only practical way to reduce tailpipe emissions of CO₂ is to improve fuel economy.”¹³⁸ 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) standards¹³⁹ for cars and light duty trucks when it adopted the Energy Policy and Conservation Act (EPCA) in 1975.¹⁴⁰ 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.”¹⁴¹

Second, EPA asserted that even if it had authority to regulate GHGs, EPA would exercise its regulatory discretion and refuse to adopt emission control standards on several policy grounds. First, regulation under § 202 of GHG emissions from new motor vehicles, which are one of many sources of those GHGs, would “result in an inefficient, piecemeal approach to the climate change issue.”¹⁴² Second, unilateral regulation by the United States of motor vehicle emissions might weaken efforts to persuade developing countries to reduce their own GHG emissions. Third, ongoing research into scientific uncertainties about the causes and effects of global climate change and into possible technological solutions made regulation premature. Fourth, with respect to the petitioners’ second suggested remedial mechanism (improved tire efficiency), EPA raised doubts that it has the authority under the CAA to regulate tire efficiency as an “emission” of an air pollutant.¹⁴³

In *Massachusetts v. EPA*, however, the Supreme Court rejected EPA’s arguments and left little doubt that EPA would have to regulate GHG emissions.¹⁴⁴ The Court gave short shrift to EPA’s claim that GHGs are not air pollutants, finding that they fit comfortably within the “capacious” statutory definition of that term.¹⁴⁵ It also firmly rejected EPA’s alternative basis for denying the petition – that even if it does have

¹³⁸ *Id.* at 52,929.

¹³⁹ 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*, available at <http://www.nhtsa.dot.gov/cars/rules/cafe/overview.htm>.

¹⁴⁰ Pub. L. No. 94-163, § 301, 89 Stat. 871 (1975) (codified as amended at 49 U.S.C. §§ 32906-32919).

¹⁴¹ 68 Fed. Reg. at 52,929. EPA pointed out that DOT had recently issued more stringent fuel economy standards, which would reduce CO₂ emission by approximately 31 million tons. *Id.* at 52,931.

¹⁴² *Id.* at 52,931.

¹⁴³ 68 Fed. Reg. at 52,929-31. The petitioners failed to suggest any actions that EPA could take to reduce emissions of other GHGs, including CH₄ and N₂O from motor vehicles. *Id.* at 52,931.

¹⁴⁴ *Massachusetts v. EPA*, 127 S. Ct. 1438 (2007) (reversing *Massachusetts v. EPA*, 415 F.3d 50 (D.C. Cir. 2005)).

¹⁴⁵ *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) (emphasis added).

statutory authority to regulate GHGs, it would be unwise to do so at this time – because EPA “has offered no reasoned explanation for its refusal to decide whether greenhouse gases cause or contribute to climate change.”¹⁴⁶ The Court further indicated that, on remand, “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.”¹⁴⁷ Some observers have interpreted the decision as all but forcing EPA to regulate GHG emissions not only from mobile, but also stationary sources.¹⁴⁸

EPA also regulates pollution pursuant to sections 108-110 of the CAA, which directs EPA to compile a list of “each air pollutant” (called a “criteria pollutant”) whose emissions cause or contribute, in 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.”¹⁴⁹ Once EPA lists an air pollutant as a criteria pollutant, the CAA requires that 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.¹⁵⁰ 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.¹⁵¹

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 EPA the authority to regulate CO₂ as an air pollutant under the motor vehicle emission

¹⁴⁶ *Id.* at 1463. More specifically, that aspect of EPA’s decision rested on “reasoning divorced from the statutory text,” *Id.* at 1462, and 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 1463.

¹⁴⁷ *Id.* at 1462.

¹⁴⁸ See, e.g., Arnold W. Reitze, Jr., *Controlling Greenhouse Gas Emissions From Mobile Sources – Massachusetts v. EPA*, 37 *Envtl. L. Rep. (Envtl. L. Inst.)* 10535, 10538 (2007) (asserting that “the Court’s opinion pushes EPA to find that GHGs need to be regulated”); Jonathan H. Adler, *Massachusetts v. EPA Heats Up Climate Policy No Less Than Administrative Law: A Comment on Professors Watts and Wildermuth*, Case Research Paper Series in Legal Studies, Working Paper 07-20 (June 2007), available at <http://ssrn.com/abstract=993511>.

¹⁴⁹ 42 U.S.C. § 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.

¹⁵⁰ See 42 U.S.C. § 7409; 40 C.F.R. §§ 50.1-50.12. EPA must issue “primary” ambient air quality standards that are “requisite to protect the public health, allowing an adequate margin of safety.” 42 U.S.C. § 7409(a)(1), (b)(1). 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.” 42 U.S.C. § 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, [and] weather.” 42 U.S.C. § 7602(h).

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

standard provisions of the Act (and sharply constrains its discretion to refuse to do so) seems equally applicable to GHG emissions from stationary sources.¹⁵² One or more of EPA's policy-based reasons for deferring regulation of GHGs under the CAA at this time might also be relevant to EPA's failure to regulate these substances as criteria pollutants (assuming EPA has any discretion to choose which pollutants qualify as criteria pollutants).¹⁵³ These might include the desire to avoid unilateral U.S. reductions and the uncertainty about causes and technical solutions.

2. State Regulation

In the absence of regulation by EPA of CO₂ emissions from motor vehicles or stationary sources under the CAA, many state governments have adopted their own regulatory programs.¹⁵⁴ 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.¹⁵⁵

Second, in 2006, California adopted the Global Warming Solutions Act of 2006.¹⁵⁶ The Act requires the State Air Resources Board to adopt a statewide GHG emissions limit, to be achieved by 2020, that is equivalent to the statewide level in 1990. The Board also must adopt regulations to achieve the maximum technologically feasible and cost-effective emission reductions of particular GHGs (which include CO₂, methane, nitrous oxide, and HCFCs) from various categories of sources.¹⁵⁷

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

¹⁵² The triggers for EPA's authority to regulate air pollution from stationary sources differ somewhat from the trigger 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).

¹⁵³ Although 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).

¹⁵⁴ *See* Glicksman, *supra* note ___, at 781-84.

¹⁵⁵ Cal. Health and Safety Code § 43018.5(a). *See also* Glicksman, *supra* note ___, at 782.

¹⁵⁶ Cal. Health & Safety Code §§ 38501-38599.

¹⁵⁷ Cal. Health & Safety Code §§ 38560, 38562, 38570.

emissions cuts.¹⁵⁸ Regulated entities have attacked the validity of state efforts on the ground that they are preempted by federal law.¹⁵⁹

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 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 is insufficiently prominent to support ceiling preemption for regulation of stationary sources. The NIMBY rationale, which might also support ceiling preemption, is not implicated in the current regulatory regimes.

1. 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,¹⁶⁰ was to combat the negative externalities of interstate air pollution.¹⁶¹ Under our framework, that justification provides weak support for ceiling preemption of state laws designed to reduce emissions of air pollutants such as CO₂ that contribute to global climate change.

There are certainly negative transboundary environmental externalities that support federal regulation of GHG emissions,¹⁶² even if their precise impact is difficult to predict.¹⁶³ But federal intervention to combat negative environmental externalities responds to collective action problems that will lead a state to under-regulate because it

¹⁵⁸ See Regional Greenhouse Gas Initiative, An Initiative of the Northeast & Mid-Atlantic States of the U.S., available at <http://www.rggi.org>. Some Midwestern states have also participated in regional efforts to reduce CO₂ emissions. See Glicksman, *supra* note __, at 782.

¹⁵⁹ See, e.g., *Central Valley Chrysler-Jeep v. Witherspoon*, 456 F. Supp. 2d 1160 (E.D. Cal. 2006).

¹⁶⁰ 42 U.S.C. §§ 7410(a)(2)(D), 7426.

¹⁶¹ See *supra* notes __ and accompanying text.

¹⁶² “By its very nature, climate change is a common global concern of all countries, for climate respects no political boundaries.” EDITH BROWN WEISS ET AL., *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* 591 (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 (2d 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. STERN REVIEW: THE ECONOMICS OF CLIMATE CHANGE vii (2006), available at http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm (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).

¹⁶³ 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.

does not bear the full environmental costs of pollution caused within the state. If a state such as California adopts a program to control CO₂ emissions from motor vehicles or from stationary sources, that program does not implicate the concern for under-regulation because of interjurisdictional externalities.¹⁶⁴

Under the negative interstate externality rationale, there is no reason to preempt emission controls on CO₂ that go beyond what the federal government has mandated if a state has managed to confound pessimistic federal expectations by controlling pollution that is likely to have as much adverse effect outside the jurisdiction as within. 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,¹⁶⁵ ceiling preemption has no legitimate role to play under those circumstances.¹⁶⁶

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 level.¹⁶⁷ 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.¹⁶⁸ This information,

¹⁶⁴ With respect to mobile emission sources, however, a state may be able to externalize regulatory burdens because the costs of stricter standards for GHGs 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 ___ and accompanying text (discussing similar reasoning by Congress). We address these issues below in connection with the uniformity rationale for federal regulation. *See infra* notes ___ and accompanying text.

¹⁶⁵ *See infra* notes ___ and accompanying text (discussing secondary purposes); notes ___ and accompanying text (discussing implications of state regulation for cap-and-trade programs).

¹⁶⁶ In addition, the federal government may not provide effective regulation of interstate externalities. *See, e.g., GLICKSMAN ET AL., supra* note __, at 525-27 (describing inadequacy of 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, available at <http://www.eenews.net/Greenwire/print/2007/02/07/16> (describing New Jersey's allegation that EPA had failed to stop Pennsylvania coal-fired power plant near the New Jersey border from emitting more than 10 times the allowable amount).

¹⁶⁷ *See, e.g., GLICKSMAN ET AL., supra* note __, at 86 (discussing economies of scale and research leadership provided by federal information gathering).

¹⁶⁸ *E.g.,* 7 U.S.C. §§ 6701, 6711; 15 U.S.C. §§ 2904 2921; 42 U.S.C. §§ 13383, 13385, 13389.

however, is in the public domain and generally available to policy makers in the states. Lack of state resources does not provide any inherent reason to suggest that state policy makers would be prone to over-regulate on the basis of that information.¹⁶⁹ 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.¹⁷⁰ When EPA denied the states' petition to regulate CO₂ emissions from motor vehicles in 2003, one of the explanations it provided 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.¹⁷¹ The auto industry has extended this reasoning in a pending action seeking a declaration that California's restrictions on GHG emissions from motor vehicles are preempted, arguing that "the implementation of the California regulations '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 in negotiating multilateral reductions in greenhouse gases.'"¹⁷² A federal district court found the argument sufficiently plausible that it denied the state's motion for judgment on the pleadings.¹⁷³

These arguments 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*,¹⁷⁴ the Court held that a Massachusetts law designed to put pressure on Burma (Myanmar) to improve its human rights practices was an obstacle to the accomplishment of the purposes of a federal statute authorizing the President to impose economic sanctions against Burma. 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

¹⁶⁹ One possible argument would be that state policy makers, 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* notes _____. 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 policy makers may be just as prone to under-regulate – due to lack of appreciation of the risks posed by climate change – as to over-regulate. *Cf.* Manya A. Brachear, *Religious Leaders Divided About Global Warming*, CHI. TRIBUNE, June 15, 2007 (reporting Oklahoma Senator Inhofe's comment that global warming is "the greatest hoax ever perpetrated on the American people").

¹⁷⁰ *See supra* notes ____ and accompanying text.

¹⁷¹ *See supra* note ____ and accompanying text.

¹⁷² *Central Valley Chrysler-Jeep v. Witherspoon*, 456 F. Supp. 2d 1160, 1177 (E.D. Cal. 2006) (quoting ¶ 130 of the plaintiffs' first amended complaint).

¹⁷³ The court anchored 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." *Id.* at 1175 (quoting *Am. Ins. Ass'n v. Garamedi*, 539 U.S. 396, 413 (2003)).

¹⁷⁴ 530 U.S. 363 (2000).

comprehensive, multilateral strategy toward Burma.”¹⁷⁵ Second in *American Insurance Ass'n v. Garamendi*,¹⁷⁶ 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. 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 cases differ from the situation concerning global climate change in critical respects that weaken the case for 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 regulation of GHG emissions is directed at domestic activities within the state within a traditional area of state authority.

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 a federal statute and clear on its face, which is not the case for the CAA.¹⁷⁷ Another statute, the Global Climate Protection Act of 1987,¹⁷⁸ 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.”¹⁷⁹ 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 jurisdiction so as to bolster the State Department’s negotiating position.¹⁸⁰ In *Massachusetts v. EPA*, moreover, the Supreme Court made clear that this statute does not affect the regulatory regime of the CAA by rejecting EPA’s reliance on this argument as a basis for declining to regulate GHGs.¹⁸¹

¹⁷⁵ *Id.* at 373-74.

¹⁷⁶ 539 U.S. 396 (2003).

¹⁷⁷ 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 narrow 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 ___ and accompanying text.

¹⁷⁸ Pub.L. 100-204, Title XI, §§ 1101 to 1106, Dec. 22, 1987, 101 Stat. 1407, as amended by Pub.L. 103-199, Title VI, § 603(1), Dec. 17, 1993, 107 Stat. 2327 (codified at 15 U.S.C. § 2901 note).

¹⁷⁹ *Id.* § 1103(c).

¹⁸⁰ 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 Inst. v. Hogarth*, 2007 WL 2027398 (9th Cir. 2007). The court in that case 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 *9. See also *Browner v. Evans*, 257 F.3d 1058, 1065-66 (9th Cir. 2001).

¹⁸¹ The Court reasoned that:

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.¹⁸² 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.¹⁸³ 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.¹⁸⁴ But ceiling preemption in this context 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 20 to 25 percent of the world's GHG emissions.¹⁸⁵ The "defection" of a state (even a large one such as California)¹⁸⁶ or group of states from the united, anti-regulatory front presented by the federal government is unlikely to put a significant dent in the clout that 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.¹⁸⁷

while 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. Congress 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.

Massachusetts v. EPA, 127 S. Ct. 1438, 1463 (2007).

¹⁸² 539 U.S. at 415-17.

¹⁸³ Indeed, as observed by the Court in *Massachusetts v. EPA*, EPA is not even the proper body to assert foreign policy concerns. 127 S. Ct. at 1463 (quoted *supra* note ____). *Cf.* *Hampton v. Mow Sun Wong*, 426 U.S. 88 (1976) (invalidating 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).

¹⁸⁴ See *Zschernig v. Miller*, 389 U.S. 429 (1968) (invalidating 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).

¹⁸⁵ HUNTER ET AL., *supra* note ____, at 663; BROWN WEISS, *supra* note ____, at 649.

¹⁸⁶ California contributes 6.7 percent of total U.S. CO₂ emissions. Margaret Kriz, *Bench Press for Cleaner Fuels*, NAT'L J., Feb. 24, 2007, at 39, 40.

¹⁸⁷ 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,

3. Race to the Bottom

A third rationale that underlies certain components of the CAA is concern over a race to the bottom.¹⁸⁸ Under our framework, this rationale, like negative externalities and resource pooling, does not provide much support for ceiling preemption of state regulation of GHG emissions. A federal regulatory presence based on the race to the bottom assumes a prisoners' dilemma scenario that forces states to under-regulate GHGs in order to compete for businesses who make location decisions based in part on the regulatory environment. If, contrary to these expectations, a state is willing to run those economic risks in order to supply its citizens with a level of environmental protection that extends beyond what the federal government is supplying, the race to the bottom has not materialized. Such action is not contrary to the purposes of the federal legislation.

A different issue is presented by the Bush Administration's reliance on an international race to the bottom in refusing thus far to support the adoption of mandatory controls on GHG emissions. The Secretary of Energy, 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 [and 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."¹⁸⁹ The question is whether this rationale supports ceiling preemption.

Standing alone, the existence of an international race to the bottom would not tend to support ceiling preemption because it would not lead to over-regulation by states. Indeed, the same incentives that create an international race to the bottom would tend to cause states to under-regulate as well. Thus, if a state decides to adopt more stringent GHG regulation than the federal government,¹⁹⁰ that judgment is not the result of a race-to-the-bottom problem. Moreover, because the economic costs will be borne at least in

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.), 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*, 24 ENVTL. F. 8 (March/April 2007)) 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.

¹⁸⁸ *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); 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); *supra* notes ___ and accompanying text.

¹⁸⁹ Darren Samuelson, *Climate: Bush Officials Insist No Change Is Coming on GHG Caps*, GREENWIRE, Feb. 2, 2007, available at <http://www.eenews.net/Greenwire/2007/02/02/2>. The Secretary also warned that "[t]he U.S. economy is not something to be experimented with in my judgment." *Id.*

¹⁹⁰ Thus, the Secretary of Energy also 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 we're going to follow that." *Id.*

part by businesses and consumers in the state, there is no systematic externalization of economic burdens that might be expected to produce over-regulation.¹⁹¹

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.¹⁹² 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 negotiation position of the United States with respect to other countries on air pollution matters. One specific provision, section 115 of the Act, provides that if EPA finds that emissions from a state cause or contribute to air pollution which may reasonably be anticipated to endanger health or welfare in another country, EPA may require that state to revise its implementation plan to abate the emissions, provided the affected foreign country has provided essentially the same protection for the United States from the adverse effects of air pollution that originates in the foreign country.¹⁹³ This provision arguably reflects a congressional purpose to pursue a strategy of reciprocity in response to the prisoners' dilemma that underlies the race-to-the-bottom problem.

This provision, however, applies to a very narrow circumstance that does not implicate a unilateral decision by states to regulate GHGs. The reciprocity requirement 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.¹⁹⁴ 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 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, insofar as it contemplates unilateral reduction of pollutants within the United States without regard to similarly strict regulation in other countries.

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.¹⁹⁵ Moreover, virtually every industrialized nation in the world has already committed to the reduction

¹⁹¹ It is true that some economic burdens from stringent regulation of GHGs would be felt in other states, but (with the possible exception of mobile sources of pollution, *see infra* notes ___ 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.

¹⁹² *See supra* notes ___ and accompanying text.

¹⁹³ See 42 U.S.C. § 7415.

¹⁹⁴ *Id.*

¹⁹⁵ *See supra* notes ___ and accompanying text.

regime established by the Kyoto Protocol.¹⁹⁶ Accordingly, were the United States to impose mandatory controls on GHG emission, it would hardly stand on its own in doing so and state restrictions would not seriously undermine our 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 the statutory language and 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 purposes.¹⁹⁷

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 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 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,"¹⁹⁸ although there is a separate waiver provision under which EPA may permit California to adopt more stringent standards that may then be adopted by other states as well.¹⁹⁹ The

¹⁹⁶ As of December 13, 2006, 168 nations, not including the United States, had ratified the Protocol. See http://unfccc.int/kyoto_protocol/background/status_of_ratification/items/2613.php; http://unfccc.int/files/kyoto_protocol/background/status_of_ratification/application/pdf/kp_rat_131206.pdf (last visited Feb. 10, 2007).

¹⁹⁷ See 42 U.S.C. § 7416 (preserving state authority to regulate air pollution, provided state regulation is not less stringent than applicable federal regulation).

¹⁹⁸ 42 U.S.C. § 7543(a).

¹⁹⁹ See 42 U.S.C. §§ 7543(b), 7507. Under section 7543(b), any state that had vehicle emission standards in place before March 30, 1966, may adopt more restrictive standards if it applies for and receives a waiver

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 has declined 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 this context prevents the states from protecting their citizens without replacing it with any alternative protections, the presumption against implied preemption should be especially strong. If this decision is reflected in a statute that embodies a conscious legislative decision in favor of a *laissez faire* environment, that decision has been subjected to the political safeguards of federalism.²⁰⁰ But the mere failure to regulate should not preempt state regulatory initiatives.²⁰¹ 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.²⁰²

The situation for GHGs is more complex because Congress has authorized EPA to regulate GHGs, but EPA has to this point declined to do so.²⁰³ The CAA's preemption provisions have been subjected to the political safeguards of federalism, but the CAA assumes that EPA will regulate harmful pollutants.²⁰⁴ Thus, it is by no means clear that

from the EPA. In practice, the only state that had standards in place by the specified date is California. Under section 7507, other states may opt to follow California's more stringent standards. For 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 if the state reaches a different judgment than the federal government regarding the need for protection against those harms.

²⁰⁰ See *supra* notes ___ and accompanying text.

²⁰¹ 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.

²⁰² 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.

²⁰³ See *supra* notes ___-___ and accompanying text.

²⁰⁴ Indeed, there is language in the Supreme Court's recent decision in *Massachusetts v. EPA* strongly implying that, if 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.

Congress intended to authorize EPA to preempt states' ability to regulate harmful pollutants by declining to exercise its regulatory authority.²⁰⁵ Moreover, the extent to which agency construction of preemption provisions should be accorded "Chevron deference" is the subject of considerable debate.²⁰⁶ 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, it is unclear whether Congress actually considered the circumstance of EPA's refusal to regulate a pollutant.

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.²⁰⁷ It preempts "any standard relating to the control of emissions from new motor vehicles or motor vehicle engines subject to this part." Whatever the collective implications of state standards for GHG emission from motor vehicles, this text would appear to leave little doubt that state standards regulating GHG emissions are preempted. After *Massachusetts v. EPA*,²⁰⁸ 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." California appears to recognize this and has applied for a waiver,²⁰⁹ which EPA must grant unless it finds that the state standards are arbitrary and capricious, the state does not need the standards to meet compelling and extraordinary circumstances, or the standards

Massachusetts v. EPA, 127 S. Ct. 1438, 1462 (2007). See also *supra* note ___ and accompanying text. *But cf.* *Massachusetts v. EPA*, 127 S. Ct. at 1263 (stating that "[w]e need not and do not reach the question whether on remand EPA must make an endangerment finding, or whether policy concerns can inform EPA's actions in the event that it makes such a finding").

²⁰⁵ One of the authors has argued elsewhere that Congress should preempt state environmental regulation despite federal inaction in very limited circumstances, such as when it determines either that a state's regulatory initiative would inappropriately impose adverse impacts on other states or that federal policies can best be achieved in the absence of positive 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 authority. See generally Robert L. Glicksman, *Nothing Is Real: Protecting the Regulatory Void through Federal Preemption by Inaction*, 26 VA. ENVTL. L. REV. ___ (forthcoming).

²⁰⁶ Indeed, several of the participants in this symposium focus on this issue. See Nina Mendelson, *Federal Agency Preemption of State Law*, ___ NW. U. L. REV. ___ (200_); Ernest Young, *Executive Preemption of State Law*, ___ NW. U. L. REV. ___ (200_). See also Nina Mendelson, *Chevron and Preemption*, 102 MICH. L. REV. 737 (2004).

²⁰⁷ Nonetheless, the foregoing analysis might suggest that Congress should consider amendments to limit the scope of preemption or otherwise protect states when EPA fails to regulate harmful pollutants.

²⁰⁸ 127 S. Ct. 1438 (2007). Before the Supreme Court's decision in *Massachusetts v. EPA*, this was a more difficult question because one ground 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 emission by motor vehicles would thus be within the scope of the statutory preemption provision.

²⁰⁹ See Lisa Friedman, *Smog Fighters Furious at Bush Administration*, DAILY NEWS OF LOS ANGELES, July 3, 2007, 2007 WLNR 12575056 (describing opposition to California's request for a waiver within the federal Department of Transportation).

do not meet the general requirements for regulation of motor vehicle emissions under section 202(a) of the CAA.²¹⁰

The second complicating factor is that the only currently available way to reduce GHG emissions in motor vehicles is to increase 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), NHTSA is authorized to establish corporate fuel economy standards for manufacturer motor vehicle fleets.²¹¹ State regulation of fuel economy standards for automobiles implicates the same kinds of uniformity 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 [EPCA].”²¹²

Thus, in its challenge to California’s auto emission standards for GHGs, the auto industry argued not only that they 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.²¹³ NHTSA has advanced similar arguments in favor of preemption of GHG emission standards,²¹⁴ and the district court held that the plaintiffs stated a claim

²¹⁰ See 42 U.S.C. § 7543(b)(1)(A)-(C) (200_). Although a full discussion of the issue is beyond the scope of this article, these provisions would appear to allow EPA to deny the petition, although that decision would presumably be subject to judicial review.

²¹¹ 49 U.S.C. § 32902(a), (c). The statute requires that NHTSA 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. 49 U.S.C. § 39209(a), (c), (f).

²¹² 49 U.S.C. § 32919.

²¹³ *Central Valley Chrysler-Jeep v. Witherspoon*, 456 F. Supp. 2d 1160, 1167 (E.D. Cal. 2006). 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 NHTSA. According to the industry, the Corporate Average Fuel Economy (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. For example, the industry plaintiffs alleged that by forcing manufacturers to invest in fuel economy, California’s regulation of GHG emissions would create a Hobson’s choice: “if a manufacturer chooses to redirect its engineers and developers to redesign its vehicles for California, it will sacrifice its efforts to introduce new products in markets other than California, resulting in lost sales for manufacturers and lost goodwill and profits for dealers.” *Id.* at 1169.

²¹⁴ See National Highway Traffic Safety Administration, *Average Fuel Economy Standards for Light Trucks Model Years 2008-2011*; Final rule, 71 Fed. Reg. 17,566, 17,668 (Apr. 6, 2006):

[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.

based on their EPCA preemption argument and therefore refused to grant the state's motion for judgment on the pleadings.²¹⁵

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.²¹⁶ In view of that holding, the implications of EPCA for state regulation of GHG emissions by motor vehicles is less one of federal preemption of state law than of the interaction between two federal statutes. Under the CAA, any state regulation of GHG emissions by motor vehicles must have been approved for a waiver. 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 tend to suggest that 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, one might expect that a statute dealing directly with a subject would take precedence over one that only indirectly implicates the subject.²¹⁷ 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).²¹⁸ By way of contrast, precluding 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.²¹⁹

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.

²¹⁵ *Central Valley Chrysler-Jeep*, 456 F. Supp. 2d at 1174.

²¹⁶ *Massachusetts v. EPA*, 127 S. Ct. 1438, 1459-62 (2007).

²¹⁷ 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 emission standards when it adopted the statutes. In the absence of strong evidence to the contrary, then, 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.

²¹⁸ See *supra* notes ___ and accompanying text.

²¹⁹ 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). In similar fashion, 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 stating that “[a]lthough 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

Indeed, the Supreme Court specifically rejected the claim in *Massachusetts v. EPA* that restrictions on GHG emissions from motor vehicles would conflict with NHTSA's implementation of the CAFE standards under the ECPA. 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 NHTSA.²²⁰ The Court responded that the fact that NHTSA sets CAFE standards "in no way licenses EPA to shirk its environmental responsibilities. EPA has been charged with protecting the public's 'health' and 'welfare,' a statutory obligation wholly independent of [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."²²¹

Under our framework, the benefits of uniform standards provide a strong justification for ceiling preemption of state environmental regulation of motor vehicles,²²² as reflected in the incorporation of express preemption provisions in both the CAA and the EPCA. 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, 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 EPA is not subject to those political safeguards, Congress and the courts should be especially reluctant to allow EPA, through its failure to regulate GHGs, to displace all state authority to do so.²²³

b. State Regulation of Stationary Source Emissions

Efforts by the states to regulate GHGs from stationary sources present different questions because the transactions costs created by varying state standards are much

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 _____. California could experience other adverse effects of global climate change. See, e.g., _____ 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 which predicted a reduction in snow pack in the Sierra Nevada of from 73-90 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 University of California study linking increased wildfire activity to global climate change).

²²⁰ *Massachusetts v. EPA*, 127 S. Ct. 1438, 1461-62 (2007).

²²¹ *Id.* at 1462 (citations omitted).

²²² The adoption of state motor vehicle emission controls on GHGs raises additional issues relating to the balancing of competing interests that will be discussed *infra* notes ____ and accompanying text.

²²³ Cf. Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 163 (2006) (asserting that preemption "is the real boogeyman of public interest lawmaking because it prevents the political process from policing itself").

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 emission controls promulgated under the CAA and any more stringent state standards.

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.²²⁴ 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.²²⁵ 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 similar decisions with respect to CO₂ emissions. Site-specific state decisions on the allocation of CO₂ emissions create no greater transactions costs than the SIPs and Title V permits²²⁶ issued under the CAA for the other criteria pollutants. Likewise, if EPA were to adopt national emission standards for new stationary sources under § 111 of the Act²²⁷ or national emissions standards for hazardous air pollutants under § 112²²⁸ 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.²²⁹

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.²³⁰ In addition, as noted previously, 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 transactions costs would not appear to be sufficiently strong to warrant ceiling preemption of state regulation of stationary sources.

5. NIMBY

As indicated above,²³¹ federal intervention in environmental regulatory matters is sometimes justified as a means of preventing states from trying to exclude important but

²²⁴ Congress included an express floor preemption provision, 42 U.S.C. § 7416, but there is no corresponding provision for ceiling preemption.

²²⁵ See 42 U.S.C. §§ 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").

²²⁶ The CAA required states to develop permit programs as a means of imposing and enforcing controls on individual sources. 42 U.S.C. §§ 7661-7661f.

²²⁷ 42 U.S.C. § 7411.

²²⁸ 42 U.S.C. § 7412.

²²⁹ 42 U.S.C. § 7416.

²³⁰ 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.

²³¹ See *supra* notes ___-___ and accompanying text.

environmentally undesirable activities. 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.²³² 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.²³³

The desire to avoid NIMBYism, 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. 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. 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. 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 to its own residents, who would experience the same harms regardless of where the plant is located.²³⁴

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. In particular, the primary focus of the CAA was to achieve cleaner and healthier air by responding to collective action problems likely to cause under-regulation by states of air-polluting activities, but 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.²³⁵ In principle, it is possible to argue

²³² This is a variant on the free rider problem inherent in the production of public goods. *See supra* note ____ (discussing collective action theory).

²³³ 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, Chemical Facility Anti-Terrorism Standards; Advance Notice of Rulemaking, 71 Fed. Reg. 78,292 (Dec. 28, 2006).

²³⁴ There may be other kinds of localized adverse environmental effects, such as more localized kinds of air pollution or water pollution, that provide reasons for wanting to exclude the plant.

²³⁵ *See, e.g.*, 42 U.S.C. § 7401(b)(1) (setting forth 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 purpose of insuring that economic growth will occur in areas with relatively clean air “in a

for ceiling 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.²³⁶

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. Given the importance of federalism as a constitutional principle, however, caution should be exercised before imposing ceiling preemption on this basis. Of course, regulators or regulated entities might prefer ceiling preemption out of a policy preference for less environmental regulation or 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 traditionally beyond the scope of federal power. Congress should refrain from ceiling preemption unless there are collective action problems that create incentives for states to over-regulate and courts should be reluctant to find implied preemption in the absence of clear evidence of a congressional purpose to prevent over-regulation by states.

Focusing on the economic burdens of regulation, as opposed to environmental issues, there are few collective action problems that would create incentives for states to over-regulate. 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.²³⁷ Externalities may arise when states regulate products sold within the state but produced elsewhere, an issue that arises in connection with motor vehicles and need not be discussed further here.²³⁸

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”).

²³⁶ This argument might in some contexts apply to other kinds of considerations that must be balanced against environmental benefits. For example, the CAFE standards adopted by NHTSA represent that agency’s effort to comply with its obligation under EPCA to balance a series of health, safety, energy policy, and economic factors, which NHTSA has argued would be disrupted by regulation of GHG emissions from motor vehicles. *See supra* note _____. If efforts to comply with a state’s tailpipe emission 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 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.

²³⁷ *See supra* notes ____ 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.

²³⁸ *See supra* notes ____ and accompanying text. Aside from motor 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.

Another 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.²³⁹ The stringency of environmental regulations applicable to utility facilities obviously affects the price of electricity that the regulated utilities charge their customers. Because many of the nation's utilities are connected in a massive interstate grid²⁴⁰ 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. These concerns might justify a legislative decision to preempt state regulation of CO₂ emissions,²⁴¹ 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 over-regulation or under-protection of economic rights when it comes to GHG regulation.²⁴² 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 the top in which they compete to over-regulate pollution-causing activities so as to attract desirable citizens or businesses,²⁴³ 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 had 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.

²³⁹ 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/ResourceCenterPublicationsUSClimateAction>) (stating that electrical utilities accounted for twenty-nine percent of U.S. emissions from 1990 to 1999).

²⁴⁰ See Kathleen C. Reilly, Note, *Global Benefits versus Local Concerns: The Need for a Bird's Eye View of Nuclear Energy*, 70 IND. L.J. 679, 701-02 (1995).

²⁴¹ 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.

²⁴² It might be argued that lack of information could lead states to over-regulate because of information processing errors that lead to exaggerated public fears of environmental harms. See *supra* note ___ and accompanying text. 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 to be accurate than the state's judgment.

²⁴³ See *supra* notes ___ and accompanying text.

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.²⁴⁴ 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.²⁴⁵

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 transactions 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.²⁴⁶

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 Federal Court of Appeals decision under the CAA, *Oxygenated Fuels Ass'n, Inc. v. Davis*,²⁴⁷ 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 contain a minimum oxygen content by weight.²⁴⁸ 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.²⁴⁹ 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

²⁴⁴ See Jonathan H. Adler, *Judicial Federalism and the Future of Federal Environmental Regulation*, 90 IOWA L. REV. 377, 466 (2005).

²⁴⁵ See, e.g., Felicity Barringer, *A Coalition for Firm Limit on Emissions*, N.Y. TIMES, Jan. 19, 2007.

²⁴⁶ 42 U.S.C. § 7416.

²⁴⁷ 331 F.3d 665 (9th Cir. 2003).

²⁴⁸ 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.

²⁴⁹ *Oxygenated Fuels Ass'n, Inc. v. Davis*, 331 F.3d 665, 667 (9th Cir. 2003).

producers unrestricted choice among oxygenate fuel additives and of ensuring an adequate and reasonably priced supply of oxygenated gasoline.²⁵⁰

The Ninth Circuit dismissed both arguments. Beginning with the proposition that various provisions of the CAA reflect the intent to preserve state authority,²⁵¹ including one that explicitly retained special discretion for California to restrict fuel additives,²⁵² 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.”²⁵³ 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. . . . OFA 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 cause a substantial increase in gasoline prices is not the same as saying that assuring inexpensive gasoline was a goal of the Act.²⁵⁴

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.²⁵⁵

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 different balance than

²⁵⁰ *Id.* at 670.

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

²⁵² 42 U.S.C. § 7545(c)(4)(B).

²⁵³ *Oxygenated Fuels Ass’n*, 331 F.3d at 672.

²⁵⁴ *Id.* at 673.

²⁵⁵ *Id.*

the one struck by EPA, these goals do not support implied ceiling preemption of state regulation of GHG emissions.

D. Federal Cap-and-Trade Programs

As an extra added bonus, we offer some preliminary thoughts about a final form of federal regulation of GHG emissions: cap-and-trade programs.²⁵⁶ The regional cap-and-trade program established by the RGGI initiative of the northeastern and mid-Atlantic states provides one example.²⁵⁷ The Kyoto Protocol and the European Union's program for controlling CO₂ emissions both allow emissions trading under a cap-and-trade program.²⁵⁸ 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.²⁵⁹ It seems highly likely, then, that any federal legislation directed at climate change that is adopted will authorize emissions trading.

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 restriction 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.²⁶⁰ 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 emission 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 sell allowances and reduce emissions will instead 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

²⁵⁶ Under a cap-and-trade program, total emissions of a given pollutant are capped and businesses are allocated a proportion of the total as emission 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 pollution.

²⁵⁷ See *supra* note ___ and accompanying text.

²⁵⁸ See, e.g., HUNTER ET AL., *supra* note ___, at 691-94, 705-11.

²⁵⁹ E.g., S. 843, § 704, 108th Cong., 1st Sess. (2003).

²⁶⁰ A state law that directly restricts purchases would have essentially the same effect.

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, 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.²⁶¹ Because mercury is a toxic pollutant that tends to concentrate in the vicinity of the emission 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.²⁶² 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.²⁶³ Although these restrictions interfere with the market for allowances, EPA’s rule recognizes the states’ interest in avoiding hot spots and explicitly allows states to opt out of the trading scheme²⁶⁴ and to adopt more stringent controls.²⁶⁵

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

²⁶¹ Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg. 28,606 (May 18, 2005). The regulations reflect EPA’s conclusion that such an approach represents the most cost-effective way to achieve reductions in mercury emissions from power plants. *Id.*

²⁶² See Lisa Heinzerling & Rena Steinzor, *A Perfect Storm: Mercury and the Bush Administration*, 34 ENVTL. L. REP. (ENVTL. L. INST.) 10297 (2004); Lisa Heinzerling & Rena Steinzor, *A Perfect Storm: Mercury and the Bush Administration, Part II*, 34 ENVTL. L. REP. (ENVTL. L. INST.) 10485 (2004).

²⁶³ See Margaret Kriz, *States Blowing Out the Fuse on Mercury Rule*, 24 ENVTL. F. No. 1 (Nov./Dec. 2006), at 6 (indicating that 24 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 EPA in 2005); John Pendergrass, *States Rolling Out Mercury Cut Plans*, 23 ENVTL. F. No. 6 (Jan./Feb. 2007), at 10).

²⁶⁴ 40 C.F.R. § 60.24(h). See also 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 (indicating that “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.”).

²⁶⁵ 40 C.F.R. § 60.24(g). See also 70 Fed. Reg. at 28,632 (indicating that “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”).

incentives.²⁶⁶ Such restrictions do not involve the exportation of economic burdens to other states.²⁶⁷ Although the state's restrictions on the purchase of allowances has the potential to affect prospective out-of-state sellers,²⁶⁸ the restrictions will be facially neutral; in-state as well as out-of-state sales will both 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.²⁶⁹

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.²⁷⁰ 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. 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.²⁷¹ 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.

²⁶⁶ In response to pressure from federal legislators, for example, 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 INSIDE E.P.A. WEEKLY, Feb. 2, 2007, at 1, 8-9. Nevertheless, when 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). More to the point, the federal regulations will not affect California's pre-existing standard, which is more stringent than the new federal standards. *Id.* § 80.1236.

²⁶⁷ It might be argued, by analogy to the taxation of federal institutions in *McCulloch*, see *supra* notes ___ and accompanying text, that the disruption of the cap-and-trade market for allowances imposes burdens on the federal program that are born 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.

²⁶⁸ 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.

²⁶⁹ 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.

²⁷⁰ On the other hand, some states might bear the costs of climate change more heavily, particularly states with significant coastlines.

²⁷¹ See *supra* notes ___ and accompanying text.

Nonetheless, Congress might not wish to prevent states from reducing the total emissions from sources within their jurisdiction as a means of ratcheting total national emissions below 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. To make such reductions effective, however, it would be necessary to cap the total federal allowance within a state at the level of its more stringent pollution controls. Such an approach would prevent the stringently regulated sources from flooding the market, causing a decline in the value of an allowance in other states. That solution will also contribute to a reduction of total GHG emissions, thereby promoting the environmental protection goals of both the federal and state programs.

Instead of or in addition to restricting purchases 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 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.²⁷² The impetus for the New York statute was its desire to prevent SO₂ emissions by mid-western utilities from migrating to and adversely affecting New York in the form of acid rain.²⁷³ When the facial constitutionality of the 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, including a nationwide allowance transfer system.²⁷⁴

Our model for analyzing ceiling preemption under environmental laws suggests that the Second Circuit reached 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 or reduce their emissions.²⁷⁵ 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, the kind of restrictions that New York adopted in an effort to

²⁷² 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.

²⁷³ See GLICKSMAN ET AL., *supra* note __, at 541-42.

²⁷⁴ *Clean Air Markets 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.

²⁷⁵ Either of those options is presumably more expensive than if allowances could be purchased from the New York utility.

limit out-of-state pollution are unlikely to be a common component of state GHG emission control programs.

In sum, state regulation may undermine the efficiency goals of cap-and-trade programs and might therefore support a congressional decision in favor of ceiling preemption. Nonetheless, such a decision may impair legitimate countervailing state environmental interests that Congress should accommodate in its structuring of 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 emission source) that may result from the purchase of allowances, whether the pollution is caused by sources within or outside of state. Some steps to combat hot spots and the externalization of pollution from sources in upwind or upstream states should be incorporated, 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, 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 states to restrict emissions and capping the allowances within the state so as to conform to the state's standards.

III. 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 lightly.

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 the 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 restrictions on GHG emissions in response to global climate change.²⁷⁶ We believe that this example demonstrates the utility of the framework. It does not provide definitive outcomes for complex issues that depend on a variety of legal and practical considerations, but it helps to identify the right questions and offers insights on how to answer them.

²⁷⁶ We hope in a subsequent article to develop the framework and consider its application to a broader range of regulatory fields.