

Decentralizing Cap-and-Trade? The Question of State Stringency

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I. INTRODUCTION

A cap-and-trade program is likely to be a centerpiece of federal climate-change legislation.¹ The presence of a national market does not, however, render irrelevant the states' vital interest in the goals and operation of a national trading program. An effective climate-change trading program is likely to have profound impacts on our industrial economy and, as a consequence, will present complex political, economic, and environmental issues that are of as much interest at the state as the federal level.² The issue of *who*—federal or state actors—should control key parameters within a cap-and-trade program is contested in current debates about federal climate-change legislation.³

1. A recent federal legislative proposal calls for a cap-and-trade program to control stationary source and transportation emissions. *See generally* American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. §§ 301-360, *available at* <http://www.opencongress.org/bill/111-h2454/text>. That bill narrowly passed the House in June 2009. Carolyn Lochhead, *Landmark Climate Bill Squeaks Through*, S.F. CHRON., June 27, 2009, at A1. Similar legislation is under consideration in the Senate. *See* Dina Cappiello, *EPA to Crack Down on Greenhouse Gas Emitters*, S.F. CHRON., Oct. 1, 2009, A1. President Obama is likely to support such cap-and-trade legislation. *See* John M. Broder, *Setting "Green" Goals*, N.Y. TIMES, Feb. 27, 2009, at A1.

2. *See generally* Timothy Heinmiller, *The Politics of "Cap and Trade" Policies*, 47 NAT. RESOURCES J. 445 (2007). Recognizing the complexity added by political debates, Professor Heinmiller argues that the "politics of cap-and-trade policies are a reality that needs to be recognized and understood rather than lamented by social scientists." *Id.* at 449. *See also id.* at 464 (observing that "the trading of resource rights is not simply a market transaction but a socio-economic reshaping of resource dependent industries and communities").

3. *See* the Introduction in Victor Flatt's article in this issue of the *San Diego Journal of Climate & Energy Law*; STAFF OF HOUSE COMM. ON ENERGY & COMMERCE, CLIMATE CHANGE LEGISLATION DESIGN WHITE PAPER: APPROPRIATE ROLES FOR DIFFERENT LEVELS OF GOVERNMENT (2008) [hereinafter WHITE PAPER], *available at* http://energycommerce.house.gov/images/stories/Documents/PDF/selected_legislation/white%20paper%20st-cl%20roles%20final%202-22.pdf. An early draft of cap-and-trade legislation for the electricity sector preempted state regulation of the sector. *See* J.R.

Should federal law preempt state control over a trading system, so that only the federal government makes key determinations? Or should federal law allow states to exert at least some control within a federal program?

If a federal cap-and-trade program preempts states' roles in a trading system, that preemption could have a substantial impact on the states' ability to address climate change.⁴ To be sure, federal legislation is likely to leave considerable scope for state control in areas like land use.⁵ Federal legislation might also provide states with indirect control over emissions from electricity-generating sources if federal legislation allows states to continue to implement a variety of energy policies, including renewable portfolio standards, energy efficiency programs, and other demand-reduction initiatives.⁶ But direct control over stationary-source emissions in both the electricity and industrial sectors is likely to remain an important lever in achieving greenhouse gas (GHG) reduction goals.⁷ If federal legislation imposing a cap-and-trade program on direct stationary-source

DeShazo & Jody Freeman, *Timing and Form of Federal Regulation: The Case of Climate Change*, 155 U. PA. L. REV. 1499, 1536 n.135 (2007). Legislation under consideration at the time of this writing provides a relatively wide scope for state control, as discussed further below. See *infra* note 92 and accompanying text. See generally American Clean Energy and Security Act §§ 301-360.

4. See Part II(B) of William W. Buzbee's article in this issue of the *San Diego Journal of Climate & Energy Law*.

5. WHITE PAPER, *supra* note 3, at 2, 7; American Clean Energy and Security Act § 222 (amending Title VIII of the Clean Air Act to require regional metropolitan planning organizations to develop greenhouse gas reduction targets and implementation strategies).

6. Renewable portfolio standards, which promote alternative energy, and demand-reduction measures, which promote conservation and energy efficiency, reduce the need for carbon-based electricity and thereby provide an indirect mechanism for reducing emissions from electricity-generating units. Many states are, or could, pursue these strategies. See, e.g., FRANZ T. LITZ, TOWARD A CONSTRUCTIVE DIALOGUE ON FEDERAL AND STATE ROLES IN U.S. CLIMATE CHANGE POLICY 8, 14-15 (Pew Center on Global Climate Change 2008), <http://www.pewclimate.org/docUploads/StateFedRoles.pdf>; Thomas A. Peterson et al., *Developing a Comprehensive Approach to Climate Change Policy in the United States that Fully Integrates Levels of Government and Economic Sectors*, 26 VA. ENVTL. L.J. 227, 239 (2008) (observing that energy efficiency, conservation, and renewable energy are key areas for state action). The federal legislation under consideration at the time of this writing creates a federal renewable energy requirement but does not preempt a state's ability to establish a more stringent requirement than the federal standard. American Clean Energy and Security Act § 101 (amending Title VI of the Public Utility Regulatory Policies Act of 1978). Although the federal legislation provides for an increased federal role by requiring states to adopt more stringent building codes, actual control will remain at the state level, and states retain the power to be more stringent than the federal minimum. American Clean Energy and Security Act § 201 (amending Energy Conservation and Production Act § 304(c)).

7. According to the U.S. Environmental Protection Agency, in 2007, 34% of U.S. GHG emissions came from electricity generation and 20% came from industrial sources. EPA, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2007 ES-14 (2009).

emissions preempts state control over the covered sources, that preemption would significantly impact the scope of state climate policies and their capacity to regulate the facilities within their jurisdictions.

At the same time, state initiatives could have national consequences in light of the interconnections created by a national trading market, the lack of uniformity generated by divergent state approaches, and the duplicative administrative resources devoted to regulatory programs at both the federal and state levels. Determining the appropriate balance between the potential benefits and detrimental impacts of allowing state control poses a significant challenge.

This Article addresses a critical question about a state's role in the operation of a national cap-and-trade program: whether federal legislation should allow states to be more stringent than the federal government.⁸ Numerous scholars have articulated compelling justifications for allowing states to be more stringent than the federal government.⁹ This Article takes the next step: it not only reviews these justifications but also assesses particular mechanisms for achieving state stringency and evaluates their potential negative consequences in order to provide a more nuanced assessment of the wisdom of state stringency. I argue that allowing states to achieve greater stringency is justified notwithstanding certain negative consequences, particularly since the states are unlikely to impose more stringent targets (and risk negative consequences) unless the federal program is inadequate. In addition, the analysis of differing

8. Certain complications could arise in determining stringency. Here, I refer only to the absolute number of allowances required. A key issue, however, is the extent to which the trading system permits the use of not only allowances representing emissions within the covered sectors but also the use of offsets that come from abroad or for domestic sources that are not covered by the trading system. An unanswered question is whether a state program that imposed a more lenient annual cap, but limited offset use, is more or less stringent than a federal cap that allows extensive use of offsets.

9. See generally William L. Andreen, *Federal Climate Change Legislation and Preemption*, 3 ENVTL. & ENERGY L. & POL'Y J. 261 (2008); WILLIAM ANDREEN ET AL., COOPERATIVE FEDERALISM AND CLIMATE CHANGE: WHY FEDERAL, STATE, AND LOCAL GOVERNMENTS MUST CONTINUE TO PARTNER (Center for Progressive Reform 2008), available at <http://www.progressiveregulation.org/articles/federalismClimateChange.pdf>; Buzbee, *supra* note 4, at Part II(B); Robert L. Glicksman & Richard E. Levy, *A Collective Action Perspective on Ceiling Preemption by Federal Environmental Regulation: The Case of Global Climate Change*, 102 NW. U.L. REV. 579, 604 (2008); Flatt, *supra* note 3, at Part VI; Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 ARIZ. L. REV. 681 (2008); cf. William W. Buzbee, *Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction*, 82 N.Y.U. L. REV. 1547 (2007) (arguing that federal legislation should generally allow states to be more, but not less, stringent than federal standards).

mechanisms' varying impacts should assist decision-makers considering alternative policy designs.

This Article is the first in a series that will address the wisdom of allowing state control within a federal trading system. Subsequent scholarship will address trading policies more generally, including the extent to which federal legislation should allow states to impose direct facility regulations, differing offset requirements, or trading restrictions to achieve potential economic and environmental co-benefits.¹⁰ Subsequent scholarship will also address allowance distribution¹¹—namely, whether the federal government or the states should control the distribution of federal allowances, an issue with substantial political and economic implications.

Part II of this Article articulates the primary justifications for allowing states to set more stringent caps. The first is the national importance of creating a safety net in the not-unlikely event of current or future federal failure. The second is grounded in democratic theory: the states' democratic prerogative to address climate-change and control emissions from in-state sources.

Part III turns to practical mechanisms to achieve state stringency. It first observes that, in a national trading program, states cannot achieve stringency without the capacity to retire the allowances associated with their additional reductions. Since one cannot identify the strengths and weaknesses of letting states set caps and retire allowances without evaluating the practical consequences of different forms of achieving stringency, Part III describes the range of mechanisms through which states could both reduce emissions and retire the associated allowances. The mechanisms states could use to achieve stringency will depend upon the powers granted the states by federal legislation. Part III therefore describes a set of possible decentralization options and the mechanisms that states could use to achieve stringency within each model.

Part IV articulates the potential adverse impacts that could result from states using these mechanisms to achieve more stringent goals. It considers potential impacts on the national allowance market, negative impacts on out-of-state consumers, uniformity, and administrative efficiency considerations.

10. Alice Kaswan, *Decentralizing Cap-and-Trade? The Question of State Trading Controls within a Federal Cap-and-Trade Program*, 28 VA. ENVTL. L.J. (forthcoming 2010).

11. In a federal cap-and-trade program, the federal government would set a yearly cap on emissions from the sectors covered by the program. The government would then allocate the allowances associated with the cap, with each allowance representing a right to emit a certain quantity of GHGs.

Part V concludes that, on balance, state stringency is justified. The benefits of creating a safety net and the democratic goals served by allowing state stringency are highly compelling. And while the adverse impacts present cause for concern, they are relatively unlikely to occur given the extensive collective action impediments to states establishing more stringent objectives. States are likely to set more stringent targets only when the federal goal is blatantly inadequate, precisely the scenario in which state action is most justified. Considering the potential adverse impacts on the merits, Part V concludes that potential external impacts on the national allowance market are the most serious prospective consequence and an important factor in developing options for achieving stringency. Nonetheless, some impact on the national allowance market is acceptable in light of the significant benefits of state action. Potential impacts on out-of-state consumers, uniformity, and administrative efficiency are long-accepted costs of a federal system that respects the inherent value of state sovereignty, and therefore present less cause for concern.

Part VI briefly articulates some of the implications of the foregoing analysis for federal legislation. While it does not recommend either a particular mechanism for achieving stringency or a particular decentralization model, it makes clear that federal legislation must explicitly delineate the contours of state power in order to enable states to exercise autonomy free from the threat of legal challenges.

Before turning to the Article's primary arguments, I first articulate several preliminary assumptions. This Article does not contemplate a purely decentralized approach that would rely solely upon state or regional action. While many states have initiated state and regional efforts to combat climate change, those efforts cannot substitute for a federal program.¹² The Article assumes a federal cap-and-trade program with trading in federal allowances.

The Article addresses only a potential "downstream" cap-and-trade program focused on stationary sources—a program that would impose allowance requirements on the actual emitters of GHGs. It does not address an "upstream" program that would impose requirements on entities like oil producers, mining companies, the transportation sector,

12. See Kirsten H. Engel & Barak Y. Orbach, *Micro-Motives and State and Local Climate Change Initiatives*, 2 HARV. L. & POL'Y REV. 119, 135-36 (2008); Alice Kaswan, *A Cooperative Federalism Proposal for Climate Change Legislation: The Value of State Autonomy in a Federal System*, 85 DENV. U. L. REV. 791, 794-97 (2008).

or other entities that are upstream from, and do not directly cause, emissions.¹³

The Article also focuses on the wisdom of designing federal legislation to incorporate state control, not judicial standards for determining whether and to what degree federal legislation, once designed, preempts state action.¹⁴

II. THE BENEFITS OF ALLOWING STATES TO SET MORE STRINGENT CAPS

A. *The Nature and Significance of the Caps*

A trading program's stringency is fundamental to achieving environmental goals and to the overall effectiveness of a trading program.¹⁵ Climate policies typically embody two types of caps, both of which play a crucial role. The first type of cap is characterized by overarching long-term, economy-wide goals. Such goals are often established as a percentage reduction from a given baseline year by a certain date, like 20% below 2005 levels by 2020.¹⁶ The economy-wide goals in recent legislative proposals reflect the share of global reductions that the jurisdiction is politically willing to accept, a judgment rooted in a complex web of environmental and economic considerations.

Implementing a GHG trading program requires a second step: translating the general goals into yearly emissions allocations for the

13. See Robert N. Stavins, *A Meaningful U.S. Cap-and-Trade System to Address Climate Change*, 32 HARV. ENVTL. L. REV. 293 (2008) (proposing upstream cap-and-trade program); David M. Driesen & Amy Sinden, *The Missing Instrument: Dirty Input Limits*, 33 HARV. ENVTL. L. REV. 65 (2009). Nor does the Article address the potential interrelationship between upstream and downstream controls, whether imposed at the federal or state levels. While upstream controls may ultimately present a useful complement or alternative to downstream requirements, such controls, and the relative role of the federal government and the states in imposing them, raise issues that are beyond the scope of this Article.

14. For analyses of how the courts should evaluate a future conflict between federal climate-change law and state initiatives, see, for example, Buzbee, *supra* note 4; Dan Farber, *Climate Change, Federalism, and the Constitution*, 50 ARIZ. L. REV. 879 (2008); Glicksman & Levy, *supra* note 9; Alexandra B. Klass, *State Innovation and Preemption: Lessons from State Climate Change Efforts*, 41 LOY. L.A. L. REV. 1653 (2008); cf. James R. May, *Of Happy Incidents, Climate, Federalism, and Preemption*, 17 TEMP. POL. & CIV. RTS. L. REV. 465 (2008) (addressing preemption of state law under the existing Clean Air Act).

15. See generally Lesley K. McAllister, *The Overallocation Problem in Cap-And-Trade: Moving Toward Stringency*, 34 COLUM. J. ENVTL. L. 395 (2009).

16. For example, the Waxman-Markey legislation establishes the goal of reducing emissions by 20% below 2005 levels by 2020 and by 83% by 2050, with a number of interim goals. American Clean Energy and Security Act, H.R. 2454, 111th Cong. § 311 (2009) (establishing Title VII, section 702).

covered sectors.¹⁷ By specifying the number of allowances to be distributed to facilities in the program each year, the yearly emissions allocations function as a kind of cap for the covered sectors.¹⁸ These yearly “caps” determine the proportion of the overall emissions reduction goal to be achieved (or at least financed) by the covered facilities rather than by sources that are not covered by the cap-and-trade program.¹⁹ The yearly caps are critical to the achievement of actual emissions reductions in any given year. If the yearly cap is higher than actual existing emissions from covered facilities, so that facilities receive more allowances than they need, then the facilities are unlikely to reduce emissions. Even if the cap is below existing emissions, its stringency is critical to whether facilities will be motivated to make reasonably achievable reductions.²⁰

The yearly allowance allocations also dictate the pace at which the overarching economy-wide goals will be reached. Policymakers could require the same percentage reduction in allowance allocations each

17. See, e.g., *id.* (establishing Title VII, section 721, which dictates the number of allowances to be issued each year of the cap-and-trade program). Prior trading programs for traditional pollutants have generally had only one cap: the emissions-reduction goals for the regulated sectors have translated directly into the annual caps for those sectors. For example, in the Acid Rain Program, the caps for the program’s two phases were simply based upon achieving a certain level of reduction from the facilities covered in each phase of the program. See McAllister, *supra* note 15, at 399-400.

18. The yearly allocation numbers constitute only a “quasi-cap.” If the trading program permits the use of offsets, then the yearly allowance allocation does not function as a true cap. A covered entity that purchased offsets from reductions (or sequestration) outside of the covered sector would be able to use offsets, not just the initially allocated allowances, to cover its emissions. Although properly implemented offsets could generate real reductions, they allow emissions within the covered sector to exceed the yearly allowance allocation.

19. Assume, for example, that a program sought to reduce all emissions to 1 million tons per year by 2015. Assume further that the sectors covered by the cap-and-trade program constituted 80% of the nation’s emissions, while 20% came from “uncovered” sources like small facilities and agricultural practices. If the jurisdiction wanted to concentrate reductions in the covered sectors, it could limit the number of emission allowances for the covered sectors to 750,000, effectively requiring greater reductions from the covered sectors. The fact that the covered sectors would be responsible for reducing emissions to 750,000 tons does not, however, necessarily mean that all the reductions would, in fact, occur within the covered sectors. While only 750,000 allowances would be distributed, if facilities in the covered sectors are permitted to purchase offsets, they could purchase reductions from outside the covered sectors to legitimate additional emissions. See *supra* note 18 (discussing impact of offsets on yearly allowance allocations to covered sectors).

20. See McAllister, *supra* note 15, at 401-03 (describing failure to achieve feasible reductions in the Acid Rain Program due to an insufficiently stringent cap).

year, intensify required reductions as the long-term goals approach, or concentrate reductions in the early years of the program. The pace of reductions established by the yearly caps is environmentally significant because earlier reductions have greater climate-change benefits given the longevity of GHG emissions in the atmosphere.²¹

Economy-wide goals and annual allowance allocations are economically as well as environmentally significant. The pace of reductions and the relationship of a yearly cap to that year's actual emissions could significantly affect the short- and long-term costs of coping with climate change.²² The potential economic impact of climate-change policies has been a significant issue in recent policy debates.²³ Further, the timing of the reductions also has economic implications given the long-term investments associated with energy infrastructure.²⁴ Thus, both the stringency of the long-term goals and the pace at which they are attained present critical environmental and economic issues.

B. State Stringency as a Safety Net

As many scholars have noted, a fundamental justification for allowing overlapping jurisdiction—for allowing states as well as the federal government to set emission reduction targets—is that the states can function as a safety net if the federal program proves inadequate.²⁵ If

21. See Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1164-68 (2009). The IPCC, in its most recent report, emphasized the importance of near-term reductions and noted that “[d]elayed emission reductions significantly constrain the opportunities to achieve lower stabilization levels and increase the risk of more severe climate-change impacts.” INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT, SUMMARY FOR POLICYMAKERS 20 (2007).

22. See, e.g., MCKINSEY & COMPANY, PATHWAYS TO A LOW-CARBON ECONOMY: VERSION 2 OF THE GLOBAL GREENHOUSE GAS ABATEMENT COST CURVE (2009), http://www.mckinsey.com/client/service/ccsi/pathways_low_carbon_economy.asp (discussing costs of climate-change policies); NICHOLAS STERN, STERN REVIEW: THE ECONOMICS OF CLIMATE CHANGE (2007), http://www.hm-treasury.gov.uk/stern_review_report.htm (discussing economics of climate policy).

23. See, e.g., Jennifer A. Dlouhy, *Emissions Cap Support Wave[r]s among Key Democrats*, S.F. CHRON., May 14, 2009, at A6 (describing legislative concerns about economic impacts of proposed federal climate legislation).

24. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT, SUMMARY FOR POLICYMAKERS 19 (2007), available at http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf. See also MCKINSEY & COMPANY, *supra* note 22, at 12-14 (discussing the importance of significant near-term reductions and the environmental and economic risks of delay).

25. See Andreen, *supra* note 9, at 298 (arguing that state programs should not be preempted because “a more plural regulatory system . . . can help mitigate the damage caused by possible regulatory and administrative failure at the federal level”); Buzbee, *supra* note 4, at Part IV; LITZ, *supra* note 6, at 11; Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 161, 178-81

states are prevented from setting more stringent long-term goals and annual caps, then the entire nation is at the mercy of the federal government's potentially misguided judgment. The risk is not remote. Several existing trading programs have set insufficiently stringent targets that have, in turn, led to over-allocated allowances.²⁶ In some instances, the over-allocation resulted in failure; allowances exceeded emissions, creating little, if any, incentive for emissions reductions.²⁷ In other instances, like the U.S. Acid Rain Program, emissions were reduced to some extent but not to the extent readily feasible.²⁸

Regulatory redundancy is particularly important where government entities operate under uncertainty because uncertainty increases the risk of erroneous decisions.²⁹ Even if federal targets appear sufficient at the outset, they could prove deficient over time as new information about the risks of climate change or opportunities for low-cost emission

(2006); NATIONAL ASSOCIATION OF CLEAN AIR AGENCIES (NACAA), *DEFINING THE ROLE OF STATES AND LOCALITIES IN FEDERAL GLOBAL WARMING LEGISLATION* 11 (June 2008), <http://www.4cleanair.org/documents/NACAAGWConfProceedingsFINAL060608.pdf>. See generally Buzbee, *supra* note 9, at 1590-91, 1594-95 (discussing general importance of allowing overlapping state and federal control to provide a state law backup in the event of federal agency capture). As Professor Kirsten Engel has expressed, the states' ability to react to an ineffective federal program is critical; "[p]reemption . . . prevents the political process from policing itself." Engel, *supra*, at 163.

26. See McAllister, *supra* note 15.

27. Allowances exceeded likely "business as usual" (BAU) emissions during the first phase of the European Union's European Trading System (ETS). *Id.* at 411-12; see LARRY PARKER, CONG. RESEARCH SERV., *CLIMATE CHANGE: THE EU EMISSIONS TRADING SCHEME (ETS) GETS READY FOR KYOTO 6* (2007), available at <http://fpc.state.gov/documents/organization/92960.pdf>. Estimates differ, however, on what emissions "would have been." Another analysis concludes that emissions in the EU were lower than they otherwise would have been. A. DENNY ELLERMAN & PAUL L. JOSKOW, *THE EUROPEAN UNION'S EMISSIONS TRADING SYSTEM IN PERSPECTIVE* 34-35 (2008), available at <http://www.pewclimate.org/docUploads/EU-ETS-In-Perspective-Report.pdf>. In the RECLAIM program, a southern California effort to improve air quality, allowances exceeded likely BAU emissions in the program's early years, dampening emission reduction incentives. McAllister, *supra* note 15, at 412-13, 419-21. The allowances issued in a Chicago air pollution control program consistently exceeded BAU emissions. *Id.* at 407-08, 411, 419.

28. Although the Acid Rain Program has led to significant emissions reductions, the program likely failed to achieve reductions that were technologically and economically feasible, particularly in its first phase. See McAllister, *supra* note 15, at 438-39.

29. Professors Engel and Adelman observe that environmental regulation is developed under conditions of uncertainty and that even well-intentioned legislation or regulation routinely fails in light of new developments. David E. Adelman & Kirsten H. Engel, *Adaptive Federalism: The Case Against Reallocating Environmental Regulatory Authority*, 92 MINN. L. REV. 1796, 1799-1800 (2008); See Buzbee, *supra* note 4, at Part I(C); see also Buzbee, *supra* note 9, at 1619 (arguing that it is particularly important to allow for state experimentation in new regulatory areas).

reductions become available.³⁰ Moreover, regulatory programs, once created, risk stagnation as Congress and implementing agencies become invested in the status quo.³¹ Should existing caps prove insufficient, states may be more nimble at adjusting their caps than the federal government.³²

If states retain the power to respond to federal inadequacy they could not only directly make-up for the federal failure but also catalyze improved federal legislation.³³ As states respond to a federal lapse with their own successful initiatives, federal lawmakers could seek to emulate state successes at the federal level. Moreover, impacted industries in the more stringent states are likely to lobby for national action that would require all states to achieve the same goals, equalizing the playing field.

There is a significant risk that federal climate policy will fail to set emission reduction goals that constitute the United States' necessary contribution to the global effort to avert catastrophic climate change.³⁴ The political pressures for weak federal economy-wide goals are strong.³⁵ While many industries have supported climate-change regulation

30. See Buzbee, *supra* note 4, at Part I(B); McAllister, *supra* note 15, at 435-39.

31. See Buzbee, *supra* note 9, at 1494-95; 1608-09 (discussing risk of regulatory stagnation in general); Buzbee, *supra* note 4, at Part IV (discussing risk of stagnation in federal climate program).

32. See McAllister, *supra* note 15, at 441 (observing that Congress was unable to mobilize to adjust the congressionally set cap for the Acid Rain Program notwithstanding evidence that a more stringent cap would be environmentally beneficial and economically justified); LITZ, *supra* note 6, at 11 (describing New York's adoption of a more stringent program in response to the inadequacies of the federal Acid Rain Program).

33. See Buzbee, *supra* note 4, at Part IV; Engel, *supra* note 25, at 170-73.

34. See Buzbee, *supra* note 4, at Part I(A) (stating that the greatest risk of federal failure is that federal law will "set[] the cap too high"). Although not without dispute, the Intergovernmental Panel on Climate Change has suggested that, to reduce atmospheric carbon concentrations to 450 ppm, developed countries must reduce their emissions by 25-40% below 1990 levels by 2020 and by 80-95% below 1990 levels by 2050. See IPCC, CLIMATE CHANGE 2007: MITIGATION. CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 776 (Bert Metz et al. eds., Cambridge Univ. Press 2007). James Hansen, a well-known atmospheric scientist, has concluded that a sustainable level of carbon concentrations is 350 ppm, not 450 ppm, a goal that would necessitate even more radical emissions cuts. See James Hansen et al., *Target Atmospheric CO₂: Where Should Humanity Aim?* 2 ATMOS. SCI. J. 217, 228 (2008) available at http://www.columbia.edu/~jeh1/2008/TargetCO2_20080407.pdf.

35. See Buzbee, *supra* note 4, at Part I(A); cf. *Cap-and-Trade Charade: The Political and Business Self-Interest Behind Carbon Limits*, WALL ST. J., Mar. 3, 2007, at A8 (observing the intensely political nature of cap-setting and industries' interest in how cap levels will be set). One scholar notes that political compromise often leads to caps that freeze rather than reduce use; environmentalists are satisfied by the freeze, and regulated entities are willing to accept the status quo. See Heinmiller, *supra* note 2, at 454. While the fear of climate change is unlikely to lead to a mere freeze in emissions, the political dynamic is instructive.

and recognize both its necessity and its inevitability,³⁶ the powerful fossil fuel industry—including coal, oil, and gas—is likely to perceive a climate regime as a significant threat.³⁷ The existing infrastructure serves the fossil-fuel industry, and a large workforce relies upon it.³⁸ The fossil-fuel industry is concentrated, politically organized, and powerful, in contrast to more diffuse and less financially influential environmental groups, the just emerging-alternative technology sector, and the future generations who will be most impacted by climate change.³⁹ In addition, public utilities are likely to be concerned about the costs and implementation of strict mandates because some existing utility regulations and rate structures create impediments or disincentives to investing in the measures necessary to achieve stringent targets—namely, alternative energy and energy efficiency.⁴⁰

Fundamentally, it is difficult for members of Congress or anyone else to ignore the short-term pain that a transition from carbon will likely cause, particularly when both the environmental benefits of avoiding climate change and the economic benefits of new green technologies are remote abstractions that have yet to be realized.⁴¹ Moreover, since climate-change harms will be unevenly distributed and are likely to be most serious outside the United States, many legislators and their

36. Many industries have joined the Climate Action Partnership, a collaborative industry and nongovernmental organizational effort to advocate for federal climate-change legislation. See United States Climate Action Partnership Members (2009), <http://www.us-cap.org/about/members/index.asp>.

37. See Kirsten H. Engel & Scott R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 *ECOLOGY L.Q.* 183, 214 (2005).

38. Terry Dinan, *Economic and Budget Issue Brief Trade-Offs in Allocating Allowances for CO₂ Emissions*, 2007 Congressional Budget Office 3, http://www.cbo.gov/ftpdocs/89xx/doc8946/04-25-Cap_Trade.pdf.

39. See Lazarus, *supra* note 21, at 1168 (describing power of entrenched interests); *id.* at 1180-83 (describing why it is more difficult for environmentalists to be politically powerful).

40. See Sidney A. Shapiro & Joseph P. Tomain, *Rethinking Reform of Electricity Markets*, 40 *WAKE FOREST L. REV.* 497 (2005) (describing how electricity regulation fails to encourage environmentally sound electricity generation).

41. See Buzbee, *supra* note 4, at Part I(A); Farber, *supra* note 14, at 920-21 (observing that regulation is likely to be “too timid” because it does not adequately represent the interests of the future generations likely to suffer the most); Lazarus, *supra* note 21, at 1172 (describing the innate human difficulty in taking action with short-term impacts in order to provide long-term benefits); *id.* at 1179-80 (describing how short election cycles lead policymakers to focus on short-term rather than long-term consequences).

constituents may not perceive the requisite urgency for legislation.⁴² On a practical level, the future prospects of carbon-capture-and-storage technology could lead Congress to delay significant near-term reduction requirements in the hope that the technology will obviate the need to transition away from coal.⁴³ The federal government may, therefore, fail to set stringent economy-wide, percentage-reduction goals.

Recently proposed federal legislation provides a case in point. The Waxman-Markey bill establishes an economy-wide goal of reducing emissions by 20% below 2005 emissions by 2020.⁴⁴ In House negotiations, however, the bill reduced the percentage of the reduction that must come from the sectors covered by the bill's proposed trading program to 17% below 2005 emissions by 2020.⁴⁵ Both goals fall far short of the minimum reductions needed by developed countries to avoid substantial climate risks. Based on scientific assessments of potential mitigation scenarios, the IPCC concluded that developed countries would have to reduce emissions by 25%-40% below 1990 levels by 2020 to achieve sustainable atmospheric concentrations of 450 ppm of carbon dioxide.⁴⁶ Since the IPCC used a lower 1990 baseline, not the 2005 baseline employed by the Waxman-Markey bill, the IPCC calls for a much more substantial reduction. Scientists have recently suggested that the 450 ppm goal is not sustainable, and that even deeper reductions are necessary to achieve a more sustainable 350 ppm concentration of atmospheric carbon dioxide.⁴⁷ Determining the appropriate target is likely to be a politically complex undertaking and this Article is not intended to stipulate the "correct" answer.⁴⁸ The comparison between the Waxman-Markey bill and the IPCC's projections nonetheless reveals the risk that federal legislation could prove insufficient.

42. See Lazarus, *supra* note 21, at 1170.

43. See Alexandra B. Klass & Elizabeth J. Wilson, *Climate Change and Carbon Sequestration: Assessing a Liability Regime for Long-term Storage of Carbon Dioxide*, 58 EMORY L.J. 103, 115-23 (2008) (describing carbon capture and storage); DAVID J. HAYES & JOEL C. BEAUVAIS, GLOBAL CLIMATE CHANGE AND U.S. LAW 691, 707-15 (Michael B. Gerrard, ed. 2007).

44. American Clean Energy and Security Act, H.R. 2454, 111th Cong. § 311 (2009) (establishing Title VII, section 702).

45. *Id.* (establishing Title VII, section 703).

46. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CONTRIBUTION OF WORKING GROUP II TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL OF CLIMATE CHANGE, CLIMATE CHANGE 776 (Bert Metz et al. eds., Cambridge Univ. Press 2007), available at, <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter13.pdf>.

47. See Hansen et al., *supra* note 34, at 1.

48. See McAllister, *supra* note 15, at 396; David Driesen, *Capping Carbon 15* (unpublished manuscript on file with author) (discussing how caps should be set), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1463016.

Even if the federal government is willing to establish lofty economy-wide goals that appear to lead the nation to significant reductions in the long term, it may establish short-term annual caps that result in over-allocated allowances.⁴⁹ Past trading programs have over-allocated allowances, particularly as a program begins, to build industry comfort with and support for trading programs.⁵⁰ Annual caps could also be premised upon projected economic growth that fails to materialize.⁵¹ If growth and associated industrial activity is less than expected, then more allowances will be released than are appropriate for the level of economic activity, resulting in fewer emissions reductions.⁵² Another risk, borne out in the European Union, is that the annual caps will be based upon inaccurate modeling that overestimates existing emissions.⁵³ While the United States could learn from European missteps, success is not assured, particularly given the political pressures that are likely to attach to setting annual allowance allocations.⁵⁴

Of course, similar political forces and economic concerns could keep states from setting sufficiently stringent caps. But the concentrated power of industries opposed to vigorous climate-change legislation is

49. See Buzbee, *supra* note 9, at 1551-52 (observing that “[e]ven if the ultimate endpoint cap is sound, the interim steps to get there can be too slow and lax” and that “those most directly affected will surely lobby to put off the day when production and behavioral changes, and attendant expenses, will have to be confronted . . .”).

50. See McAllister, *supra* note 15, at 414 (describing general issue of overallocation to obtain political support); *id.* at 433 (noting how Illinois designed its allowance allocation rules to “make businesses feel comfortable”); *id.* at 434 (describing how RECLAIM’s allowance allocation process included concessions designed to make it “politically salable”).

51. Policymakers are loathe to take actions that could ultimately constrain growth, and are, hence, likely to err on the side of overestimating rather than underestimating projected emissions.

52. In other trading programs, inaccurate (and optimistic) projections of economic growth have led to emissions projections that exceed actual emissions. See McAllister, *supra* note 15, at 412-13, 433 (describing desire to allow for economic growth as one reason for overallocation in the RECLAIM program); LARRY PARKER, CRS REPORT FOR CONGRESS, CLIMATE CHANGE: THE EU EMISSIONS TRADING SCHEME (ETS) GETS READY FOR KYOTO 12-13 (2007) (describing state desire to allow for economic growth as one factor in states’ setting insufficiently stringent caps), <http://fpc.state.gov/documents/organization/92960.pdf>.

53. A. DENNY ELLERMAN & PAUL L. JOSKOW, THE EUROPEAN UNION’S EMISSIONS TRADING SYSTEM IN PERSPECTIVE 32 (Pew Center on Global Climate Change 2008), <http://www.pewclimate.org/docUploads/EU-ETS-In-Perspective-Report.pdf>; PARKER, *supra* note 52, at 5-6.

54. See McAllister, *supra* note 15, at 396 (describing reasons why allowances may be overallocated).

unlikely to be as potent in each state as it is in the federal government.⁵⁵ The surge in state climate activity to date suggests that at least some states will act if the federal government fails to do so.⁵⁶ That state potential could be significant not only in the face of federal inaction but also in the face of insufficient federal action. Moreover, the issue is not whether states will act but whether federal law should prevent them from doing so. Skepticism about the states' willingness to act does not justify preempting their capacity to do so.

C. Democratic Justifications for State Stringency

The risk of federal failure is not the only justification for allowing states to set more stringent caps than the federal government. The determination of where to set long-term reduction goals and annual caps requires critical political judgments.⁵⁷ The states as well as the federal government seek the opportunity to express the political views of their citizens about the appropriate level of emissions reductions to be achieved.⁵⁸

Some have argued that state citizens' political will is less central in the context of climate change than in the context of traditional pollutants due to the global, rather than local, consequences of GHG emissions.⁵⁹

55. For example, coal industry opposition to climate legislation is likely to be less intense in states that do not rely upon coal mining or inexpensive coal power. One potential explanation for California's relatively aggressive climate-change policy is that the state does not depend heavily upon coal-fired power.

56. See generally PEW CENTER ON GLOBAL CLIMATE CHANGE, U.S. STATES AND REGIONS, <http://www.pewclimate.org/states-regions> (last visited Oct. 21, 2009) (describing state climate-change programs).

57. See Heinmiller, *supra* note 2, at 452-53 (describing the political tensions between environmentalists and resource users that arise in cap-setting debates); *id.* at 455 (noting that setting caps is not "simply a technical exercise" but "the subject of intense political struggle and negotiation by opposing interests").

58. See ANDREEN ET AL., *supra* note 9, at 8 (describing state and local desire to exceed federal minimums to meet constituent demands); *id.* at 284, 294 (observing that states might want to set more stringent caps or deadlines than a federal cap-and-trade program); NACAA, *Preserving the Rights of the States*, in DEFINING THE ROLE OF STATES AND LOCALITIES, *supra* note 25, at 12-13 (observing that many state agency officials fear that a national program will be insufficiently stringent and that states will seek flexibility in reduction goals and mechanisms for achieving them); see generally, Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570, 609-610 (1996); see Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1210 (1977) (describing democratic justification for allowing state environmental decision-making).

59. See Andreen, *supra* note 9, at 288 (describing argument); WHITE PAPER, *supra* note 3, at 11-12 (stating that "[o]ne key distinction between climate change and most other environmental problems is that climate change is a global, not local, problem, perhaps providing less need for allowing States to be more stringent"). This argument is consistent with the "matching principle," the principle that the scale of the regulating

According to this argument, existing pollution control laws, like the Clean Air Act (CAA) and the Clean Water Act, employ a cooperative federalist model that allows states to continue to exercise control because those statutes, unlike climate-change legislation, address pollution that has local consequences. Although federal law was necessary due to a variety of collective action failures,⁶⁰ the local pollution consequences justified giving states continued, overlapping power to control facility emissions, particularly under the CAA.⁶¹ And even though federal environmental legislation was partly motivated by the transboundary nature of many environmental harms—a parallel concern in the climate-change context—that transboundary harm was not exclusive of but, rather, in addition to local impacts. According to this argument, the absence of local GHG impacts renders state democratic control unnecessary.

The argument that local or state control is unnecessary because climate change is a global problem oversimplifies the issue. State views on the appropriate level of stringency could differ significantly from federal judgments. States' more stringent commitments could, in some cases, be premised on a general concern about the global consequences of climate change.⁶² In other states, the potential local consequences of

jurisdiction should match the scale of the environmental problem. See Henry N. Butler & Jonathan R. Macey, *Externalities and the Matching Principle: The Case for Reallocating Federal Authority*, 14 YALE L. & POL'Y REV. 23, 25 (1996).

60. See Robert V. Percival, *Environmental Federalism: Historical Roots and Contemporary Models*, 54 MD. L. REV. 1141 (1995) (describing why states failed to enact sufficient environmental protection laws, prompting federal action).

61. For example, the federal Clean Air Act gives states a central role in making the hard choices about how to achieve federal air quality standards. The federal government does establish minimum technology-based standards for all new sources and for existing sources in nonattainment areas. Clean Air Act, 42 U.S.C. § 7411 (2009) (new source performance standards); *id.* § 7503(a)(2) (establishing requirement that new sources in nonattainment areas achieve the lowest achievable emission rate); *id.* § 7502(c)(a) (requiring states to implement reasonably available control technology requirement for existing sources in nonattainment areas). But the states must develop state implementation plans that describe how the state will attain National Ambient Air Quality Standards. *Id.* § 7410(a)(1). Although the federal government sets minimum technology-based requirements for facilities under the federal Clean Water Act, the Act's requirement that states impose controls to meet their water quality standards is likely to give states an increasing role in determining facility permitting requirements. Clean Water Act, 42 U.S.C. § 1313(d) (2009) (establishing TMDL process).

62. See Engel & Orbach, *supra* note 12, at 129-30 (describing the desire for a "warm glow" as one explanation for state and local climate-change initiatives that otherwise appear irrational). States could also seek to attract residents and businesses by creating a reputation as an environmentally responsible state. See Barry G. Rabe et al.,

climate change could prompt an urgency that is not shared in other parts of the country, where the predicted impacts are less drastic or more uncertain.⁶³ For example, rising sea levels will significantly impact coastal states.⁶⁴ In some parts of the country, increasing temperatures will cause dangerous heat waves,⁶⁵ reduce water supplies,⁶⁶ and worsen local air pollution.⁶⁷ Changing weather patterns could impact agriculture dramatically.⁶⁸ To be sure, local actions cannot control these impacts; a state's stringency is unlikely, standing alone, to reduce global emissions enough to protect the more stringent state.⁶⁹ But the differential impacts within the United States could nonetheless create differing political commitments to addressing climate change. Democratic principles suggest that citizens should retain the ability to express their stronger commitments through more stringent caps.

The relative costs and benefits of setting stringent caps also vary by state and could influence the level of stringency that a state finds acceptable. While climate change may have global causes, climate-change *solutions* have local consequences that vary significantly around the country. In some states, GHG reduction policies could provide worthwhile economic benefits.⁷⁰ For example, increasing energy efficiency

State Competition as a Source Driving Climate Change Mitigation, 14 N.Y.U.L. REV. 1, 20-21 (2005).

63. See Andreen, *supra* note 9, at 289-92 (describing local impacts of climate change that give “[m]any states ... unique, local reasons to be more protective than the federal government”); NACAA, *Preserving the Rights of the States*, in DEFINING THE ROLE OF STATES AND LOCALITIES, *supra* note 25, at 11; Rabe et al., *supra* note 62, at 23-26 (describing how the perceived risk from climate change has prompted some states to act); see generally UNITED STATES GLOBAL CLIMATE CHANGE RESEARCH PROGRAM, GLOBAL CLIMATE CHANGE IMPACTS IN THE UNITED STATES (2009), available at <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf> (describing varying consequences of climate change around the nation).

64. See Andreen, *supra* note 9, at 290-92; U.S. GLOBAL CLIMATE CHANGE RESEARCH PROGRAM, *supra* note 63, at 149-52.

65. U.S. GLOBAL CLIMATE CHANGE RESEARCH PROGRAM, *supra* note 63, at 89-91.

66. *Id.* at 41-52.

67. See Andreen, *supra* note 9, at 289-90; U.S. GLOBAL CLIMATE CHANGE RESEARCH PROGRAM, *supra* note 63, at 92-94.

68. U.S. GLOBAL CLIMATE CHANGE RESEARCH PROGRAM, *supra* note 63, at 71-78.

69. See Engel & Orbach, *supra* note 12, at 120. A state could, however, set more stringent limits in the hope that other states and/or the federal government will follow. See *id.* at 129; Rabe et al., *supra* note 62, at 23.

70. California predicts that implementing its climate change law will produce net economic benefits. See generally CALIFORNIA AIR RESOURCES BOARD, CLIMATE CHANGE SCOPING PLAN: A FRAMEWORK FOR CHANGE ES-10 to ES-11; 73-79 (2008) [hereinafter SCOPING PLAN], available at http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf; cf. ANDREEN ET AL., *supra* note 9, at 8-9 (noting state interest in more stringent environmental laws to attract green business); NACAA, *Preserving the Rights of the States*, in DEFINING THE ROLE OF STATES AND LOCALITIES, *supra* note 25, at 11.

could lower consumer energy costs⁷¹ and reduce reliance on uncertain out-of-state or foreign energy supplies.⁷² States could also find that stringent targets enhance incentives to develop green technology in both the energy efficiency and the alternative energy sectors, providing new economic and job opportunities for the state.⁷³ To the extent that more stringent reduction goals lead to greater in-state emission reductions, climate-change goals could provide an indirect mechanism for reducing associated co-pollutants and improving air quality,⁷⁴ an important objective in states suffering from persistent air pollution.

Moreover, the potential costs of regulating GHG emissions could vary by state. States that do not rely on carbon-intensive energy sources, like coal, or that do not rely upon energy-intensive industries are likely to weather the transition away from fossil fuels more easily and could be more willing to adopt more stringent reduction goals. For example, California's leadership in adopting comprehensive climate-change legislation could have resulted not only from its general political leanings but also from the promising economic benefits (through green technology development) and relatively low costs (due to the state's relatively minor reliance on coal) of action. Different cost/benefit balances could thus impact states' relative willingness to adopt stringent targets.

Federal legislation would, of course, represent the democratic will—the collective agreement that could be cobbled out among the intense interests at stake. But letting states set more stringent emission reduction goals would allow citizens in those states to express political objectives that might differ from the “least common denominator” that the federal government achieves.⁷⁵ If federal legislation does not permit states to

71. See SCOPING PLAN, *supra* note 70, at 75 (predicting economic benefits as a result of increased energy efficiency).

72. See Rabe et al., *supra* note 62, at 18, 28-32.

73. ANDREEN ET AL., *supra* note 9, at 8-9 (noting state interest in more stringent environmental laws to attract green business); SCOPING PLAN, *supra* note 70, at ES-11; Engel & Orbach, *supra* note 12, at 135; Rabe et al., *supra* note 62, at 26-28 (observing agricultural opportunities created by climate policies); *id.* at 37-41 (describing green technology opportunities); NACAA, PRESERVING THE RIGHT OF STATES, *supra* note 25, at 11.

74. See NACAA, *Preserving the Rights of the States*, in DEFINING THE ROLE OF STATES AND LOCALITIES, *supra* note 25, at 10-12.

75. Professor Richard Lazarus argues that the federal lawmaking process creates extensive institutional impediments to achieving environmental protection at the federal level. See Lazarus, *supra* note 21, at 1183. See also Buzbee, *supra* note 4, at Part I(A) (observing that “hardball legislative politics” often results in political compromises that fail to achieve scientifically justified outcomes).

set more stringent caps, it will prevent states (and their citizens) from giving expression to their political views. As Professor Kirsten Engel has explained, preempting state controls would “cut[] short the lawmaking process and products of an entire level of democratic government.”⁷⁶

The “democratic will” argument raises the question of whether states should be allowed to set goals or caps that are less stringent than federal goals and caps.⁷⁷ Some states may perceive fewer benefits because they perceive less risk from climate change. Some states could also perceive fewer economic benefits if they are not favorably positioned to develop renewable energy or green technologies. Heavy reliance on carbon-intensive energy sources or energy-intensive industry could also increase the relative costs, or perceived costs, that states face.⁷⁸

Notwithstanding potential state opposition to federal standards, powerful arguments support requiring states to achieve a federal minimum and preventing them from setting a GHG reduction target less stringent than the federal target. From a democratic perspective, a federal floor could enhance, rather than repress, state democracy.⁷⁹ Without a federal minimum, states risk a “race to the bottom” that undermines state decision-making.⁸⁰ A state that would like to maintain environmental standards could fear that, if other states go below the federal standard, the state with higher environmental standards would lose its economic base to the less-regulated state. Notwithstanding the desire to protect the environment, the state could feel compelled by interstate economic competition to lower its standards. A federal floor would allow a state to achieve at least the federal minimum without risking interstate competition. Ironically, a federal floor thus has the capacity to serve, rather than frustrate, states’ democratic expression.⁸¹ While a “race to the bottom” is not inevitable, requiring states to abide by a federal minimum prevents a destructive race from emerging.

76. Engel, *supra* note 25, at 184.

77. See Buzbee, *supra* note 9, at 1581, 1586. Some states have strongly resisted climate initiatives. See Rabe et al., *supra* note 62, at 11.

78. See Rabe et al., *supra* note 62, at 11 (noting that regions “dominated by heavy manufacturing and dependent on coal power for electricity or coal mining for employment” are likely to view climate policy as a threat to the local economy).

79. States participating in a conference on the relative role of the federal government and the states stressed the importance of minimum federal requirements. NACAA, *Preserving the Rights of the States*, in *DEFINING THE ROLE OF STATES AND LOCALITIES*, *supra* note 25, at 13.

80. See Buzbee, *supra* note 9, at 1580 (noting important role of federal minimums in helping states avoid the race to the bottom); see generally Kirsten H. Engel, *State Environmental Standard-Setting: Is There a “Race” and Is It “to the Bottom”?*, 48 *HASTINGS L.J.* 271 (1997) (describing race-to-the-bottom); Esty, *supra* note 58, at 603-04; Glicksman & Levy, *supra* note 9, at 597-98; Stewart, *supra* note 58, at 1211-12.

81. See Buzbee, *supra* note 9, at 1580; Kaswan, *supra*, note 12, at 799.

Conceivably, a state could argue that its desire to set emission reduction goals below the federal minimum is not compelled by a race to the bottom but accurately reflects its constituents' balance between environmental and economic considerations.⁸² A federal minimum would continue to be justified, however, because collective action failures could lead at least some states to impose too low a target.⁸³ Climate change presents a classic tragedy of the commons.⁸⁴ States are likely to face most of the costs of controlling stationary sources but must share the benefits—at least the benefits of reducing GHGs⁸⁵—with the rest of the globe. As a corollary, since states do not experience all of the adverse consequences of their emissions, they are unlikely to take sufficient action to control emissions. Many states' individual cost/benefit analyses are likely to result in less stringent targets than are environmentally necessary because the states are unlikely to internalize the consequences imposed by their emissions upon other states and nations.⁸⁶ And although some states have found that the potential economic benefits of climate-change policies outweigh their costs, that calculus will not hold for all states. Purported economic benefits are unlikely to create a sufficient counterweight to the incentives to under-regulate. Thus, permitting states to set regulatory targets below the federal minimum could seriously undermine the nation's collective effort to reduce emissions.

82. See 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) (arguing that states set environmental policy by balancing their citizens' preferences for environmental protection and industrial development, and suggesting that competition for economic development in the form of differing environmental standards is not inherently problematic).

83. I and others have described how these collective action impediments justify floor preemption. See Buzbee, *supra* note 9, at 1580; Glicksman & Levy, *supra* note 9, at 616-17; Kaswan, *supra* note 12, at 794-96, 824. As Professor Richard Stewart has stated, "[A] state should not be entitled to invoke the principle of local self-determination against federal controls where that state generates significant spillovers which impair the corresponding ability of sister states to determine the environmental quality they shall enjoy." Stewart, *supra* note 80, at 1227.

84. See Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243 (1968) (elaborating the challenge of protecting the commons).

85. While states would share the benefits of reducing GHGs, they may be able to reap ancillary benefits: the economic benefits of promoting alternative energy and energy efficiency and the environmental benefits of reducing co-pollutants. See *supra* notes 70-74 (discussing benefits of climate-change regulation).

86. Engel & Orbach, *supra* note 12, at 120-21; Rabe et al., *supra* note 62, at 7.

III. MECHANISMS FOR ACHIEVING MORE STRINGENT CAPS

Assuming the importance of allowing states to set more stringent goals, this section addresses how states would do so. A critical question is the extent to which states could achieve their stringent reduction goals by imposing more stringent reduction requirements on sources that are within the parameters of a federal cap-and-trade program. While a state could achieve important reductions from changing building codes, reducing vehicle-miles-travelled through land-use reforms, or promoting renewable energy, states would lose a key tool in the effort to achieve a more stringent cap if they could not meet their reduction goals by setting a lower annual cap for emissions from facilities within their jurisdiction. Moreover, for a state's more stringent caps to be effective, a state must have the ability to prevent facilities in other states from using the "extra" allowances that more stringent states generate. This section outlines several potential decentralization forms through which states could achieve stringency and retire allowances. It not only provides a basis for visualizing how states could achieve stringency but also lays the groundwork for assessing the possible adverse consequences of such efforts.

A. *The Need to Retire Allowances*

A national trading program creates interdependencies that complicate a state's efforts to meet its own goals. Under traditional environmental programs, state efforts to achieve more demanding state emission targets impose their primary impact on in-state facilities.⁸⁷ In contrast, in a national trading program, the national allowance market links states together so that one state's actions could have ripple effects throughout the entire system. Given these interdependencies, a state cannot effectively implement more stringent goals without a mechanism to retire the allowances associated with the state's additional reductions.

More specifically, the challenge for a state attempting to achieve a more stringent cap by limiting sources within a national trading program is that any additional reductions achieved within the state by those sources would simply free up more allowances for out-of-state sources. If out-of-state sources use the extra allowances, that would erase the state's greater stringency.⁸⁸ For example, using a greatly oversimplified

87. Cf. Glicksman & Levy, *supra* note 9, at 604 (noting that states imposing more stringent environmental standards on in-state facilities generally do not cause negative external impacts on other states).

88. See Andreen, *supra* note 9, at 294-95; Buzbee, *supra* note 4, at Part II(C); Farber, *supra* note 14, at 918-19; Glicksman & Levy, *supra* note 9, at 645; WHITE PAPER, *supra*

hypothetical, assume that a federal cap-and-trade program set a national cap of 10,000 tons for the covered sectors and allocated 200 allowances to a state's facilities. Assume that that state imposed its own cap of 100, not 200, tons of emissions—that the state established a cap twice as stringent as the federal cap. Assume further that the state established additional requirements on in-state facilities to achieve the more stringent state cap. As a consequence of the state restrictions, in-state facilities would use 100 fewer allowances than they received through the federal program. But in a national allowance market, the allowances would then simply be available for use by facilities in the other forty-nine states. Therefore, the state's stringency would shift the location of the emissions, not reduce them. State efforts would be futile and counter-productive for the stringent state, which would experience the additional costs of reducing emissions without generating any GHG reduction benefits, in-state or out. Additionally, in-state sources would be disadvantaged relative to out-of-state sources because they would face higher emission-reduction costs while out-of-state sources would face relatively lower costs, given the greater supply of allowances afforded to out-of-state sources by the stringent state's efforts.

Unless the federal government or the stringent states retire the allowances that make up the difference between the stringent states' caps and the proportion of the federal cap associated with those states' emissions, the stringent states will be unable to achieve more stringent caps simply by imposing additional requirements on in-state facilities covered by the federal cap.⁸⁹ The issue of *how* such allowances could be retired, and the impact of that retirement on a state's sources and on the trading system as a whole, is a complicated issue that depends upon the mechanism by which the state attempts to achieve its more stringent cap, how allowances are retired, and the manner in which federal allowances are distributed. The rest of this Section addresses these questions.

note 3, at 15; Kaswan, *supra* note 12, at 831; LITZ, *supra* note 6, at 29; Meghan McGuinness & A. Denny Ellerman, *The Effects of Interactions Between Federal and State Climate Policies*, A.L.I.-A.B.A. CONTINUING LEGAL EDUC., CLEAN AIR: L., POL'Y, & PRAC. 175, 199 (2008).

89. Cf. Andreen, *supra* note 9, at 295; Farber, *supra* note 14, at 918. Both Andreen and Farber note that a state's more stringent goal could be made effective if the state could retire federal allowances in proportion to its expected reductions.

B. Potential Forms of Decentralization

In order to visualize mechanisms for achieving state stringency and to evaluate their potential impacts, it is necessary to first identify the forms in which that stringency and associated allowance retirement could be realized. Congress is likely to address the issue of state power within a federal trading program in general terms, not just by designing narrow provisions to achieve stringency. I address the following question: given differing levels of state power within a federal program, what mechanisms could the states use to achieve stringency? Below, I introduce three possible decentralization models that offer states increasing levels of control. Although the models do not contemplate the full array of options, they provide a starting point for analysis.

Mechanisms for achieving stringency and retiring allowances could be developed under all three models, and the choice of model does not significantly impact the most critical policy issues raised by state stringency.⁹⁰ Nonetheless, the choice of model impacts the mechanisms available to the states and the degree to which they must rely upon additional federal actions to reach their goals.

I. “Light” Decentralization

The light decentralization model envisions a largely national program, but federal legislation would give states the option of setting more stringent caps and establishing stationary-source standards that exceed federal goals or standards. The Clean Air Act follows this model; it specifically allows states to set both more rigorous air-quality goals and more stringent source requirements than those set by the federal government.⁹¹ As is discussed further below, states could not achieve stringency on their own under this model; federal cooperation would be necessary to retire allowances.

90. While the choice of model does not have significant policy implications for achieving stringency, the differences in power afforded the states by each model have very significant implications for other features of climate policy. The choice of a decentralization model substantially impacts state control within the trading system. This Article focuses on the issues raised by allowing states to be more stringent; it does not address these additional issues. For a discussion of the issues raised by allowing states to control trading parameters, see Kaswan, *supra* note 10. The choice of model has implications that go well beyond determining the mechanisms for achieving stringency.

91. Clean Air Act, 42 U.S.C. § 7416. The climate-change equivalent to allowing states to set more rigorous ambient air quality goals would be to allow states to set more stringent emission-reduction goals.

2. “Medium” Decentralization

Like the “light” option, the medium decentralization option would allow states to set more stringent caps and facility standards. Unlike the light option, it would give states the capacity to achieve stringency themselves by giving them the authority to impose restrictions on in-state facilities’ use of federally distributed allowances. States could, in essence, create a separate compliance program that would require in-state facilities to comply with state as well as federal requirements. States could require facilities to submit federal allowances pursuant to *state* rules. For example, and as discussed further below, states might require facilities to submit extra allowances to the state, or require them to submit a higher ratio of federal allowances per ton of emissions in order to reach more stringent state reduction goals. Proposed federal legislation at the time of this writing appears to allow this form of decentralization.⁹²

3. “Heavy” Decentralization

The third option would include all the features of light and medium decentralization; it would allow states to set more stringent goals and standards and allow them to establish state compliance requirements (using federal allowances). It would, however, move substantially beyond the previous models. The federal government would establish an emissions budget for all willing states⁹³ and then allow the states to distribute the federal allowances within their jurisdiction. Most large-

92. Section 334 of the Waxman-Markey bill would amend the Clean Air Act to allow states to “cap greenhouse gas emissions, require surrender to the State or a political subdivision thereof of emission allowances or offset credits established or issued under this Act, and require the use of such allowances or credits as a means of demonstrating compliance with requirements established by a State or political subdivision thereof.” American Clean Energy and Security Act, H.R. 2454, 111th Cong. § 334 (2009). A parallel bill introduced in the Senate contains the same language. Clean Energy Jobs and American Power Act, S. 1733, 111th Cong., § 124 (2009). See the following website for links to Senate summaries, discussion drafts, guides, and other important and helpful documents: PEWClimate.org, The American Clean Air and Security Act (Waxman-Markey Bill), <http://www.pewclimate.org/acesa> (last visited Nov. 7, 2009).

93. In the European Trading System (ETS), allowing member states to set their own targets apparently contributed to inflated emissions predictions in many states, which in turn resulted in over-allocation of allowances in the ETS. See PARKER, *supra* note 27, at 5-6. In order to avoid the risk of states predicting high emissions and therefore generating too many allowances, this Article assumes that the federal government, not the states, would set the emissions budgets for any states choosing to allocate their own allowances.

scale domestic trading programs follow this model, though perhaps by necessity rather than choice.⁹⁴ Proposed federal bills under consideration at the time of this writing do not include this option.

4. *Decentralization Options Not Considered*

This Article does not address the possibility of separate, parallel state cap-and-trade programs in which states distribute *state* allowances for in-state trading, at least for the sectors and facilities covered by the federal program.⁹⁵ This Article also assumes that regional trading programs, like the Regional Greenhouse Gas Initiative and the Western Climate Initiative, would be replaced by nationwide trading.⁹⁶ I exclude these options to create a more manageable set of state/federal dynamics and because of the assumption (potentially misplaced) that separate state or regional programs would be less politically viable than the forms of decentralization suggested in this Article.⁹⁷ Federal legislation under consideration at the time of this writing takes a middle position; it creates a moratorium on state and regional cap-and-trade programs for five years from the initiation of the federal trading program.⁹⁸

94. Since the federal Clean Air Act gives the states, rather than the federal government, control over meeting National Ambient Air Quality Standards, regional trading programs to help states achieve the standards have had to give significant authority to the states since the federal government lacks the authority to impose its own requirements. *See generally* Michigan v. EPA, 213 F.3d 663, 685-88 (D.C. Cir. 2000) (upholding the NO_x Budget Program, a multi-state criteria pollutant trading program, because it left states with considerable discretion in how to meet expected emissions reductions).

95. For an analysis of the implications of co-existing state and federal cap-and-trade programs, see generally McGuinness & Ellerman, *supra* note 88, at 198-206.

96. These regional organizations may continue to operate in order to coordinate other regional initiatives, like regional energy development and alternative energy power grids, but not to run separate trading programs. It is possible that regional entities could seek to obtain a regional budget for the included states and then follow the regional program for distributing allowances among the states. Since this would add an additional layer of administrative effort between federal and state control, it is not clear what benefits would flow from this structure. Nonetheless, the states involved in the regional programs are establishing regional parameters and organizing regional auctions that may continue to serve useful functions even in a federal program. For the purposes of this Article, however, I will assume that any decentralization would be to the state rather than the regional level.

97. Trading advocates generally prefer large trading markets in order to maximize the number of sources and opportunities for low-cost reductions, to send widespread market signals for technology innovation, and to reduce competitive pressures between jurisdictions. *See* LITZ, *supra* note 6, at 27. As is evidenced by the movement toward regional trading blocks, states are seeking the opportunity to trade beyond state boundaries. It is therefore unlikely that states would want to establish separate statewide cap-and-trade programs that allowed only in-state trading. Similarly, once states have the benefit of national trading, they may perceive less need for regional trading.

98. American Clean Energy and Security Act, H.R. 2454, 111th Cong. § 335 (2009) (establishing Title VIII, section 861).

*C. Achieving State Stringency Under the Light
Decentralization Model*

Under the light decentralization model, which mirrors the savings provisions in traditional pollutant control statutes by allowing states to set more stringent goals and facility requirements, states could set more stringent long-term goals and emissions caps for in-state facilities. Since the light decentralization model would not allow states to control federal allowances, state stringency could be effective under this model only if federal legislation created additional mechanisms for retiring the extra allowances. States could achieve stringency in two ways: (1) by relying exclusively on federal or state allowance retirement or (2) by imposing state regulatory emission reduction requirements on in-state facilities and having the federal government assist them in retiring the extra allowances.

*1. Achieving State Stringency Solely Through
Allowance Retirement*

Under the light decentralization model, a state could establish more stringent goals. If it wanted to achieve those goals by reducing the supply of allowances to its facilities, however, it would have to rely on the federal government. A critical factor for determining how to retire the extra allowances is whether the federal government freely distributes or instead auctions allowances. If the federal government freely distributed allowances, then federal legislation could require the relevant federal agency to assess the state targets, determine how they relate to the emissions assumed for the facilities in that state, and distribute proportionately fewer allowances to facilities within the more stringent state. The federal government could then retire the leftover allowances associated with that state's facilities. For example, if the state goal were twice as stringent as the federal goal, then the federal government could distribute half the expected allocation to the state's facilities and retire the remainder.

Different mechanisms would be needed if the federal government auctioned allowances. The extra allowances associated with a state's more stringent goal must be withheld from the national allowance pool

for the state's more stringent goal to be effective.⁹⁹ The federal government could reduce the number of allowances to be auctioned in proportion to the more stringent state's emission reduction goals and retire them, thereby reducing the national allowance supply. Alternatively, as was proposed in federal legislation in 2008,¹⁰⁰ the federal government could give states the extra federal allowances associated with their more stringent target and permit the states to retire them. Like direct federal retirement of the allowances prior to sale, permitting states to retire allowances from the national market would reduce the national allowance supply.

2. *Achieving State Stringency Through State Regulatory Requirements Coupled with Allowance Retirement*

Alternatively, under the light decentralization model, states themselves could achieve their more stringent goals by imposing direct GHG emission reduction requirements, such as efficiency standards or production process requirements, on covered facilities.¹⁰¹ If regulatory

99. Under the light decentralization model, the state does not have any control over the number of allowances their facilities buy from or submit to the federal government. The allowances would therefore have to be taken from the national allowance pool.

100. See Lieberman-Warner Climate Security Act of 2007, S. 2191, 110th Cong. § 3302-03 (2008), available at <http://www.govtrack.us/data/us/bills.text/110/s/s2191rs.pdf>; LITZ, *supra* note 6, at 31 (comparing options). This option is distinct from the heavy decentralization model. In the heavy decentralization model, the states would assume full responsibility for allowance allocation within their states. Under this proposal, in contrast, the federal government would remain primarily responsible for allowance allocation and only a small percentage of the allowances would be distributed to the states for revenue—or stringency—purposes.

101. Most of the existing climate policies propose to control industrial sources through cap-and-trade programs rather than regulatory approaches. Proposed federal legislation creates a cap-and-trade program for most stationary-source facilities and creates a regulatory process only for sources that do not fall within the trading program. See generally American Clean Energy and Security Act, H.R. 2454, 111th Cong. §§ 301-360 (2009) (establishing cap-and-trade program for most sources). *Id.* § 331 (establishing Title VIII, section 811, requiring regulatory GHG standards for uncapped stationary sources). The Senate discussion draft creates a cap-and-trade program but does not eliminate EPA's authority to establish regulatory standards. Clean Energy Jobs and American Power Act, S. 1733, 111th Cong. § 121 (establishing rules for greenhouse gas standards that only narrowly preempt source controls under the CAA). The Regional Greenhouse Gas Initiative establishes a trading program, not a regulatory approach. See generally Regional Greenhouse Gas Initiative, RGGI Fact Sheet, http://www.rggi.org/docs/RGGI_Executive%20Summary_4.22.09.pdf (Apr. 22, 2009). The Western Climate Initiative and the Midwestern Greenhouse Gas Accord contemplate trading programs. Western Climate Change Initiative, *Designing the Program*, <http://www.westernclimateinitiative.org/designing-the-program> (last visited Sept. 27, 2009) (describing cap-and-trade as the centerpiece of this regional GHG reduction strategy); MIDWESTERN GOVERNORS ASSOCIATION, MIDWESTERN GREENHOUSE GAS ACCORD 3-4 (2007), available at <http://www.midwesternaccord.org/midwesterngreenhousegasreductionaccord.pdf>

requirements were used to achieve stringency, then the regulated facilities would generate fewer emissions than presumed under the federal system.

While state regulations would reduce in-state emissions, they would not achieve real stringency unless the extra allowances were retired. The light decentralization model allows the states to impose regulations to reduce in-state emissions but does not give them a mechanism for retiring extra allowances. The federal government would have to play the same role as it would if the state did not regulate. If the federal government freely distributed allowances, then the federal government would have to withhold and retire the extra allowances from the regulated facilities in order to keep the facilities from selling their extra allowances in the national allowance market.¹⁰² If the federal trading program instead auctioned allowances, then the federal government would have to withhold the additional reductions achieved by state regulation from the national allowance pool and either retire them or give the extra allowances to the state and let the state retire them. As is discussed further below, while the mechanisms for retiring the allowances would be the same whether a state achieved reductions through regulation or purely through allowance retirement, the impacts on the national allowance market would differ considerably.¹⁰³

Thus, under the light decentralization model, states could set more stringent goals and annual caps, but federal legislation must create a

(describing Midwestern states' intent to create a GHG trading program). Except for certain controls for fugitive emissions and required energy efficiency audits, California intends to rely primarily upon a cap-and-trade program to control industrial sources. *See generally* SCOPING PLAN, *supra* note 70, at 54-56. Nonetheless, if a cap-and-trade program proves ineffectual at prompting needed changes, it is conceivable that states would attempt to achieve greater results through direct regulation. In Southern California's RECLAIM program, for example, the local trading program's failure to induce utilities to adopt pollution control technologies led the air district to impose direct regulatory requirements. *See* McAllister, *Beyond Playing "Banker": The Role of the Regulatory Agency in Emissions Trading*, 59 ADMIN. L. REV. 269, 290 (2007).

102. *See* McGuinness & Ellerman, *supra* note 88, at 202.

103. If a state achieves its stringency through regulation, then most of the reductions will occur within the more stringent state. As a consequence, retiring the allowances will have little impact on the national allowance market because it simply accounts for additional reductions that have already occurred. If allowances are retired without in-state regulation, then that reduces the supply of national allowances with no assurance that the reductions will occur in the state with the more stringent target, externalizing the impact of the state's more stringent target. These consequences are discussed further below. *See infra* Part IV(B).

mechanism for retiring the block of allowances associated with the states' more stringent goals. In order for states themselves to have the power to retire the extra allowances associated with a more stringent state cap, they would have to have control over their facilities' use of federal allowances, an option available only under the medium and heavy decentralization models.¹⁰⁴

D. Achieving State Stringency Under the Medium Decentralization Model

Under the medium decentralization model, a state would have greater flexibility in achieving stringency and retiring allowances. As in the light decentralization model, it could adopt regulatory restrictions to achieve stringency, but it could exercise control over allowance retirement rather than relying on federal action. In addition, the medium decentralization model would give a state the option of using market mechanisms, rather than regulatory standards, to achieve greater stringency.

1. Achieving Stringency by Imposing Regulatory Emissions Restrictions and Retiring Allowances

Under a medium decentralization model, a state could continue to achieve its greater stringency through regulatory measures, but it obtains additional options for retiring allowances. As with the light decentralization model, the starting assumption is that a state would impose regulatory restrictions that reduce in-state facility emissions below the emissions levels presumed by the federal government in its allocation process. If the federal government distributes allowances for free, the regulated facilities would receive too many allowances. Letting the facilities sell the extra allowances would undermine the state's effort to achieve stringency. Under a medium decentralization model, a state could require the regulated facilities to submit the excess allowances to the state for retirement rather than having to rely on the federal government to hold back the extra allowances or having the federal government give the extra allowances to the state to retire. Instead of requiring the facilities to submit the extra allowances to the state for retirement, the

104. See Farber, *supra* note 14, at 918 (observing that states are likely to want the power to control trading in order to effectuate real emission reductions); NACAA, *Preserving the Rights of the States*, in *DEFINING THE ROLE OF STATES AND LOCALITIES*, *supra* note 25, at 13 (stating that federal legislation could give states the power to retire allowances from sources within their jurisdiction).

same result could be achieved by prohibiting facilities from selling the extra allowances.¹⁰⁵

If the federal government auctioned allowances, however, then the state regulations would lead regulated facilities to buy fewer allowances and the “extra” allowances would remain in the national allowance supply. To retire the extra allowances, the state could require in-state facilities to submit federal allowances to the state at a greater than one-to-one ratio, a ratio that is proportionate to the program’s greater stringency. For example, facilities could be required to reduce emissions and then submit, say, 1.25 allowances, as opposed to one allowance for every ton of emissions, which would cause facilities to buy more allowances on the market than they otherwise would have.¹⁰⁶ Under this model, a state would achieve greater stringency through regulation but retire allowances by controlling its facilities’ use of federal allowances.

2. *Achieving Stringency Through Market Mechanisms*

Unlike the light decentralization model, the medium decentralization model gives states the option of using pure market-based allowance submission requirements, without regulation, to achieve more stringent goals. A state could achieve a more stringent annual cap by requiring in-state facilities to submit to the state a higher ratio of federal allowances for each ton of emissions.¹⁰⁷ That approach would lead to greater

105. Federal legislation would have to make the state power to impose such a restriction explicit in order to avoid a preemption or Commerce Clause challenge. When New York State attempted to prohibit in-state facilities from selling allowances to upwind states, the courts found that federal law preempted and prohibited the state’s limitations. *See Clean Air Mkts. Group v. Pataki*, 338 F.3d 82, 89 (2d Cir. 2003). Explicit authorization of such state restrictions in federal legislation would help protect such state limitations from similar challenges. *See Buzbee, supra* note 4, at Part III(C) (discussing the risk that courts could conclude that federal climate legislation preempts state controls).

106. Under this approach, the facilities would bear the cost of retiring the extra allowances. If a state did not want its industry to bear the cost of retiring the allowances, then it might prefer to have the federal government withhold allowances from the national allowance pool in proportion to the in-state regulatory reductions, an option that does not require a state to use the authority given it under the medium decentralization model. The issue of who bears the cost of retiring allowances is likely to be a key question in determining the appropriate mechanism. This Article focuses on federalism concerns; the relative burden of retiring allowances on government and industry is beyond the scope of this Article.

107. *Cf. McGuinness & Ellerman, supra* note 88, at 205 (noting that states could require in-state source to submit more federal allowances than normally required). If

stringency because each allowance would represent more reductions than presumed under the federal program. This approach would simultaneously and automatically retire the “extra” allowances from the national market, since the facilities would be required to purchase and submit the extra allowances associated with the more stringent goal.¹⁰⁸ A state could use this mechanism whether the government distributed allowances for free or by auction.¹⁰⁹ Since the states that are actively addressing climate change have demonstrated a preference for addressing stationary sources through market mechanisms rather than direct regulatory requirements,¹¹⁰ this mechanism is likely to be attractive to the states.

E. Achieving State Stringency Under the Heavy Decentralization Model

If the federal government gives states the option of distributing federal allowances, achieving a more stringent state program would be more straightforward than under the light and medium decentralization models. The federal government would determine the states’ emissions budgets and give the states the allowances for in-state distribution.¹¹¹ The states could then retire the allowances associated with their more stringent goal before distributing or auctioning the allowances to in-state facilities. The states could choose whether or not to couple their allowance retirement with direct regulations to achieve stringency.

federal allowances are auctioned rather than distributed for free, these facilities will face relatively high costs.

108. See WHITE PAPER, *supra* note 3, at 15 n.52 (noting that federal legislation could create a mechanism for states to retire allowances by “authorizing States to require entities they regulate to turn in Federal allowance as part of the State program”).

109. While this option would operate in the same way regardless of whether the federal government distributed allowances for free or auctioned, the financial implications for affected facilities would differ considerably.

110. See *supra* note 101 and accompanying text (detailing state preference for cap-and-trade).

111. See WHITE PAPER, *supra* note 3, at 15 n.52 (observing that federal legislation could create a mechanism for retiring allowances by “allocating Federal allowances to States and authorizing them to retire allowances”); LITZ, *supra* note 6, at 29 (describing same scenario); NACAA, *Preserving the Rights of the States*, in DEFINING THE ROLE OF STATES AND LOCALITIES, *supra* note 25, at 13. An EPA cap-and-trade program to control mercury emissions, since invalidated by the courts, followed the heavy decentralization model and allowed states to withhold a portion of the federally distributed budget in order to meet a more stringent reduction goal. See McGuinness & Ellerman, *supra* note 88, at 183.

F. Conclusion

The mechanisms states could use to achieve stringency and retire allowances differ considerably depending upon the power they are given within a federal trading program. States could set their own targets, and impose their own direct emission reduction regulations, under all three of the decentralization models discussed above. But states that prefer market mechanisms to regulation could employ market approaches only under the medium and heavy decentralization models.¹¹² Moreover, states can control the allowance retirement process only under the medium and heavy decentralization models; otherwise they must rely upon federal retirement of the extra allowances.

IV. THE POTENTIAL DRAWBACKS TO ALLOWING GREATER
STATE STRINGENCY

The foregoing analysis provides a basis for assessing the potential adverse consequences of allowing states to implement more stringent emission reduction targets. The most significant potential drawback is the impact on the national allowance market. Because a national trading program links the states, some of the mechanisms described above could impact allowance prices in states that have not chosen to adopt more stringent standards. Other drawbacks are ones that have long been associated with the nation's cooperative federalist environmental statutes: the potentially higher cost of goods and energy exported by the more stringent states, the lack of national uniformity generated by state variations, and the administrative inefficiency of overlapping state and federal jurisdiction.

112. As discussed above, under the light decentralization model the states could use market mechanisms in coordination with the federal government: the states could set their targets and then have the federal government retire the allowances from the national allowance supply, indirectly using market mechanisms. *See supra* notes 99 to 100 (discussing pure allowance retirement option under the light decentralization model). But the light decentralization option would not permit the states themselves to impose direct market measures.

*A. Impact on the National Allowance Market if
Allowances are not Retired*

State efforts to achieve stringency will, by definition, impact the flow of allowances and, therefore, impact the national allowance market. If federal legislation does not create mechanisms to retire the excess federal allowances associated with more stringent state programs, not only will state efforts to be more stringent fail,¹¹³ but the extra allowances are likely to depress national allowance prices.¹¹⁴ Cheaper is not always better. If allowance prices are too low, then they will not create incentives for industries to adopt existing measures to reduce emissions.¹¹⁵ Low allowance prices would also fail to create a market signal to stimulate technological innovation, since low allowance prices will induce facilities to buy allowances rather than new technology. Technological innovators are unlikely to invest in research and development if low allowance prices will preclude a future market for their products.¹¹⁶ In addition, low allowance prices would have little impact on energy prices. As a consequence, they would fail to create market signals for lowering consumer energy demand through energy efficiency and alternative energy investments.¹¹⁷

113. See *supra* note 88 and accompanying text (discussing how the failure to retire allowances would erase a state's effort to achieve greater stringency).

114. See Glicksman & Levy, *supra* note 9, at 645-46 (noting the need to retire the allowances associated with more stringent state caps in order to reduce emissions and avoid a flood of allowances that could depress allowance values in other states); McGuinness & Ellerman, *supra* note 88, at 199 (observing that more stringent state standards could lead to less demand for federal allowances and lower federal allowance prices); *id.* at 205 (observing that allowing states to retire federal allowances would prevent states' more stringent programs from depressing national allowance prices). A federal price floor that sets a minimum price for allowances could also address the risk of depressed prices.

115. See McAllister, *supra* note 15, at 419.

116. See David E. Adelman & Kirsten H. Engel, *Reorienting State Climate Change Policies to Induce Technological Change*, 50 *AZ. L. REV.* 835, 850, 853 (2008) (observing that there is some correlation between increases in energy prices and technology innovation); McAllister, *supra* note 15, at 422. While low allowance prices are likely to dampen technology innovation incentives, high allowance prices do not guarantee innovation given the complex range of factors that influence technology innovation decisions. See Adelman & Engel, *supra* at 850, 853-55.

117. See MARILYN A. BROWN ET AL., BROOKINGS INST., *SHRINKING THE CARBON FOOTPRINT OF METROPOLITAN AMERICA* 26 (2008) (noting that in the past, energy prices lead to less oil consumption). As with innovation incentives, low energy prices dampen incentives for efficiency, but high allowance prices do not guarantee efficiency investments due to the complex factors that determine efficiency investments. See generally Alice Kaswan, *Climate Change, Consumption, and Cities*, 36 *FORDHAM URB. L.J.* 253, 276-80 (2009) (describing why market signals are unlikely to trigger sufficient efficiency investments).

B. Impact on the National Allowance Market if Allowances are Retired

While retiring allowances is essential to avoid depressing national allowance prices, some methods of allowance retirement could cause national allowance prices to increase. This section explores the impacts of the mechanisms discussed above. The choice of decentralization model—whether light, medium, or heavy—is critical to determining the state’s range of options and its autonomy in exercising them, but the choice of model is not the dominant issue in determining the impact on the national allowance market. As is discussed further below, the most critical issue is whether the state uses regulation or market mechanisms to achieve its more stringent goal. The discussion below analyzes the range of potential impacts, beginning with the options having the least impact.

1. Little Impact: Stringency Achieved by Regulation

If a state uses regulation to achieve a more stringent annual cap, and the state or federal government retires the associated reductions, there should be little effect on the national allowance market. At least in theory, under a regulatory approach, all of the extra reductions would be made in-state. The retired allowances represent allowances that the in-state facilities would have been entitled to (or been expected to purchase) but for the additional regulations. Retiring the allowances associated with the stringent state’s extra reductions does not impact the pool of allowances presumptively associated with emissions from facilities in other states. Assuming that the amount retired matches the extra amount reduced, there should be little impact on the supply of allowances to facilities in the rest of the nation and, as a consequence, little impact on national allowance prices. The decentralization model and mode of allowance retirement would not affect the outcome, since in all cases the retired allowances would be associated with in-state emission reductions.

However, two factors could lead to some impact on the national allowance market even if regulations lead to in-state emission reductions. The first is leakage. It is possible that state regulations would reduce emissions in-state but, as a consequence, increase out-of-

state emissions.¹¹⁸ Emissions that appeared to have been reduced would, in fact, have simply shifted. For example, a refinery might meet a state's regulatory requirements by lowering or stopping production, and out-of-state refineries might increase supply to make up for the reductions in the more stringent state. Although in-state refinery emissions would decrease, out-of-state refinery emissions would increase. Retiring the allowances associated with the in-state emission reductions would remove allowances on the premise that the associated emissions were gone, thus reducing the allowance supply available to cover the nation's actual emissions.

The second factor that could affect whether regulations, coupled with allowance retirement, impact the national allowance market is whether the more stringent state has a disproportionate number of either high- or low-cost reducers. If the more stringent state contains many low-cost reducers who are required to reduce by regulation and whose associated allowances are retired, then higher-cost reducers in other states will lose the opportunity to purchase allowances that low-cost reducers in the more stringent state would otherwise have been allowed to generate for profit. National allowance prices could go up if the market is deprived of these low-cost opportunities.

Conversely, if the more stringent state has high-cost reducers that are nonetheless required to reduce emissions pursuant to state regulation, then the national demand for allowances could be reduced, since these facilities, which might otherwise have purchased allowances, are now being required to reduce. That could slightly lower national allowance prices.

2. Medium Impact: Stringency Achieved by Market Mechanisms Imposed on a Stringent State's Facilities

If the federal government or the state uses market mechanisms to achieve greater stringency and retire allowances, then most of the impact would be felt by in-state facilities but there could be some external impact. As described above, market options include having the federal government or the state distribute fewer allowances to facilities in the more stringent state or having a state require its facilities to submit more federal allowances per unit of emissions. In order to avoid the cost of purchasing allowances, facilities that receive fewer allowances or are

118. See generally Jonathan B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. PA. L. REV. 1961 (2007) (providing detailed analysis of leakage risk); Adelman & Engel, *supra* note 116, at 843-45 (describing leakage risk and studies assessing its likelihood).

required to submit extra allowances will likely reduce emissions by more than they would have otherwise. To the extent they reduce emissions, the impact of the state's more stringent goal will primarily remain in-state. If leakage occurs, however, some of the apparent reductions in response to the state's market incentives could lead to increased emissions elsewhere, pushing up the demand for allowances.¹¹⁹

Rather than reducing emissions, facilities subject to market mechanisms to achieve greater stringency could choose to purchase more allowances. Such increased demand for allowances would increase allowance prices for facilities nationwide.¹²⁰ In-state facilities would still bear the brunt of the state's stringency because they would have to either reduce emissions more or buy more allowances, but this option imposes a greater impact on the market than having a state use direct regulations to reduce in-state emissions.

A critical factor in determining the extent of the external impact is the proportion of high-cost emission reducers in the state. High-cost emission reducers are more likely to buy allowances than reduce emissions. The greater the number of high-cost reducers, the more the state restrictions will lead to allowance purchases rather than in-state reductions, and the relatively greater the impact on the national allowance market. A state's low-cost emissions reducers are more likely to reduce emissions rather than buy allowances, so the more low-cost reducers in a state, the less the impact on the national allowance market. Ultimately, however, it is difficult to predict the extent to which the more stringent state's requirements would lead to in-state reductions versus increased allowance purchases. Hence, it is difficult to predict the extent of the out-of-state impact.

3. High Impact: Allowances Retired Prior to Auction without State Regulation

The options with the greatest external impact are those in which the federal government or the state retire allowances before they are sold in a national auction, unaccompanied by state regulation that would insure

119. *Cf. supra* note 118 and accompanying text (describing how state regulations could lead to leakage that results in a shift rather than a reduction in emissions).

120. *See* McGuinness & Ellerman, *supra* note 88, at 205 (observing that allowing states to retire federal allowances “[w]ould . . . effectively reduce the federal cap thereby raising the allowance price and costs to all other states”).

that the reductions are made by facilities in the more stringent state. Retiring allowances prior to auction would reduce the nation's allowance supply and increase allowance prices throughout the nation. The impact on out-of-state facilities would be as great as the impact on in-state facilities.

The presence or absence of state regulation plays a critical role in determining whether retiring allowances prior to auction will impact the national allowance market. Retiring allowances prior to auction results in a high impact only if the state is not achieving its more stringent goal through regulation, since retiring allowances prior to a federal auction does not impose any particular obligations on the facilities in the more stringent state and simply lessens the supply for facilities in all states. If, however, the more stringent state has imposed direct regulations that require in-state facilities to make extra reductions in order to meet the more stringent state's goals, then retiring allowances prior to auction simply removes the excess allowances, no longer needed in the more stringent state, from the market, without affecting the pool of allowances available to facilities in all the other states.

4. Impacts Organized by Decentralization Model

State options for achieving stringency are likely to be one consideration in a broader debate about state powers within a federal cap-and-trade program. This section therefore organizes the options for—and national allowance market impacts of—achieving greater stringency that are available under the light, medium, and heavy decentralization models. The analysis is intended to help policymakers determine the potential implications of achieving stringency under each of the decentralization models. This section does not present new information; it simply organizes the analysis presented above by decentralization model.

a. Light Decentralization Model

Table 1 summarizes the national allowance market impacts that could result from the retirement mechanisms available under the light decentralization model. Under the light decentralization model, the federal government could facilitate the state's target by distributing fewer allowances to facilities in the more stringent state and ensuring that the extra allowances are retired. As noted above, that approach would have a "medium" impact, since the in-state facilities would likely respond to receiving fewer allowances by both reducing emissions and buying allowances in the national allowance market, creating somewhat higher allowance prices. In an auction scenario, the federal government

could facilitate a state's more stringent goal by withholding allowances from the national allowance pool and retiring them itself or by giving them to the state to retire. That approach would have a high impact since the entire nation would experience the decrease in allowances, not just the facilities in the more stringent state.

TABLE 1
LIGHT DECENTRALIZATION MODEL: RETIREMENT MECHANISM
IMPACTS ON NATIONAL ALLOWANCE MARKET

STATE REGULATION TO ACHIEVE STRINGENCY?	FEDERAL ALLOWANCE ALLOCATION METHOD	RETIREMENT MECHANISM	IMPACT ON NATIONAL ALLOWANCE MARKET
No Regulation	Free Distribution	Feds distribute fewer allowances to stringent state's facilities	Medium
No Regulation	Auction	Feds retire allowances before auction	High
No Regulation	Auction	Feds give states allowances and states retire prior to sale	High
Regulation	Free Distribution	Feds distribute fewer allowances to stringent state's facilities	Low
Regulation	Auction	Feds retire allowances before auction	Low
Regulation	Auction	Feds give states allowances and states retire prior to auction	Low

In contrast, if a state were to achieve stringency through regulations requiring actual reductions from in-state facilities and the extra allowances associated with the additional reductions were retired, there should be little impact on the national allowance supply (and prices) since the regulated facilities would neither demand nor sell any extra allowances.

b. Medium Decentralization Model

Table 2 summarizes the national allowance market impacts that could result from the retirement mechanisms available under the medium decentralization model. Under the medium decentralization model, states could impose their own compliance processes for federal allowances. If a state imposed regulations that required facilities to reduce emissions and then required facilities to submit the extra allowances they receive to the state, there should again be little impact on the availability of national allowances, since the extra reductions and the associated allowances are all being accounted for in-state. The same result would obtain if the federal government auctioned allowances and the state captured the extra allowances by requiring the regulated facilities to submit a higher ratio of allowances per ton of emissions.

In contrast, if the state did not set regulatory requirements but, instead, required facilities to submit more allowances per ton of emissions, then the state's approach to achieving stringency could have a medium impact on the market. While in-state facilities would likely reduce emissions to some extent, the enhanced allowance submission requirements are likely to lead some facilities to purchase more allowances on the national market, reducing supply and increasing prices.

TABLE 2
MEDIUM DECENTRALIZATION MODEL: RETIREMENT MECHANISM
IMPACTS ON NATIONAL ALLOWANCE MARKET

STATE REGULATION TO ACHIEVE STRINGENCY?	FEDERAL ALLOWANCE ALLOCATION METHOD	RETIREMENT MECHANISM	IMPACT ON NATIONAL ALLOWANCE MARKET
Regulation	Free Distribution	State requires in-state facilities to submit extra allowances and retires them	Low
Regulation	Auction	State requires in-state facilities to submit higher ratio of allowances to emissions	Low
No Regulation	Free Distribution	State requires in-state facilities to submit extra allowances to the state	Medium
No Regulation	Auction	State requires in-state facilities to submit higher ratio of allowances to emissions	Medium

c. Heavy Decentralization Model

Table 3 summarizes the national allowance market impacts that could result from the retirement mechanisms available under the heavy decentralization model. Under the heavy decentralization model, in which the federal government would give states an emissions budget for them to distribute, a state's use of regulatory versus market measures to achieve stringency is, again, key. If the state regulates, and withholds allowances in proportion to the regulation, then the state's efforts should have little impact on the national allowance market. If the state does not regulate, however, and simply distributes fewer allowances than are in the emissions budget it receives from the federal government, then there could be a medium impact on the national allowance market because in-

state facilities might make up some of the difference by purchasing additional allowances from the national market.

TABLE 3
HEAVY DECENTRALIZATION MODEL: RETIREMENT MECHANISM
IMPACTS ON NATIONAL ALLOWANCE MARKET

STATE REGULATION TO ACHIEVE STRINGENCY?	FEDERAL ALLOWANCE ALLOCATION METHOD	RETIREMENT MECHANISM	IMPACT ON NATIONAL ALLOWANCE MARKET
Regulation	N/A	State withholds extra allowances prior to distributing or auctioning them	Low
No Regulation	N/A	State withholds extra allowances prior to distributing or auctioning them	Medium

B. Other External Impacts: Higher Costs Associated with Greater Stringency

While impacts on the national allowance market are the most novel and significant potential consequence of allowing states to set more stringent targets, allowance market impacts are not the only potential external impact of unilateral state action. Most of the mechanisms for achieving stringency described above would impose their primary impact on in-state facilities. Even so, higher in-state costs can have indirect impacts on consumers in other states.¹²¹ For example, if a stringent state imposes more demanding requirements on electricity-generating units that export electricity out-of-state, out-of-state electricity prices could rise. In addition, more stringent requirements on manufacturers could impose higher costs on out-of-state purchasers.

121. See Andreen, *supra* note 9, at 294.

C. Uniformity

A common industry concern with state autonomy is its potential impact on national uniformity.¹²² Differing state caps are likely to lead to higher costs and, potentially, differing requirements for facilities in the more stringent state in comparison with facilities elsewhere in the nation. The lack of uniformity raises two primary concerns. The first is administrative complexity. Different requirements in different states could complicate compliance efforts for national and multinational companies.¹²³ The second, and more significant, concern is equity—the creation of an unequal playing field. Under most of the scenarios described above, facilities in more stringent states are likely to incur higher costs because they would have to pay for either additional emission reductions or additional allowances (with their flexibility to choose between these options dependent upon the state’s chosen mechanism for achieving a more stringent cap).¹²⁴ That could place facilities in stringent states at a competitive disadvantage in national markets.¹²⁵

Another potential consequence of non-uniform regulation is that it could result in “leakage;” it could prompt facilities or production in states with more stringent caps to shift to less heavily regulated states.¹²⁶ Leakage would negate a state’s effort to achieve stringency because those efforts would simply shift the location of the emissions to a less-regulated state. While the more stringent state might meet its own more stringent target, that state’s regulation would not have contributed to a net drop in emissions.

122. See WHITE PAPER, *supra* note 3, at 2 (observing that “[i]ndustry is often interested in Federal legislation to avoid or replace a patchwork of State regulations); Andreen, *supra* note 9, at 292-93 (describing argument); DeShazo & Freeman, *supra* note 3, at 1530-31.

123. See Andreen, *supra* note 9, at 292-93 (describing argument).

124. If a state required reductions through regulatory measures, facilities would be required to incur reduction costs. If a state imposed market-based requirements, facilities could choose whether to meet them through greater reductions or purchasing additional allowances.

125. See LITZ, *supra* note 6, at 12 (describing industry concern that state climate change policy could create an uneven playing field).

126. See generally Wiener, *supra* note 118 (providing detailed analysis of leakage risks); Adelman & Engel, *supra* note 116, at 843-45 (describing leakage risk and studies assessing its likelihood).

D. Administrative Efficiency

Governmental administrative efficiency concerns also arise from some of the options under which a state could achieve a more stringent cap.¹²⁷ If a state establishes regulatory requirements, then facilities would have to add greenhouse gas controls into their state permits in addition to complying with the federal trading program. If a state exercises powers under the medium decentralization model and requires facilities to submit federal allowances to the state, then both state and federal administrative resources will be implicated. Unless federal legislation delegates compliance responsibility to the states, facilities would have to demonstrate compliance at both the state and federal levels. In addition, unless the federal legislation delegates monitoring and enforcement responsibilities to the states, duplicative and inefficient monitoring, inspection, and enforcement proceedings could occur.

V. BALANCING THE BENEFITS AND THE DRAWBACKS

Allowing states to be more stringent requires policymakers to consider tradeoffs. This section recapitulates the benefits of allowing states to be more stringent and then assesses both the likelihood that allowing states to be more stringent would result in adverse impacts and the relative severity of the impacts should they occur.

A. The Compelling Justifications for Allowing States to be More Stringent

As discussed at length above, political realities create a risk that federal legislation and implementation will fail to establish long-term reduction goals or annual caps that are sufficiently stringent.¹²⁸ The overall goals may fail to sufficiently avert the risk of climate change, the pace may be too slow, and political and economic pressures may lead to overly generous annual caps. Even if initial goals and caps appear appropriate at the outset, scientific advances in climate science and alternative energy may render past goals inappropriate. While there is no guarantee that states will fill the gap, federal legislation should allow state regulation to create regulatory redundancy to reduce the risk of one monolithic federal failure.

Furthermore, most federal pollution control laws have long respected the nation's commitment to federalism and permitted state citizens to set

127. See WHITE PAPER, *supra* note 3, at 11 (noting that “[m]ore stringent State programs might . . . increase the governmental . . . resources needed to achieve the necessary reductions”).

128. See discussion *supra* Part II(B).

more stringent environmental goals and standards. Many states have GHG emissions as large or larger than entire nations.¹²⁹ Precluding them from achieving more stringent GHG emission reduction goals would significantly interfere with their democratic prerogatives and is inappropriate absent a sufficiently compelling justification. The issue, then, is whether the potential adverse impacts of state efforts provide a sufficiently compelling justification for preventing states from being more stringent.

*B. Addressing the Potential Adverse Impacts of
Allowing State Stringency*

In determining the potential adverse impacts of allowing states to be more stringent, two factors are worth considering: (1) the likelihood that states would impose more stringent caps, which affects the extent of the projected adverse impacts and (2) if states do set more stringent caps, the significance of the impacts.

*1. States are Unlikely to be More Stringent Unless Greater
Stringency is Necessary*

As Professor Flatt argues in this Symposium issue, if the federal program is sufficiently stringent, then states are unlikely to take more aggressive action.¹³⁰ More stringent caps could impose an economic disadvantage on a state's existing utilities and industries.¹³¹ States are unlikely to impose such impacts unless the state believes that the alternative—the federal system—is unacceptable.

It is true, notwithstanding the potential economic costs of climate policies, that states have been and may continue to enact aggressive climate policies in order to reap their economic benefits. But those benefits would also flow from a federal cap, so states are unlikely to enact more stringent state targets unless the federal government's cap is insufficient to stimulate the hoped-for economic benefits.¹³² For

129. See PEW CENTER ON GLOBAL CLIMATE CHANGE, CLIMATE CHANGE 101: STATE ACTION 1 (2009), <http://www.pewclimate.org/docUploads/Climate101-State-Jan09.pdf>.

130. See generally Flatt, *supra* note 3.

131. See Flatt, *supra* note 3, at Part VI.

132. See *supra* notes 70-73 and accompanying text (discussing potential economic benefits of climate change policies). States may well enact climate policies like energy efficiency or renewable energy to garner in-state benefits like co-pollutant controls, lower

example, California anticipates substantial cost savings from energy efficiency.¹³³ These benefits would flow from a stringent federal cap as well as from state action; if the federal cap is sufficient, there is no need for additional state action. Similarly, states that hope to lead the nation in green technology are unlikely to deem greater in-state stringency necessary unless the federal cap is insufficiently stringent to prompt green technology investment.

More stringent state caps do not offer the type of exclusive, concentrated benefits to a state that would prompt greater state stringency notwithstanding a sufficient federal cap.¹³⁴ Thus, the primary situation in which states are likely to impose more stringent goals is when the federal program proves fundamentally weak or ineffective—precisely the situation in which such state control is most justified.

Implementation of the Clean Air Act provides a useful example of state reluctance to set more stringent goals unless the federal approach is palpably inadequate. Under the Clean Air Act, states retain the authority to set more stringent ambient air quality goals and facility standards than the minimums required by federal legislation.¹³⁵ In general, the states have not exercised that discretion with regard to ambient air quality goals.¹³⁶ However, when the federal government proposed a trading system to control mercury emissions from power plants that would not be as protective as the imposition of regulatory controls, many states exercised their prerogative and adopted their own approach—more stringent direct regulation of mercury sources.¹³⁷ As Professor Flatt has documented, similar state regulation emerged for other hazardous air

energy costs, or green job promotion. The policies could result in lowering in-state emissions more than projected by the federal program. The fact that a state might impose measures that reduce its emissions more than projected by the federal program does not necessarily mean that the state will choose to enact a more stringent target. States seeking these economic benefits may not be concerned about the availability of extra allowances in other states, as long as they can accomplish their internal objectives. In other words, the incentives for state climate action do not necessarily translate into an incentive for state stringency.

133. See *supra* note 71.

134. Cf. Glicksman & Levy, *supra* note 9, at 639-40 (observing that “aggressive regulation of GHGs by states and localities cannot produce concentrated environmental amenities” and suggesting that states are therefore unlikely to overregulate). In contrast, certain types of state regulation do pose some risk that states would regulate to enhance in-state industries. For example, there is evidence that states have imposed fuels requirements to enhance in-state fuel refiners. See Rabe et al., *supra* note 62, at 32-33.

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

136. See Flatt, *supra* note 3, at Part III.

137. Steven D. Cook, *23 States Pursuing Stricter Mercury Controls than Required Under EPA Clean Air Rules*, 37 ENV'T REP. 2381 (2006). The EPA program the states found insufficient has since been invalidated. *New Jersey v. EPA*, 517 F.3d 574, 583-84 (D.C. Cir. 2008).

pollutants when the federal government was slow to regulate.¹³⁸ Giving states the option of setting more stringent goals and standards is, therefore, unlikely to lead to state divergence unless and until the federal government fails to develop adequate controls. The current flurry of state climate-change initiatives has arisen in part because of the absence of federal requirements. If the federal government assumes the mantle of regulation adequately, states are likely to defer to the federal program.

2. *The Relative Significance of Adverse Impacts*

If states do choose to adopt more stringent targets, a step they are most likely to take in the face of federal inadequacy, the question remains: is that state action worth its drawbacks? The impacts on the national allowance market present a new challenge to state regulation of environmental problems, while most of the other drawbacks, like a lack of uniformity and potential administrative redundancies, have long been accepted under existing federal environmental laws.

a. *External Impacts on the National Allowance Market*

When a state imposes external impacts on other states, it causes other states to endure a harm over which they have no control. Other states have not had the opportunity to determine whether the harm is worth the benefits obtained. Moreover, if states do not experience the full costs of their regulation, then they could have an incentive to overregulate. Professors Glicksman and Levy state that “[t]he case for displacing state regulatory authority is strongest with respect to those areas in which each state has incentives to make regulatory decisions that serve the state’s own interests while damaging the interests of the collective.”¹³⁹ If state regulations lead to internal benefits and external costs, the states could regulate more heavily than would be optimal because they are able to reap the benefits without experiencing the full costs of their

138. See generally Victor B. Flatt, *Gasping for Breath: The Administrative Flaws of Federal Hazardous Air Pollution Regulation and What We Can Learn from the States*, 34 *ECOLOGY L.Q.* 107, 122-61 (2007).

139. Glicksman & Levy, *supra* note 9, at 602; WHITE PAPER, *supra* note 3, at 23.

regulation.¹⁴⁰ The policy calculus is more complicated, however, when most of the costs are internal and only some of them are external, thus weakening the risk of overregulation. These observations lead to the following conclusions.

i. Allowance Retirement Mechanisms are Necessary to Avoid Adverse Impacts on the National Allowance Market

Since a failure to retire allowances would have a significant external impact—depressing national allowance prices—mechanisms to allow state stringency must provide a mechanism for retiring allowances. That mechanism is particularly important if a state achieves its greater stringency through regulation because regulatory approaches would concentrate the reductions in the more stringent state and, accordingly, reduce that state’s demand for, and the prices of, national allowances.¹⁴¹

ii. Achieving State Stringency through Regulation and Associated Allowance Retirement is Justified Due to the Minor Impact on the National Allowance Market

States should be allowed to achieve more stringent goals through regulation coupled with allowance retirement since that approach will have relatively little impact on the national allowance market. Under a regulatory approach, the extra reductions would be made in the more stringent state, and the retired allowances would simply account for the state’s reduction in demand.¹⁴²

The primary risk is leakage—that state regulations will lead to increased emissions (and demand for allowances) outside the state rather than truly reducing emissions. In that case, retiring the associated allowances could lead to a shortage of allowances for the true emissions, potentially increasing prices.¹⁴³ However, since leakage would negate the effectiveness of a state’s effort to achieve stringency, states are likely

140. Glicksman & Levy, *supra* note 9, at 638 (suggesting that ceiling preemption “is not justified unless there are collective action problems that create incentives for states to overregulate”).

141. A regulatory approach would impose the greatest downward pressure on national allowance prices since all of the stringent state’s reductions would occur internally and all of the excess allowances would flow out of state. While a market approach would induce facilities to reduce emissions to some extent, the market-based requirements could also induce them to purchase additional allowances, decreasing the impact of the state’s stringency on the national allowance market.

142. *See supra* Part IV(B)(1) (discussing impact of state regulatory approach).

143. *See supra* note 118 and accompanying text (discussing role of leakage in affecting the impact of regulatory measures and allowance retirement on the national allowance market).

to avoid regulatory measures that would result in leakage. There is little point in regulating your own facilities if the emissions will simply pop up elsewhere. Internal self-interest should thus reduce (though not eliminate) the threat that state regulations and allowance retirement would otherwise pose to the national allowance market.¹⁴⁴

iii. Achieving State Stringency through Market Mechanisms is Justified Notwithstanding Some Impact on the National Allowance Market

Although the resolution is more difficult, states should also have the option of achieving their greater stringency through market mechanisms, not just direct regulation. Such market mechanisms include having federal or state governments distribute fewer allowances or having the state require facilities to submit more allowances per ton of emissions. In those instances, some external impacts on the national allowance market could occur if the facilities choose to respond to the enhanced requirements by purchasing additional allowances rather than simply reducing emissions.

The benefit of giving states the flexibility to use market measures outweighs the potential external impacts. As I have argued elsewhere, regulatory approaches can and should be an important component of climate-change policy.¹⁴⁵ Nonetheless, most states and the federal government are relying principally on market mechanisms rather than regulatory approaches to control stationary-source GHG emissions.¹⁴⁶ Industry appears more willing to accept market mechanisms than regulatory strategies, creating a greater possibility of political consensus around market approaches.¹⁴⁷ Government regulators may seek to avoid the uncertainty, time, and potential litigation that could be associated with regulatory approaches and prefer to simply to set allowance

144. State self-interest would not eliminate the risk because states could underestimate the leakage that results from their regulations.

145. See generally Alice Kaswan, *Environmental Justice and Domestic Climate Change Policy*, 38 ENVTL. L. REP. NEWS & ANALYSIS 10,287, 10,304-05 (2008).

146. See *supra* note 101 (describing current reliance on cap-and-trade).

147. See U.S. CLIMATE ACTION PARTNERSHIP, A BLUEPRINT FOR LEGISLATIVE ACTION: CONSENSUS RECOMMENDATIONS FOR U.S. CLIMATE PROTECTION LEGISLATION 6 (2009), available at http://www.us-cap.org/pdf/USCAP_Blueprint.pdf; DeShazo & Freeman, *supra* note 3, at 1544.

requirements and require facilities to adjust emissions accordingly.¹⁴⁸ If properly designed, market mechanisms could also create long-term transformative incentives that extend beyond the end-of-the-pipe approach that most regulations have achieved.¹⁴⁹ While this is not the place to evaluate the difficult policy choice between regulatory and market mechanisms, it is clear that precluding states from achieving stringency through market mechanisms would significantly impede state policy choices.

Moreover, while worthy of concern in their own right, the external impacts resulting from state market mechanisms are unlikely to generate one of the most significant adverse consequences of externalized impacts: the risk that a state would overreach when it can externalize the consequences of its actions. Since in-state facilities would experience a significantly greater impact than out-of-state facilities, the risk of overregulation is low, reducing the potential adverse consequences of the external costs.¹⁵⁰ Moreover, as discussed above, states are unlikely to reap enough sufficiently discrete benefits from more stringent caps to be tempted to do so without good cause.¹⁵¹

In addition, if states set more stringent goals because they believe that federal goals are insufficient, they are in fact providing a national benefit: helping to avert catastrophic climate change. Where unilateral state action provides external benefits as well as external costs, the presence of external benefits helps justify the imposition of external costs. And the risk of states overregulating in order to garner in-state benefits is less pronounced where the state is, in effect, sharing the benefits of its actions with other states.

148. Market advocates critique the relative administrative inefficiency of traditional regulatory approaches. *See, e.g.*, Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 *STAN. L. REV.* 1333, 1342-43 (1985) (describing market-based systems as more administratively efficient than regulatory programs). The assertion is not without its critics. *See* McAllister, *supra* note 101 (suggesting that trading programs are not necessarily more administratively efficient than traditional regulatory programs).

149. Market advocates frequently refer to the technology innovation incentives created by market mechanisms. *See, e.g.*, Ackerman & Stewart, *supra* note 148, at 1336, 1349-50 (describing innovation incentives). This assertion is also not without its critics. *See, e.g.*, David Driesen, *Is Emissions Trading an Economic Incentive Program? Replacing the Command-and-Control Economic Incentive Dichotomy*, 55 *WASH. & LEE L. REV.* 289 (1998) (suggesting that trading programs do not necessarily promote incentives for adopting or developing expensive technology).

150. *See supra* Part IV(B)(2); Butler & Macey, *supra* note 59, at 47 (noting that state restrictions with out-of-state impacts often impose the highest costs on in-state consumers, thus limiting the risk of states over-regulating); WHITE PAPER, *supra* note 3, at 23 (suggesting that a state role is appropriate “where a State decides to impose a burden on its own citizens and industry without imposing a significant burden outside the State”); Kaswan, *supra* note 12, at 802-03.

151. *See supra* notes 132-34 and accompanying text.

In sum, market measures to achieve stringency are justified notwithstanding their potential impact on the national allowance market. Forcing states to use regulatory approaches could unduly constrain their policy choices. And the risk of overreaching is mitigated by the internal costs that states are likely to experience from their more stringent goals and the relatively limited benefits they would obtain from their promotion of stringency. Moreover, the external benefits of allowing state stringency mitigate the external costs.

iv. The Toughest Call: Retiring Allowances from the National Pool without State Regulation

The most significant external impact on the national allowance market arises where allowances are auctioned, the state does not achieve stringency through regulation, and the federal or state governments retire the allowances associated with the more stringent goals from the national allowance pool. Under that scenario, the national allowance pool would be reduced, allowance prices would increase, and the nation as a whole would experience the costs of a state's decision to be more stringent. The external costs associated with this mechanism are much more significant than for the other mechanisms. In addition, since the adverse impacts of seeking stringency would not be concentrated in the more stringent state, the disincentives to overregulation would be correspondingly weaker.

However, as noted above, state efforts to achieve stringency do not present as strong a risk of overregulation as other potential forms of state regulation. While a state imposing more stringent limits under this approach would not incur state-specific costs, it is also unlikely to experience significant economic gains, or at least gains tangible enough to prompt such a step, unless the federal program is insufficient.¹⁵² Moreover, as noted above, to the extent more stringent states are making

152. Conceivably, a state could take this approach if it hoped to stimulate its green technology sector. But, as suggested earlier, a state is likely to take this step only if the federal program is insufficient to stimulate green technology. In that case, state stringency is desirable, even if the state receives some incidental economic benefits from that action. In theory, a state could adopt a more stringent GHG program in order to achieve additional environmental co-benefits. *See supra* note 74 and accompanying text (discussing environmental co-benefits that could prompt states to set more stringent GHG reduction goals). But a state whose primary interest is in achieving co-pollutant co-benefits would be more likely to address co-pollutant regulation directly than to adopt a more stringent GHG program solely for that purpose.

up for a federal lapse, they are providing an external benefit that counterbalances the external costs.

b. External Impacts on Out-of-State Consumers

Although one state's more stringent requirements on stationary sources could result in increases in the price of energy or goods for out-of-state consumers, that potential impact is a long-accepted consequence of allowing states to control in-state sources.¹⁵³ In addition, as noted above, the national benefit of state stringency could compensate for its external costs.

As with impacts on the national allowance market, the risk of more generalized external impacts leading to overregulation is less compelling for state efforts to achieve more stringent climate-change goals. That risk is dampened by the likelihood that most forms of state stringency would impose their primary consequences within the state. Where a state imposes cost-increasing requirements on its own facilities, it will be accountable to both its manufacturing sector and its consumers.¹⁵⁴ The risk of over-regulation is thus mitigated by internal political and economic pressures.

The fear of leakage is also likely to prevent states from over-regulating. If a state imposes significantly higher standards on its electricity or manufacturing sectors and serves a significant out-of-state population, then it risks losing its out-of-state customers to other electricity sources or manufacturers and shifting, rather than reducing, its emissions.

c. Uniformity

Uniformity is a legitimate, but not determinative, concern.¹⁵⁵ The nation's existing pollution control statutes have long allowed states to impose more stringent goals or facility standards, notwithstanding the risk of non-uniformity such state autonomy creates.¹⁵⁶ For example, in

153. See Andreen, *supra* note 9, at 294.

154. State efforts to achieve stringency are thus less likely to result in potential over-regulation than state product standards that control products produced out-of-state.

155. See Kaswan, *supra* note 12, at 802 (stating that “[c]onsistency is an important, but not necessarily determinative, factor” in determining the balance between federal and state power).

156. See Andreen, *supra* note 9, at 293-94; Glicksman & Levy, *supra* note 9, at 616, 635. As Professors Glicksman and Levy note, “[C]oncerns for uniformity cannot be characterized as particularly central to the purposes of the CAA’s regulation of stationary sources.” *Id.* at 636. Professor Andreen notes that Congress has valued uniformity more in the context of product standards than stationary-source standards. Andreen, *supra* note 9, at 293.

the air pollution context, states retain the power to impose more stringent air pollution controls on stationary sources,¹⁵⁷ and, under Title V of the Clean Air Act, the states, not the federal government, generally negotiate specific permitting requirements pursuant to federal requirements and any more stringent state requirements.¹⁵⁸ The Clean Air Act itself establishes differentiated facility standards based on a region's attainment status.¹⁵⁹ From an administrative standpoint, facilities are accustomed to determining additional state requirements.¹⁶⁰

Moreover, market-based mechanisms for achieving stringency would impose even less of an administrative burden on industry than differing regulatory standards. In a market-based program, the facility must simply determine how many allowances to submit to the state. It retains discretion to determine how to comply with the requirement. While the impacted facilities may seek to avoid the financial costs associated with more stringent regulation, the existence of differing allowance requirements does not appear to be an overriding administrative obstacle to industry.

For industry, the competitive rather than the administrative impacts of a lack of uniformity are likely to be the more significant concern. Ultimately, however, the states imposing more stringent reduction requirements are responsible for weighing the tradeoffs between achieving their environmental goals and adversely impacting certain in-state industries. That in-state industries may prefer to avoid the impact does not render the state's democratic choice illegitimate.

The leakage risk presented by non-uniform standards is an important issue for states to consider in determining whether their efforts to achieve stringency will be worth it. But the risk of leakage is not a reason to prevent states from being more stringent. To the extent that states fear leakage—fear that the competitive impacts of regulating in-state sources more stringently will drive industry or production and the associated emissions elsewhere—the states are unlikely to impose more stringent limits on stationary sources. While leakage concerns may

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

158. *See Id.* §§ 7661-7661f.

159. *See supra* note 61 (describing different technology-based standards in attainment and nonattainment areas).

160. *See* ANDREEN ET AL., *supra* note 9, at 1, 16 (observing that “[m]ost industries . . . have systems in place to ensure their compliance with different legal regimes at the international, federal, state, and local levels”).

result in relatively few states exercising their autonomy to set more stringent targets, they do not justify prohibiting states from exercising autonomy where they believe their requirements could be effective.

Some may argue that the consequences of a lack of uniformity are acceptable in the context of traditional pollutants because those pollutants have local impacts and states have a particularly strong interest in being able to control them further if national emission requirements are insufficient. In other words, the lack of uniformity is justified by the importance of state control over local air and water quality, an issue not raised by GHG gases. As discussed above, however, powerful arguments for state control over stringency continue to justify a potential lack of uniformity even in the absence of direct local impacts. The nation will benefit from a state safety net in the face of potential federal failure. Moreover, states that choose to integrate their GHG and co-pollutant reduction strategies could seek to impose more stringent requirements on stationary sources in order to maximize local, not simply global, benefits. More broadly, state control over in-state facilities remains an important state prerogative, a prerogative that would be compromised if states were not permitted to establish more stringent targets and impose them on in-state stationary facilities.

d. Administrative Efficiency

As discussed above, duplicative federal and state roles create certain governmental inefficiencies. Allowing state control over GHGs would not, however, create a brand-new state administrative structure. The Clean Air Act already gives states considerable control over traditional pollutants and most facilities receive state-issued permits.¹⁶¹ Duplicative federal and state structures already exist. Allowing state control would add GHGs to the list of state-controlled pollutants, not create a new role for states.

In addition, the extent of duplication could be reduced if the federal government delegated certain compliance and enforcement functions to the states. While the federal government is likely to maintain control over federal compliance submissions, certain inspection, monitoring, and enforcement functions could be delegated to states that have met federal standards. That would avoid duplicated state and federal action in these areas. In fact, given limited federal resources and the tradition of state

161. See *supra* notes 157 to 159 and accompanying text (discussing state controls under the CAA).

monitoring and enforcement of facility emissions, the federal government is likely to seek state assistance.¹⁶²

While allowing states to set more stringent targets and impose additional requirements on in-state facilities could create some duplication and require a greater use of collective government resources than would occur under a purely federal program, the impact should not be overstated in light of existing state administrative structures, and must be considered in light of the political and environmental justifications for allowing state control.¹⁶³

e. Conclusion

Most policy choices have trade-offs, and allowing states to set more stringent targets and retire the associated allowances is no exception. For most (if not all) of the mechanisms for achieving state stringency described above, the justifications for allowing state stringency outweigh their adverse consequences. Ultimately, the entire nation would benefit from overlapping jurisdiction's inherent advantages—the greater resilience that it offers to federal political failure, to changing circumstances,¹⁶⁴ and as an antidote to regulatory stagnation.¹⁶⁵ Moreover, a state's capacity to control in-state facility GHG emissions is an important attribute of state power.

The most significant concern raised by allowing states to seek more stringent targets is the potential impact on the national allowance market. On that score, a state's use of regulatory mechanisms to achieve stringency, combined with allowance retirement, is fully acceptable since there will be little impact on the national allowance market. I argue that the benefits of allowing state stringency and of giving states flexibility in their mechanisms for achieving stringency justify letting

162. John P. Dwyer, *The Role of State Law in an Era of Federal Preemption: Lessons from Environmental Regulation*, 60 L. & CONTEMP. PROBS. 203, 220 (1997). A full analysis of the role of the states in monitoring, compliance, and enforcement is an area ripe for inquiry but beyond the scope of this Article.

163. Glicksman and Levy state that “the question . . . is” whether the regulatory burdens imposed by duplicative federal and state programs justify preempting a state's ability to be more protective, and “something more than . . . general concerns for regulatory burdens should be necessary to warrant ceiling preemption . . .”. Glicksman & Levy, *supra* note 9, at 607.

164. See *supra* note 29 and accompanying text (discussing Adelman and Engel arguments).

165. See *supra* note 31 and accompanying text.

states use market mechanisms, such as requiring more allowances per ton of emissions, notwithstanding some impact on the national allowance market. The mechanisms that would impose the consequences of the state's cap on all states without concentrating the impact in the more stringent state—those that retire allowances from the national pool prior to auction and in the absence of regulation—present a more significant cause for concern. While that impact should be a relevant factor in considering the relative desirability of such mechanisms, the associated benefits suggest that this approach should not be ruled out entirely. The other negative attributes of allowing state stringency, including external costs resulting from increasing regulation in the more stringent state, a lack of uniformity, and the administrative costs of overlapping federal and state control, present the same concerns as existing environmental statutes, and remain acceptable costs of allowing state autonomy.

A cooperative federalist model that recognizes the importance of both federal and state roles is as appropriate for GHG policy as it is in the context of traditional environmental regulation. While the negative attributes of state control are not irrelevant and their relative impacts are important considerations in policy design, the negative attributes do not warrant precluding state stringency.

VI. IMPLICATIONS FOR FEDERAL LEGISLATION

The analysis presented here suggests not only that allowing states to be more stringent is justified in the abstract but also that there are a number of acceptable mechanisms by which stringency could be effectively achieved. The Article presents the primary federalism implications of each mechanism. Ultimately, however, policymakers must consider several additional factors in determining what mechanisms to permit within federal legislation. One important factor in the political debate will be the relative burden on industry.¹⁶⁶ Another factor will be the relative impact on auction revenue.¹⁶⁷ The relative administrative ease of the alternative mechanisms, whether regulatory or market-based, is also a relevant consideration. These issues are, however, beyond the scope of this Article.

166. For example, some mechanisms, like requiring facilities to submit more than one allowance per ton of emissions, impose the cost of retiring allowances on high-cost reducers who prefer to purchase allowances rather than reduce emissions. Other mechanisms, like retiring allowances from the pool prior to distribution, would likely have less financial impact on covered facilities.

167. Retiring allowances prior to auction is likely to reduce revenue, whereas requiring industry to submit additional allowances per ton of emissions would not. Auction revenue is likely to be critical to implementing many important climate-related policies, like investments in energy efficiency and alternative technology, adaptation, and international climate assistance.

As policymakers consider how to design federal legislation to allow state stringency, they are likely to consider the issue in the larger context: to what extent should a federal cap-and-trade program devolve power to the states? That is why this Article situates potential mechanisms for achieving state stringency within three possible options for decentralized power: the light, medium, and heavy decentralization models. The choice of model does not impact whether state stringency could be achieved; it could be achieved under all of these models. The choice of model does, however, have a significant impact on a state's options for retiring allowances.

Under the light decentralization model reflected in existing environmental statutes, states could set more stringent general goals and annual caps. States could also impose regulatory requirements on in-state sources to reduce emissions below the reductions that would have been expected under a trading system. However, whether they regulate directly or not, the states would have to rely upon the federal government to either retire the extra allowances or give them allowances that they could then retire.¹⁶⁸ The light decentralization model limits a state's options for achieving stringency and retiring allowances. Moreover, if the federal government auctions allowances and the state does not choose to meet its more stringent target through regulation, then the only available mechanism for retiring allowances—having the federal government or the state withhold them from the national allowance supply—has the relatively undesirable impact of imposing the impact on the national allowance market as a whole rather than concentrating it within the more stringent state. Thus, if federal legislation calls for allowances to be auctioned, the medium or heavy decentralization models could present preferable options for retiring allowances.

Under the medium decentralization model, in which states could require in-state facilities to submit federal allowances in an in-state compliance process, states could more directly control the allowance retirement options. They could set regulatory standards and then, if the

168. As suggested above, if the federal government distributes allowances for free, it could distribute fewer allowances to facilities in the more stringent state. If the federal government auctioned allowances *and* the more stringent state achieved its stringency through regulation, the federal government could hold back the associated reductions from the national allowance pool. However, if a state does not achieve its stringency through regulatory mechanisms and the federal government auctions allowances, then the states' goals would have to be met by the federal government withholding allowances from the national pool prior to auction.

federal government freely distributes allowances, require facilities to submit their extra allowances to the state. Or, instead of achieving stringency through regulatory standards, they could simply require in-state facilities to submit more federal allowances per ton of emissions, a mechanism that would simultaneously achieve greater stringency by requiring more emissions per allowance and retire the extra allowances. The medium decentralization model clearly offers the states more options than the light decentralization model.

State stringency would be easiest to achieve under the heavy decentralization model. Prior to distributing allowances to in-state facilities, states could retire the extra reductions from the emissions budget received from the federal government.

Ultimately, federal policymakers will not adopt one or another decentralization model based solely upon its implications for state stringency. While the options each model presents for achieving stringency are relevant factors in the relative desirability of each model, many other factors will influence policymakers' choice of model. The medium decentralization model, which allows states to establish their own compliance process, could provide states with a range of powers over GHG trading.¹⁶⁹ The heavy decentralization model presents a much greater devolution of power to the states by allowing them to make the critical political and economic decisions about how to allocate allowances to in-state facilities in the first place. The choice of model therefore presents issues that are beyond the scope of this Article.

Although I do not advocate for the adoption of a particular decentralization model in this Article, I note that, if federal legislation is designed to allow states to be more stringent, the scope of state and federal authorities must be explicit. As Professor Buzbee argues in this Symposium volume, entities resisting state control are likely to challenge state efforts as preempted, and, unless the federal legislation unambiguously allows the type of state control in question, the courts could find that the federal legislation impliedly preempts state controls.¹⁷⁰

More specifically, if federal legislation follows a light decentralization model, federal legislation would have to create a mechanism for either

169. I address some of these powers, including controls on offset use and trading controls to maximize co-pollutant reduction benefits, in Kaswan, *supra* note 10.

170. See Buzbee, *supra* note 4, at Part VI; Robert L. Glicksman, *From Cooperative to Inoperative Federalism: The Perverse Mutation of Environmental Law and Policy*, 41 WAKE FOREST L. REV. 719, 787-92 (2006) (describing courts' tendencies to find implicit preemption); Robert K. Huffman & Jonathon M. Weisgall, *Climate Change and the States: Constitutional Issues Arising from State Climate Protection Leadership*, 8 SUSTAINABLE DEV. L. & POL'Y 6, 9 (2008) (stating that courts would likely hold that federal climate legislation occupies the field of GHG regulation and therefore preempts state programs).

the federal government to retire associated allowances or the allowances to be given to the states to retire, instead of auction. To enable a medium form of decentralization, federal legislation would have to explicitly authorize state-imposed restrictions on the use of federal allowances or offsets, or the state programs would risk preemption or Dormant Commerce Clause challenges.¹⁷¹ To create the heavy decentralization model, explicit provisions would have to authorize the federal government to set state allowance budgets for participating states and create a mechanism for delegating allowance distribution responsibilities to the states.

VII. CONCLUSION

Given the breadth of cap-and-trade programs currently being considered, the states' role in environmental regulation will be substantially diminished if they are preempted from setting caps and realizing greater stringency through controls on stationary-source emissions. Ironically, preserving state power does not undermine national well-being; it protects the nation as a whole from the risk of federal failure. With careful attention to detail, Congress can design mechanisms that capitalize on the benefits of state action while minimizing its drawbacks. Our system of federalism and the values of state control and autonomy that it embodies suggest that Congress should create effective mechanisms for the exercise of state power.

171. See Buzbee, *supra* note 4, at Part III(C) (discussing preemption risk); Farber, *supra* note 15, at 915, 918-19 (arguing that, unless explicitly authorized by Congress, state restrictions on federal allowance use by covered facilities will likely be preempted); NACAA, *Preserving the Rights of the States*, in *DEFINING THE ROLE OF STATES AND LOCALITIES*, *supra* note 25, at 13. For example, when New York State imposed restrictions on in-state facilities' ability to sell acid rain allowances to facilities in upwind states, the 2nd Circuit concluded that such restrictions were contrary to, and hence preempted by the Clean Air Act. *Clean Air Mkts. Group v. Pataki*, 338 F.3d 82, 89 (2d Cir. 2003). The district court also found that the restrictions violated the Dormant Commerce Clause. *Clean Air Mkts. Group v. Pataki*, 194 F. Supp. 2d 147, 160 (N.D.N.Y. 2002). A requirement that facilities submit "extra" allowances to the state would have the same effect as a prohibition on selling them, and could face a similar constitutional challenge. See Glicksman & Levy, *supra* note 9, at 646.