

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

By Alice Kaswan *

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* Professor of Law, University of San Francisco School of Law. J.D. Harvard Law School; B.S. University of California at Berkeley. My thanks to the University of San Diego for the opportunity to participate in this symposium, to David Dreisen, Lesley McAllister_____ for their insightful comments, and to Rick Diamond for his unflagging patience and encouragement.

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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 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 any state role in a trading system, that preemption could have a substantial impact on the states' ability to address climate change. To be sure, federal legislation is likely to leave considerable scope for state control in areas like land use.⁴ 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.⁵

¹ The most recent federal legislative proposal calls for a cap-and-trade program to control stationary source and transportation emissions. American Clean Energy and Security Act of 2009, 111th Cong., Title III (Reducing Global Warming Pollution) (hereinafter "Waxman-Markey"). That bill narrowly passed the House in June 2009 and is currently under consideration in the Senate. Carolyn Lochhead, *Landmark Climate Bill Squeaks Through*, S.F. CHRON. A1 (June 27, 2009). If it clears the Senate, President Obama is likely to support such cap-and-trade legislation. See John M. Broder, *Setting "Green" Goals*, NEW YORK TIMES A16 (Feb. 27, 2009).

² See Timothy Heinmiller, *The Politics of "Cap and Trade" Policies*, 47 NAT'L RESCS 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 Victor Flatt, *The History of State Action in the Environmental Realm: A Presumption Against Pre-emption in Climate Change Law?*, 1 SAN DIEGO J. _____ [first page of draft article] (2009) House Committee on Energy & Commerce, *Climate Change Legislation Design White Paper: Appropriate Roles for Different Levels of Government* (February 2008), available at http://energycommerce.house.gov/images/stories/Documents/PDF/selected_legislation/white%20paper%20st-lcl%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. DeShazo & Jody Freeman, *Timing and Form of Federal Regulation: The Case of Climate Change*, 155 U. PA. L. REV. 1499, 1536 n. 135. Legislation under consideration at the time of this writing provides a relatively wide scope for state control, as discussed further below. See *supra* note ____.

⁴ House Committee on Energy & Commerce, *supra* note ___, at 2, 7; Waxman-Markey, *supra* note ___, § 222 (amending Title VIII of the Clean Air Act to require regional metropolitan planning organizations to develop greenhouse gas reduction targets and implementation strategies).

⁵ 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

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.⁶ If federal legislation imposing a cap-and-trade program on direct stationary source 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 administrative resources devoted to regulatory programs at both the federal and state levels. Determining the appropriate balance between the benefits of allowing state control and potential detrimental impacts poses a significant challenge.

This Article addresses a first 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.⁷ Numerous scholars have articulated the compelling justifications for allowing states to be more stringent than the federal government.⁸ This Article takes the next step: it not only reviews these justifications; it

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 (2008), available at <http://www.pewclimate.org/docUploads/StateFedRoles.pdf>; Thomas A. Peterson, Robert B. McKinstry, Jr., and John C. Dernbach, *Developing a Comprehensive Approach to Climate Change Policy in the United States that Fully Integrates Levels of Government and Economic Sectors*, 26 VA ENVTL L.J. 227, 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. Waxman-Markey § 101 (amending Title VI of the Public Utility Regulatory Policies Act of 1978). Although the federal legislation provides for an increased federal role in 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. Waxman-Markey § 201 (amending § 304(c) of the Energy Conservation and Production Act).

⁶ According to the U.S. Environmental Protection Agency, in 2007, 34 percent of U.S. GHG emissions came from electricity generation and 20 percent came from industrial sources. U.S. ENVIRONMENTAL PROTECTION AGENCY, 2009 U.S. GREENHOUSE GAS INVENTORY REPORT: INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2007 ES-14 (2009).

⁷ 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 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 allowances.

⁸ William L. Andreen, *Federal Climate Change Legislation and Preemption*, 3 ENV'L & ENERGY L & POL'Y J. 261 (2008); WILLIAM ANDREEN, ROBERT GLICKSMAN, NINA MENDELSON, RENA STENIZOR, & SHANA JONES, COOPERATIVE FEDERALISM AND CLIMATE CHANGE: WHY FEDERAL, STATE, AND LOCAL GOVERNMENTS MUST CONTINUE TO PARTNER (2008), available at <http://www.progressiveregulation.org/articles/federalismClimateChange.pdf>; 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 __; Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 AZ. L. REV. 681 (2008); cf. William W. Buzbee, *Asymmetrical Regulation: Risk*,

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. The analysis reveals that differing mechanisms for achieving stringency are likely to have differing impacts. The Article concludes that allowing states to achieve greater stringency is justified notwithstanding certain negative consequences, but suggests that policymakers should weigh the differences in impact in evaluating their policy options.

The Article is the first in a series that will address the wisdom of decentralizing control over a variety of cap-and-trade parameters. Subsequent scholarship will address trading policies more generally, including the extent to which states could combine regulation and market mechanisms, or, within the market, impose differing offset requirements or trading restrictions to achieve potential economic and environmental co-benefits. Subsequent scholarship will also address allowance distribution: namely, whether states should be permitted to distribute federal allowances to in-state facilities, an issue with substantial political and economic implications.

Part II of this Article articulates the primary benefits of allowing states to set more stringent caps: (1) the national importance of creating a safety net in the event of federal failure, and (2) state democratic prerogatives. 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 decentralization, it then describes a set of possible decentralization options and the mechanisms states could use to achieve stringency within each model. The “light” decentralization model would mirror existing environmental statutes: it would allow states to set more stringent emission reduction goals and impose stricter regulatory requirements on facilities. The “medium” decentralization model would go further, allowing states to impose their own compliance requirements on in-state facilities’ use of federal allowances. Under the “heavy” decentralization model, the federal government would determine the emissions budget for a state and the state would then distribute allowances to in-state facilities.

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.

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. States are also unlikely to be more stringent unless the federal program is flawed, and are thus most likely to act when their action is most justified. Part V also concludes that potential external impacts on the national allowance market are the

Preemption, and the Floor/Ceiling Distinction, 82 N.Y.U.L. REV. 1547 (arguing that federal legislation should generally allow states to be more, but not less, stringent than federal standards).

most serious potential consequence and an important factor in considering options for achieving stringency. Nonetheless, some impact on the national allowance market is acceptable in light of significant state benefits. Potential impacts on out-of-state consumers, uniformity, and administrative efficiency are of less concern, and are long-accepted costs of a federal system that respects the inherent value of state sovereignty.

Part VI briefly articulates some of the implications of the foregoing analysis for federal legislation. It does not recommend either a particular mechanism for achieving stringency or a particular decentralization model, but identifies the important federalism considerations that are likely to be a factor in policymakers' ultimate policy design decisions.

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.⁹ The Article therefore assumes that federal climate change legislation is desirable and that a federal cap-and-trade program will be a component of that legislation. It also assumes a minimum federal cap and that all trading would be 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, or other entities that are upstream from, and do not directly cause, emissions.¹⁰ 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.

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.¹¹

⁹ 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. UNIV. L. REV. 791, 794-97 (2008) [hereinafter Kaswan, *Cooperative Federalism*]

¹⁰ 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 HARVARD ENVTL L. REV. 65 (2009).

¹¹ For analyses of how the courts should evaluate a future conflict between federal climate change law and state initiatives, see, e.g., Dan Farber, *Climate Change, Federalism, and the Constitution*, 50 ARIZ. L. REV. 879 (2008), Glicksman & Levy, *supra* note __; Alexandra B. Klass, *State Innovation and Preemption: Lessons from State Climate Change Efforts*, 41 LOYOLA 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).

III. 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.¹² 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 percent below 2005 levels by 2020 and 80 percent below 2005 levels by 2050.¹³ The economy-wide goals in recent legislative proposals reflect the share of global reductions that the jurisdiction is politically willing to accept, a judgment that appears 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 caps for the covered sectors.¹⁴ These caps specify the number of allowances to be distributed to facilities in the program each year. The yearly caps therefore determine the proportion of the emissions reductions to be achieved by the covered facilities and, through the rate at which the annual caps decrease each year, the pace at which the overarching economy-wide goals will be reached. 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.¹⁵ The yearly caps are also 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 and more allowances are distributed than are needed, then 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.¹⁶

¹² See generally Lesley K. McAllister, *The Overallocation Problem in Cap-And-Trade: Moving Toward Stringency*, 34 COLUMBIA J. ENVTL L. 395 (2009).

¹³ For example, the Waxman-Markey legislation establishes the goal of reducing emissions by 20 percent below 2005 levels by 2020 and by 83 percent by 2050, with a number of interim goals. Waxman-Markey § 702.

¹⁴ See, e.g., Waxman-Markey § 721 (establishing number of allowances to be issued for 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, *The Overallocation Problem*, *supra* note __, at 399.

¹⁵ See Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, __ CORNELL L. REV. __, 112-14 of draft (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 19 (2007).

¹⁶ McAllister, *The Overallocation Problem*, *supra* note __, at 401-03 (describing failure to achieve feasible reductions in the Acid Rain Program).

Economy-wide long-term goals and annual caps 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 impact the short- and long-term costs of coping with climate change.¹⁷ The potential economic impact of climate change policies has been a significant issue in recent policy debates.¹⁸ The timing of the reductions has not only environmental, but also economic implications.¹⁹ 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

A critical benefit to giving states the power to set more stringent caps is that they could provide a safety net in case the federal government fails to set adequately stringent long-term emissions reduction goals or fails to set sufficiently stringent yearly caps.²⁰ The risk is not remote: several existing trading programs have set insufficiently stringent targets that have in turn led to overallocated allowances.²¹ In some instances, the overallocation resulted in failure: allowances exceeded emissions, creating little, if any, incentive for emissions reductions.²² In other instances, like the U.S. Acid Rain Program, emissions were reduced to some extent, but not to the extent readily feasible.²³

¹⁷ See, e.g., MCKINSEY & COMPANY, *PATHWAYS TO A LOW-CARBON ECONOMY: VERSION 2 OF THE GLOBAL GREENHOUSE GAS ABATEMENT COST CURVE* (2009), available at 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), available at http://www.hm-treasury.gov.uk/stern_review_report.htm (discussing economics of climate policy).

¹⁸ See, e.g., Jennifer A. Dlouhy, *Emissions Cap Support Wave[r]s among Key Democrats*, SAN FRANCISCO CHRONICLE A6 (May 14, 2009) (describing legislative concerns about economic impacts of proposed federal climate legislation).

¹⁹ See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *CLIMATE CHANGE 2007: SYNTHESIS REPORT, SUMMARY FOR POLICYMAKERS 19* (2007). See also MCKINSEY & COMPANY, *supra* note __, at 12-14 (discussing the importance of significant near-term reductions and the environmental and economic risks of delay).

²⁰ See Andreen, *supra* note __, 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 __ [article in this volume]; LITZ *supra* note __, at 11; National Association of Clean Air Agencies, NACAA, *Preserving the Right of States*, *supra* note __, at 11..

²¹ See McAllister, *The Overallocation Problem*, *supra* note __

²² 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; LARRY PARKER, CONG. RESEARCH SERV., *CLIMATE CHANGE: THE EU EMISSIONS TRADING SCHEME (ETS) GETS READY FOR KYOTO 6* (2007). 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* 34-35 (2008). 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, *The Overallocation Problem*, *supra* note __, 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.

²³ 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, *The Overallocation Problem*, *supra* note __, at 421-22, 438-39.

Federal climate policy could make the same mistake, and fail to set environmental goals that contribute substantially enough to the global effort to preserve the planet from catastrophic climate change.²⁴ The political pressures for weak federal economy-wide goals are strong.²⁵ While many industries have supported climate change regulation and recognize both its necessity and its inevitability,²⁶ the powerful fossil fuel industry, including coal and oil and gas, are likely to perceive regulation as a significant threat.²⁷ Utility opposition to stringent targets is likely to arise from concerns about costs and implementation, since existing utility regulations and rate structures often create impediments or disincentives to investing in the measures necessary to achieve stringent targets: alternative energy and energy efficiency.²⁸ A significant infrastructure and workforce rely upon the fossil fuel industry.²⁹ Concentrated, entrenched interests like the oil and gas industry and utilities are politically organized and powerful, in contrast to the more diffuse and less financially influential environmental groups, the yet-to-be developed alternative technology sector, and the future generations who will be most impacted by climate change.³⁰ Fundamentally, it is difficult for members of Congress – or anyone -- 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.³¹ Moreover, since climate change harms will be unevenly distributed, and are

²⁴ Opinions differ on the appropriate reduction levels. They differ on the appropriate balance between environmental protection and the costs of mitigation. It is also unclear what share of global emissions the U.S. should reduce, since U.S. reductions alone will not save the planet. Although not without dispute, the Intergovernmental Panel on Climate Change has suggested the contribution that appears appropriate from developed countries. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, IPCC FOURTH ASSESSMENT REPORT, CLIMATE CHANGE 2007: MITIGATION 775 (2007). This Article is not, however, the place to resolve the question of how stringent the cap should be. The issue for this article is that states should have the discretion to set a more stringent cap than the federal government. For discussion of how caps should be set, see David Driesen, *Capping Carbon*, [draft article]; McAllister, *The Overallocation Problem*, *supra* note __, at 426-31

²⁵ Cf. *Cap-and-Trade Charade: The Political and Business Self-Interest Behind Carbon Limits*, WALL ST. J., Mar. 3, 2007 (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 __, at 454. While the fear of climate change is unlikely to lead to a mere freeze in emissions, the political dynamic is instructive.

²⁶ 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, <http://www.us-cap.org/> (last visited June 16, 2009).

²⁷ 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).

²⁸ 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).

²⁹ Terry Dinan, *Congressional Budget Office Economic and Budget Issue Brief: Trade-Offs in Allocating Allowances for CO₂ Emissions* 3 (2007), available at http://www.cbo.gov/ftpdocs/89xx/doc8946/04-25-Cap_Trade.pdf.

³⁰ See Lazarus, *supra* note __, at 129-30, 132 [of draft] (describing power of entrenched interests) and 130 (describing why it is more difficult for environmentalists to be politically powerful)

³¹ See Farber, *supra* note __, 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*

likely to be most serious outside the United States, many legislators and their constituents may not perceive the requisite urgency.³² On a practical level, the future prospects of carbon capture and storage technology could also lead Congress to delay significant near-term reduction requirements in the hope that the technology will obviate the need to transition away from coal.³³ The federal government may therefore fail to set stringent economy-wide percentage reduction goals.³⁴

Even if the federal government is willing to establish lofty economy-wide reduction goals that appear to lead the nation to significant reductions in the long term, it may establish short-term yearly annual caps that result in overallocated allowances. Past trading programs have overallocated allowances, particularly as a program begins, to build industry comfort with and support for the trading program.³⁵ Annual caps may also assume economic growth, and provide allowances accordingly.³⁶ If that economic growth fails to occur, then more allowances will be released than is appropriate for a given level of economic activity, resulting in fewer emissions reductions.³⁷ Another risk is that the annual caps will be based upon inaccurate modeling that overestimates existing emissions, as occurred in the European Trading System.³⁸ While the United States could

note __, at 121-23 [of draft] (describing the innate human difficulty in taking action with short-term impacts in order to provide long-term benefits) and 130-131 [of draft] (describing how short election cycles lead policymakers to focus on short-term rather than long-term consequences).

³² See Lazarus, *supra* note __, at 116-18 [of draft].

³³ 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 (describing carbon capture and storage); David J. Hayes & Joel C. Beauvais, *Carbon Sequestration* in GLOBAL CLIMATE CHANGE AND U.S. LAW 691, 707-15 (Michael B. Gerrard, ed. 2007) (same).

³⁴ Recently proposed federal legislation provides a case in point. The Waxman-Markey bill establishes an economy-wide goal of reducing emissions by 20 percent below 2005 emissions by 2020. Waxman-Markey § 702. 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 percent below 2005 emissions by 2020. Waxman-Markey § 703. 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 10 – 40 percent below 1990 levels by 2020, a more substantial reduction than that contemplated by the recent legislation, which uses higher 2005 emissions as its baseline. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, IPCC FOURTH ASSESSMENT REPORT, CLIMATE CHANGE 2007: MITIGATION 775 (2007).

³⁵ See McAllister, *supra* note __, at 414 (describing general issue of overallocation to obtain political support), 433 (noting how Illinois designed its allowance allocation rules to “make businesses feel comfortable”), 434 (describing how RECLAIM's allowance allocation process included concessions designed to make it “politically salable”)

³⁶ 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.

³⁷ In other trading programs, inaccurate (and optimistic) projections of economic growth have led to emissions projections that exceed actual emissions. See McAllister, *The Overallocation Problem*, *supra* note __, 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 5-6 (2007) (describing state desire to allow for economic growth as one factor in states' setting insufficiently stringent caps).

³⁸ A DENNY ELLERMAN & PAUL L. JOSKOW, THE EUROPEAN UNION'S EMISSIONS TRADING SYSTEM IN PERSPECTIVE 32 (2008); PARKER, *supra* note __, at 5-6.

learn from European missteps, success is not assured, particularly given the political pressures that are likely to attach to setting annual caps.³⁹

Of course, similar political forces and economic concerns could keep states from setting sufficiently stringent caps. But as many scholars have noted, allowing overlapping jurisdiction – allowing more than one entity to set reduction goals – reduces the risk of regulatory failure at any one level.⁴⁰ If 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.

Regulatory redundancy is particularly important where government entities make decisions under uncertainty, since uncertainty enhances the risk of erroneous decisions.⁴¹ And even if the yearly federal caps established by federal legislation 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 reductions become available.⁴² Regulatory programs, once created, risk stagnation.⁴³ Should existing caps prove insufficient, states may be more nimble at adjusting their caps than the federal government.⁴⁴

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.⁴⁵ 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.⁴⁶

³⁹ See *supra* note __ (describing reasons why allowances may be overallocated).

⁴⁰ As Professor Kirsten Engel has stated, the states’ ability to react to an ineffective federal program is critical; “[p]reemption ... prevents the political process from policing itself.” Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 163(2006). See generally Buzbee, *supra* note __, 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); Engel, *supra* note __, at 161, 178-81 (same).

⁴¹ 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. Cite to Engel/Adelman Minn article; see also Buzbee, *supra* note __, at 1619 (arguing that it is particularly important to allow for state experimentation in new regulatory areas).

⁴² See McAllister, *The Overallocation Problem*, *supra* note __, at 435-39.

⁴³ See Buzbee, *supra* note __, at 1494-95; 1608-09.

⁴⁴ See McAllister, *The Overallocation Problem*, *supra* note __, 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 __, at 11 (describing New York’s adoption of a more stringent program in response to the inadequacies of the federal Acid Rain Program).

⁴⁵ See Heinmiller, *supra* note __, at 452-53 (describing the political tensions between environmentalists and resource users that arise in cap-setting debates), and at 455 (noting that setting caps is not “simply a technical exercise[,]” but “the subject of intense political struggle and negotiation by opposing interests”).

⁴⁶ See ANDREEN, ET AL., *supra* note __, at 8 (describing state and local desire to exceed federal minimums to meet constituent demands); Andreen, *supra* note __, at 284, 294 (observing that states might want to set

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.⁴⁷ According to this argument, existing pollution control laws, like the Clean Air Act 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,⁴⁸ the local pollution consequences justified giving states continued overlapping power to control facility emissions, particularly under the CAA.⁴⁹ 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 in addition to, not exclusive of, local impacts over which the states would want to continue to exert control. According to this argument, state democratic control over GHGs is unnecessary and not compelling given the absence of local impacts.

The argument that local or state control is unnecessary or inappropriate 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 states, be premised on a general moral

more stringent caps or deadlines than a federal cap-and-trade program); NACAA, *supra* note __, 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* Esty, *supra* note __, at 609-10; Stewart, at 1210 (describing democratic justification for allowing state environmental decisionmaking). **[first cites may be infra, not supra]**

⁴⁷ *See* William L. Andreen, *Federal Climate Change Legislation and Preemption*, 3 ENV'L & ENERGY L & POL'Y J. 261, 288 (2008) (describing argument); House Committee on Energy and Commerce, *supra* note __, at 11 (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"), and 12 (same argument). This argument is often called the "matching principle:" the principle that the scale of the regulating 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).

⁴⁸ *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).

⁴⁹ 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. 42 U.S.C. § 7411 (new source performance standards); 42 U.S.C. § 7503(a)(2) (establishing requirement that new sources in nonattainment areas achieve the lowest achievable emission rate); 42 U.S.C. § 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. 42 U.S.C. § 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. 42 U.S.C. § 1313(d) (establishing TMDL process).

concern for the planet's survival.⁵⁰ In others, the potential local consequences of climate change may create an urgency that is not shared in other parts of the country, where the impacts may be less drastic or more uncertain.⁵¹ For example, rising sea levels will significantly impact coastal states.⁵² In some parts of the country, increasing temperatures will cause dangerous heat waves,⁵³ impact water supplies,⁵⁴ and worsen local air pollution.⁵⁵ Changing weather patterns could impact agriculture dramatically.⁵⁶ 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.⁵⁷ 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 commitment through more stringent caps.

The relative costs and benefits of setting stringent caps also vary by state, and could impact the level of stringency 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.⁵⁸ For example, increasing energy efficiency could lower consumer energy costs⁵⁹ and reduce reliance on uncertain out-of-state or foreign energy supplies.⁶⁰ States may also find that stringent targets enhance incentives to develop green

⁵⁰ Professors Engel and Orbach describe the desire for a "warm glow" as one explanation for state and local climate change initiatives that otherwise appear irrational. Engel & Orbach, *supra* note __, at 129-30. States could also seek to attract residents and businesses by creating a reputation as an environmentally responsible state. See Barry G. Rabe, Mikael Román, & Arthur N. Dobelis, *State Competition as a Source Driving Climate Change Mitigation*, 14 N.Y.U. L. REV. 1, 20-21 (2005)

⁵¹ See Andreen, *supra* note __, 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 Right of States*, *supra* note __, at 11; Rabe *et al.*, *supra* note __, 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).

⁵² See Andreen, *supra* note __, at 290-92; UNITED STATES GLOBAL CLIMATE CHANGE PROGRAM, *supra* note __, at 149-52.

⁵³ UNITED STATES GLOBAL CLIMATE CHANGE RESEARCH PROGRAM, *supra* note __, at 89-91.

⁵⁴ *Id.* at 41-52.

⁵⁵ See Andreen, *supra* note __, at 289-90; UNITED STATES GLOBAL CLIMATE CHANGE RESEARCH PROGRAM, *supra* note __, at 92-94.

⁵⁶ UNITED STATES GLOBAL CLIMATE CHANGE RESEARCH PROGRAM, *supra* note __, at 71-78.

⁵⁷ See Kirsten H. Engel & Barak Y. Orbach, *Micro-Motives and State and Local Climate Change Initiatives*, 2 HARV. L. & POL'Y REV. 119, 120 (2008). 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 __, at 23.

⁵⁸ California predicts that implementing its climate change law will produce net economic benefits. See CALIFORNIA AIR RESOURCES BOARD, CLIMATE CHANGE SCOPING PLAN: A FRAMEWORK FOR CHANGE ES-10-11; 73-79 (2008). ; cf. ANDREEN ET AL., *supra* note __, at 8-9 (noting state interest in more stringent environmental laws to attract green business); NACAA, *Preserving the Right of States*, *supra* note __ at 11

⁵⁹ See CALIFORNIA AIR RESOURCES BOARD SCOPING PLAN, *supra* note __, at 75 (predicting economic benefits as a result of increased energy efficiency).

⁶⁰ See Rabe *et al.*, *supra* note __, at 18, 28-32.

technology, both in the energy efficiency and the alternative energy sectors, providing new economic and job opportunities for the state.⁶¹ 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,⁶² 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 may result not only from that state's general political leanings, but be a consequence of the state's strong green technology sector (providing economic benefits) and its relatively minor reliance on coal (reducing economic costs). Differing 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 may differ from the "least common denominator" that may be all that is achievable at the federal level.⁶³ If federal legislation does not permit states to set more stringent caps, it will prevent states (and their citizens) from giving expression to their political views. As Professor Kirsten Engel has stated: preempting state controls would "cut[] short the lawmaking process and products of an entire level of democratic government."⁶⁴

The "democratic will" argument begs the question of whether states should be allowed to set goals or caps that are less stringent than federal goals and caps.⁶⁵ 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, states face.⁶⁶

⁶¹ ANDREEN ET AL., *supra* note __, at 8-9 (noting state interest in more stringent environmental laws to attract green business); CALIFORNIA AIR RESOURCES BOARD SCOPING PLAN, *supra* note __, at ES-11; Engel & Orbach, *supra* note __, at 135; Rabe *et al.*, *supra* note __, at 26-28 (observing agricultural opportunities created by climate policies) and 37-41 (describing green technology opportunities). NACAA, *Preserving the Right of States*, *supra* note __ at 11

⁶² See NACAA, *supra* note __, at 12; NACAA, *Preserving the Right of States*, *supra* note __, at 10

⁶³ 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 __, at __.

⁶⁴ Engel, *supra* note __, at 184.

⁶⁵ See Buzbee, *supra* note __, at 1581, 1586. Some states have strongly resisted climate initiatives. See Rabe, *supra* note __, at 11.

⁶⁶ See Rabe *et al.*, *supra* note __, 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).

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. First, from a democratic perspective, a federal floor could enhance rather than repress state democracy.⁶⁷ Without a federal minimum, states risk a “race to the bottom” that undermines state decision-making.⁶⁸ 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 thus 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 therefore has the capacity to serve, rather than frustrate, the states’ democratic expression.⁶⁹ While a “race to the bottom” is not inevitable, requiring states to abide by a federal minimum prevents its emergence.

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.⁷⁰ 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.⁷¹ Climate change presents a classic tragedy of the commons.⁷² States are likely to face most of the costs of controlling stationary sources but must share the benefits – at least the benefits of reducing GHGs⁷³ - with the rest of the globe. As a corollary, because states do not experience all of the adverse consequences of their emissions, emissions that impact the globe, they are unlikely to take sufficient action to control emissions. Many states’

⁶⁷ States participating in a conference on the relative role of the federal government and the states stressed the importance of minimum federal requirements. NACAA, *supra* note __, at 13.

⁶⁸ See Buzbee, *supra* note __, 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); Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570, 603-04 (19__); Glicksman & Levy, *supra* note __, at 597-98; Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1211-12 (1977)

⁶⁹ See Buzbee, *supra* note __, at 1580; Kaswan, *Cooperative Federalism*, *supra*, note __, at 799.

⁷⁰ 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).

⁷¹ I and others have described how these collective action impediments justify floor preemption. See Buzbee, *supra* note __; Glicksman & Levy, *supra* note __, at 616-17; Kaswan, *Cooperative Federalism*, *supra* note __, 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 __, at 1227.

⁷² Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968).

⁷³ 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 __ to __ (discussing benefits of climate change regulation).

individual cost/benefit analyses are likely to result in less stringent targets than are environmentally necessary, since the states are unlikely to internalize the consequences imposed upon other states and nations.⁷⁴ 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 underregulate. Allowing states to set regulatory targets below the federal minimum could thus seriously undermine the nation's collective effort to reduce emissions.

III. Mechanisms for Achieving More Stringent Caps

If there are advantages to allowing states to achieve more stringent carbon reduction goals, then a key issue is *how* they could achieve their goals. To achieve a more stringent long-term reduction goal, a state would want to exercise control over sources that are within the parameters of a federal cap-and-trade program. While a state could achieve important reductions from land use efforts to reduce vehicle-miles-travelled, building codes, or efforts to promote 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.

A critical issue for allowing states to set more stringent caps is not just the state's ability to set more stringent long-term goals and annual caps, but their ability to make the state goals effective by preventing facilities in other states from using the "extra" allowances generated by more stringent states. This section considers the need for allowance retirement and then outlines several potential decentralization forms through which states could achieve stringency and retire allowances. That analysis will provide a basis for visualizing how stringency could be achieved and for assessing the possible adverse consequences of such state 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, a state has more control over the achievement of its more demanding goals: it simply sets its local ambient environmental goals and then imposes restrictions on in-state facilities to meet the goals.⁷⁵ In a national trading program, in contrast, the states are linked through the trading program, so that one state's actions could have ripple effects throughout the system. Given these interdependencies, a state cannot effectively implement its more stringent goal 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

⁷⁴ Engel & Orbach., *supra* note __ at 120-21; Rabe *et al.*, *supra* note __, at 7.

⁷⁵ *Cf.* Glicksman & Levy, *supra* note __, at 604 (noting that states imposing more stringent environmental standards on in-state facilities generally do not cause negative external impacts on other states).

reductions achieved within the state by those sources would simply free up more allowances for out-of-state sources, erasing the impact of the state's greater stringency.⁷⁶ For example, using a greatly oversimplified hypothetical, assume that a federal cap-and-trade program allocated 10,000 allowances, on the assumption that each state would use 200. Assume that a state imposed its own cap of 100, not 200, tons of emissions – that the state established a cap that was twice as stringent as the federal cap. Assume that the state then established additional requirements on in-state facilities to increase reductions. As a consequence of the state restrictions, in-state facilities would use 100 less allowances. But in a federal allowance market, the allowances would then simply be available for use by facilities in the other 49 states. 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: it would experience the additional costs of reducing emissions without generating any GHG reduction benefits, in-state or out. In addition, in-state sources would be disadvantaged relative to out-of-state sources, since 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 their more stringent state caps and the proportion of the federal cap associated with the states' emissions, states will be unable to achieve more stringent state caps by imposing additional requirements on in-state facilities covered by the cap.⁷⁷ 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.

B. Potential Forms of Decentralization

In order to visualize mechanisms for achieving state stringency and to evaluate its potential impacts, it is necessary to identify the forms in which that stringency, and associated allowance retirement, could be realized. To maintain a manageable set of variables, this section articulates certain assumptions about potential state roles. It does not pretend to canvass the full range of options, but is instead intended to help policymakers visualize how stringency could be achieved and the primary issues that could arise. After introducing the basic models, this section will analyze how stringency could be achieved under each one.

⁷⁶ See Andreen, *supra* note __, at 294-95; Farber, *supra* note __, at 918-19; Glicksman & Levy, *supra* note __, at 645; House Committee on Energy and Commerce, *supra* note __, at 15; Kaswan *Cooperative Federalism*, *supra* note __, at 831; LITZ, *supra* note __, at 29; Meghan McGuinness & A. Denny Ellerman, *The Effects of Interactions Between Federal and State Climate Policies*, ALI-ABA Continuing Legal Education, Clean Air: Law, Policy, and Practice 175,199 (2008).

⁷⁷ Cf. Andreen, *supra* note __, at 295 (noting that a state's more stringent goal could be made effective if the state could retire federal allowances in proportion to its expected reductions); Farber, *supra* note __, at 918 (same).

1. “Light” Decentralization

Federal legislation could give the states the option of setting a more stringent cap and establishing stationary source or other standards that exceed federal standards or goals. The Clean Air Act follows this model. It specifically allows states to set more rigorous ambient air quality goals and to set more stringent source requirements than are set by the federal government.⁷⁸

2. “Medium Decentralization”

Like the “light” option, the second decentralization option would allow states to set more stringent caps and facility standards. In addition, it would give states the authority to impose restrictions on in-state facilities’ use of federally distributed allowances and offsets. States could, in essence, create a separate compliance program, requiring in-state facilities to comply with state as well as federal requirements. They could require facilities to reduce GHG emissions directly, or require them to submit federal allowances pursuant to *state* rules. For example, and as discussed further below, states might require facilities 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.⁷⁹

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 a willing states⁸⁰ and then allow them to distribute the federal allowances within their jurisdiction. Most large-scale domestic trading programs follow this model, though perhaps by necessity rather than choice.⁸¹

⁷⁸ 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.

⁷⁹ 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.” Waxman-Markey § 334.

⁸⁰ 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 __, 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.

⁸¹ 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 NAAQS have had to give significant authority to the states since the federal government lacks the authority to impose its own requirements. See *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).

Proposed federal legislation under consideration at the time of this writing does 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.⁸² The Article also assumes that regional trading programs, like the Regional Greenhouse Gas Initiative and the Western Climate Initiative, would be replaced by nationwide trading.⁸³ I exclude these options in part to create a more manageable set of state/federal dynamics to consider and, in part, because of the assumption (potentially misplaced) that separate state or regional programs would be less politically desirable and viable than the forms of decentralization suggested in this Article.⁸⁴ 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.⁸⁵

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 an additional mechanism 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 retiring the extra allowances.

⁸² For an analysis of the implications of co-existing state and federal cap-and-trade programs, see McGuinness & Ellerman, *supra* note __, at 198-206.

⁸³ 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.

⁸⁴ 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 __, 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.

⁸⁵ Waxman-Markey § 861.

1. Achieving State Stringency Solely Through Allowance Retirement

If the federal government distributed allowances for free, the state could establish its more stringent goals and the emissions reductions expected from its stationary sources to achieve its goals. To retire the extra allowances, however, the state would have to rely on the federal government. Federal legislation could require the relevant federal agency to distribute fewer allowances to facilities within the more stringent state in proportion to that state's more stringent annual cap and 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. 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. Alternatively, as was proposed in 2008 federal legislation,⁸⁶ the federal government could give states some federal allowances and allow them to retire them. As with direct federal retirement of the allowances prior to sale, allowing states to retire the 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 would have the option of achieving more stringent state goals themselves by imposing direct GHG emission reduction requirements, like efficiency standards or production process requirements, on covered facilities.⁸⁷ If regulatory requirements were used to achieve

⁸⁶ See Lieberman-Warner Climate Security Act of 2007 (S. 2191), § 3403; LITZ, *supra* note __, at 31 (describing option). 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.

⁸⁷ Most of the existing climate policies propose to control industrial sources through a cap-and-trade rather than a regulatory approach. 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. Waxman-Markey, Title III (establishing cap-and-trade program for most sources), Waxman-Markey § 811 (requiring regulatory GHG standards for uncapped stationary sources). The Regional Greenhouse Gas Initiative establishes a trading program, not a regulatory approach. See *Regional Greenhouse Gas Initiative Fact Sheet*, http://www.rggi.org/docs/RGGI_Executive%20Summary_4.22.09.pdf, (April 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 July 22, 2009) (describing cap-and-trade as the centerpiece of the regional GHG reduction strategy); MIDWESTERN GREENHOUSE GAS ACCORD (2007), available at <http://www.midwesternaccord.org/midwesterngreenhousegasreductionaccord.pdf> (describing midwestern states' intent to create a GHG trading program). Except for certain controls for fugitive emissions and

stringency, then the regulated facilities would generate fewer emissions than presumed under the federal system. Under the light decentralization model, federal legislation would have to create an additional mechanism for retiring the extra allowances. The options for the federal role would be the same as in the “no regulation” scenarios described above, but the consequences of federal retirement would differ.⁸⁸

If the federal government freely distributed allowances, then the in-state facilities would receive more allowances than they need in light of the state regulatory restrictions. Federal legislation would have to require the federal government 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.⁸⁹

If the federal trading program instead auctioned allowances, regulated in-state facilities would demand fewer allowances than anticipated. To avoid having the extra allowances go to facilities in other states, the federal government would have to withhold the additional reductions achieved by state regulation from the national allowance pool and retire them. Alternatively, the federal government could give the extra allowances to the state and let the state retire them. The consequences of this scenario differ from the no-regulation scenario. In the no-regulation scenario described above, the federal government would simply withhold allowances from the federal auction in proportion to a state’s more stringent goals, without any expectation that facilities in the more stringent state would assume the reduction burden. In this scenario, in contrast, the more stringent state’s regulations would have required additional reductions from in-state facilities. The federal government’s withholding and retiring of the extra allowances would simply be accounting for the extra reductions already made in the more stringent state.

Thus, under the light decentralization model, states could set more stringent goals and annual caps, but federal legislation must create a mechanism for retiring the block of allowances associated with the state’s 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.⁹⁰

required energy efficiency audits, California intends to rely primarily upon a cap-and-trade program to control industrial sources. CALIFORNIA AIR RESOURCES BOARD SCOPING PLAN, *supra* note __, 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*, *supra* note __, at 290.

⁸⁸ The consequences on the national allowance market are described *infra*, notes __ to __ and accompanying text.

⁸⁹ See McGuinness & Ellerman, *supra* note __, at 202.

⁹⁰ See Farber, *supra* note __, at 918 (observing that states are likely to want the power to control trading in order to effectuate real emission reductions); NACAA, *Preserving the Right of States*, *supra* note __, at 13 (stating that federal legislation could give states the power to retire allowances from sources within their jurisdiction).

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, but it would have additional options for retiring allowances. The medium decentralization model would also give a state the option to use market mechanisms, rather than regulatory standards, to achieve 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 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 levels assumed by the federal government. If the federal government distributes allowances for free, the facilities would therefore 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.⁹¹ The same result could be achieved by prohibiting facilities from selling the extra allowances.

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 be required to submit, say, 1.25 allowances for every ton of emissions, thus leading facilities to buy more allowances on the market than they otherwise would have. (In this case, the facilities would bear the cost of retiring the extra allowances.⁹²) Under this

⁹¹ The equivalent result could be achieved by prohibiting the entity from selling allowances that result from the state's regulations. Requiring the facility to retire the allowances to the state and prohibiting their sale would have the same result. 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 the state's limitations preempted and prohibited by federal law. *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 protect such state limitations from similar challenges.

⁹² 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 its scope.

model, a state would achieve greater stringency through regulation and retire allowances by controlling its facilities' use of federal allowances.

2. Achieving Stringency through Market Mechanisms

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.⁹³ That approach would lead to greater 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.⁹⁴ A state could use this mechanism whether the government distributed allowances for free or by auction.⁹⁵ 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,⁹⁶ 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 state's emissions budget. The state could set its more stringent goal and either impose regulations to achieve it or not. Before distributing the federal allowances within the state, the more stringent state could retire the allowances associated with regulation, if the state regulates. If the state does not choose to regulate, the state could simply withhold the proportion of allowances necessary to meet its more stringent goal.⁹⁷

IV. The Potential Drawbacks to Allowing Greater State Stringency

⁹³ Cf. McGuinness & Ellerman, *supra* note __ at 205 (noting that states could require in-state source to submit more federal allowances than normally required). If federal allowances are auctioned rather than distributed for free, these facilities will face relatively high costs.

⁹⁴ See House Committee on Energy and Commerce, *supra* note __, 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”).

⁹⁵ 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.

⁹⁶ See *supra* note __ and accompanying text (detailing state preference for cap-and-trade).

⁹⁷ See House Committee on Energy and Commerce, *supra* note __, at 15 (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 __, at 29 (describing same scenario); NACAA, *Preserving the Right of States*, *supra* note __, 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 __, at 183.

A. Impacts on the National Allowance Market

The most significant potential drawback to allowing states to set more stringent reduction goals is the extent to which a state's efforts could impact the national allowance market and, therefore, facilities in other states. Because a national trading program links the states, some of the mechanisms described above would have external effects.

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

If federal legislation does not create mechanisms to retire the excess federal allowances associated with more stringent state programs, not only will the state efforts to be more stringent fail, but the extra allowances are likely to depress national allowance prices.⁹⁸ Cheaper is not always better. If allowance prices are too low, then they will not create incentives for industries to adopt measures to reduce emissions.⁹⁹ Low allowance prices would also fail to create a market signal to stimulate new technology innovation, innovation that is justified only if a market for the new technology appears financially viable.¹⁰⁰ Low allowance prices would have little impact on energy prices and would therefore fail to create market signals for lowering consumer energy demand through energy-efficiency and alternative energy investments.¹⁰¹

2. 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 have external impacts. A critical issue for determining the external impact if allowances are retired is whether the state uses regulation or market mechanisms to achieve its more stringent goal. The choice of

⁹⁸ See Glicksman & Levy, *supra* note __, 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 __, at 199 (observing that more stringent state standards could lead to less demand for federal allowances and lower federal allowance prices), 205 (observing that allowing states to retire federal allowances would prevent states' more stringent programs from depressing national allowance prices). The risk of depressed prices could also be addressed by a federal price floor that sets a minimum price for allowances.

⁹⁹ See McAllister, *The Overallocation Problem*, *supra* note __, at 419.

¹⁰⁰ 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, *The Overallocation Problem*, *supra* note __, at 422. While low allowances 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.

¹⁰¹ See MARILYN A. BROWN, ET AL., BROOKINGS INST., SHRINKING THE CARBON FOOTPRINT OF METROPOLITAN AMERICA 26 (2008) (noting study that showed that higher energy prices lead to less per capita electricity 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 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).

decentralization model – whether light, medium, or heavy – appears less relevant, and primarily implicates *how* allowances would be retired. The discussion below begins with the options having the least impact and progresses to those having the most.

b. No 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 not be any impact on the national allowance market. All of the reductions would be made in-state. Assuming the amount retired matches the extra amount reduced, there should be no impact on the supply of allowances to facilities in the rest of the nation and, as a consequence, no impact on national allowance prices.

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

If the federal government or the state uses market mechanisms to achieve greater stringency and retire allowances (by having the federal government or the state distribute fewer allowances to facilities in the more stringent state, or by a state requiring its facilities to submit more federal allowances per unit of emissions) then most of the impact would be felt by in-state facilities but there could be some external impact. In order to avoid the cost of purchasing allowances, facilities receiving fewer allowances or required to submit extra allowances are likely to reduce emissions by more than they otherwise would have. They could, however, respond to the fewer allowances or heightened submission requirements by buying more allowances. That increased demand for allowances could increase allowance prices for facilities nationwide.¹⁰² While the in-state facilities would bear the brunt of the state's stringency, since they would have to reduce by more or buy more allowances, the likelihood that they would purchase more allowances could thus impact the national market. A critical factor is likely to be the proportion of high-cost emission reducers in the state. The more high-cost emission reducers in the state, the more likely they are to buy allowances than reduce emissions. The more low-cost emissions reducers in the state, the more likely they are to reduce emissions rather than buy allowances, lessening 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, and hence difficult to predict the extent of the out-of-state impact.

c. High Impact: Allowances Retired Prior to Auction

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 that the reductions are made by facilities in the more stringent state. That approach would reduce the nation's allowance

¹⁰² See McGuinness & Ellerman, *supra* note __, 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).

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.

d. Impacts Organized by Decentralization Model

Since the extent of the out-of-state impacts does not track the use of the light, medium, or heavy decentralization models, it may be useful to identify the extent of the impact on the national allowance market from each of the mechanisms available under the light, medium, and heavy decentralization models. The tables below identify the impact of the retirement mechanisms available under each decentralization model.

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	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	None
Regulation	Auction	Feds retire allowances before auction	None
Regulation	Auction	Feds give states allowances and states retire prior to sale	None

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	None
Regulation	Auction	State requires in-state facilities to submit higher ratio of allowances to emissions	None
No Regulation	Free Distribution	State requires in-state facilities to submit higher ratio of allowances to emissions	Medium
No Regulation	Auction	State requires in-state facilities to submit higher ratio of allowances to emissions	Medium

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	None
No Regulation	N/A	State withholds extra allowances prior to distributing or auctioning them	Medium

B. External Impacts: Higher Costs Associated with Greater Stringency

Even if most of the economic impact of a state's greater stringency is imposed on in-state facilities, higher costs in one state could have indirect impacts on costs in other states.¹⁰³ 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. More stringent requirements on manufacturers could impose higher costs on out-of-state purchasers.

C. Uniformity

A common industry concern with state autonomy is its potential impact on national uniformity.¹⁰⁴ 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. Different requirements in different states could make compliance efforts more complicated for national and multinational companies.¹⁰⁵ As or more significantly, under most of the scenarios described above, facilities in more stringent states are likely to incur higher costs because they would have to either pay for additional emission reductions or for additional allowances (with their flexibility to choose between these options dependent upon the state's chosen mechanism for achieving a more stringent cap¹⁰⁶). That could place facilities in stringent states at a competitive disadvantage in national markets.¹⁰⁷

Another potential consequence of nonuniform 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.¹⁰⁸ Leakage would negate a state's effort to achieve stringency because the efforts to achieve stringency would simply shift the location of the emissions to a less regulated state. While the state might meet its own more stringent target, the state's regulation would not have contributed to a net drop in emissions.

¹⁰³ See Andreen, *supra* note __, at 294.

¹⁰⁴ See HOUSE COMMITTEE ON ENERGY AND COMMERCE, *supra* note __, at 2 (observing that "[i]ndustry is often interested in Federal legislation to avoid or replace a patchwork of State regulations"); Andreen, *supra* note __, at 292-93 (describing argument); DeShazo & Freeman, *supra* note __, at 1530-31.

¹⁰⁵ See Andreen, *supra* note __, at 292-93 (describing argument).

¹⁰⁶ 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.

¹⁰⁷ See LITZ, *supra* note __, at 12 (describing industry concern that state climate change policy could create an uneven playing field).

¹⁰⁸ See Jonathon B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. PA. L. REV. 1961 (2007) (providing detailed analysis of leakage risks); Adelman & Engel, *supra* note __, 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.¹⁰⁹ If a state establishes regulatory requirements or requires facilities to submit federal allowances to the state, then both state and federal administrative resources will be implicated. And, unless federal legislation delegates compliance and enforcement responsibility to the states, facilities would have to demonstrate compliance at both the state and federal levels.

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.¹¹⁰ 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 in light of actual emissions. 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 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 more stringent environmental goals and standards. Many states have GHG emissions as large or larger than entire nations.¹¹¹ Precluding them from achieving more stringent GHG emission reductions 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.

¹⁰⁹ See HOUSE COMMITTEE ON ENERGY AND COMMERCE, *supra* note __, at 11 (noting that “[m]ore stringent State programs might ... increase the governmental ... resources needed to achieve the necessary reductions”).

¹¹⁰ See *supra* notes __ to __ and accompanying text.

¹¹¹ See PEW CENTER ON GLOBAL CLIMATE CHANGE, CLIMATE CHANGE 101: STATE ACTION 1 (2009).

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 volume, if the federal program is sufficiently stringent, then states would be unlikely to take more aggressive action.¹¹² More stringent caps are likely to impose an economic disadvantage on a state's existing utilities and industries.¹¹³ States are unlikely to impose such impacts unless the state believes that the alternative – the federal system - is unacceptable. Nor are the economic benefits states might hope to reap from climate policy likely to prompt more stringent state regulation so long as the federal government's cap is sufficient.¹¹⁴ For example, California anticipates substantial cost savings from energy efficiency.¹¹⁵ 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. States that hope to lead the nation in green technology are unlikely to consider 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.¹¹⁶ Thus, the primary situation in which states are likely to impose more stringent goals is if 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. 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.¹¹⁷ In general, the states have not exercised that discretion with regard to ambient air quality goals.¹¹⁸ 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, states exercised their prerogative and adopted their own approach: more stringent direct regulation of mercury sources.¹¹⁹ As Professor Flatt has

¹¹² See Flatt, *supra* note __ [cite to article in symposium volume]

¹¹³ See Flatt, *supra* note __, at 8-9 [of draft article in this volume]

¹¹⁴ See *supra* notes __ to __ (discussing potential economic benefits of climate change).

¹¹⁵ See *supra* note __.

¹¹⁶ Cf. Glicksman & Levy, *supra* note __, 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 __, at 32-33.

¹¹⁷ 42 U.S.C. § 7416.

¹¹⁸ See Flatt, *supra* note __, at [7-8 of draft]

¹¹⁹ Steven D. Cook, *23 States Pursuing Stricter Mercury Controls than Required under EPA Clean Air Rules*, 37 ENVIRONMENT REPORTER 2381 (Nov. 24, 2006). The EPA program the states found insufficient

documented, similar state regulation emerged for other hazardous air pollutants when the federal government was slow to regulate.¹²⁰ 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 adequately, states are likely to defer to the federal program.

2. The Relative Significance of Adverse Impacts

To the extent that states do exercise the option to be more stringent, it is important to address the drawbacks to such action. 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.

Professors Glicksman and Levy have suggested that external consequences are a critical factor in determining whether preemption is appropriate. They state that: “The case for displacing state regulatory authority is strongest with respect to those areas in which each state has incentives to make regulatory decisions that serve the state’s own interests while damaging the interests of the collective.”¹²¹ As Professors Glicksman and Levy note, a key concern is not only external impacts in the abstract, but that a state’s ability to externalize the costs of state regulation will lead states to overregulate: that they will regulate more heavily than would be optimal if they do not experience the full costs of their regulation.¹²² Where states experience most of the costs and therefore do not have an incentive to overregulate, but nonetheless impose some external impacts, Congress must consider the difficult tradeoff between the regulating state’s interests and the extent and likelihood of external impacts.¹²³

These observations lead to certain conclusions. First, 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

has since been invalidated. *See* *New Jersey v. Environmental Protection Agency*, 517 F.3d 574 (D.C.Cir. 2008).

¹²⁰ *See* Victor B. Flatt, *Gasping for Breath: The Administrative Flaws of Federal Hazardous Air Pollution Regulation and What We Can Learn From the States*, 34 *ECOL. L. Q.* 107, 122-61 (2007)

¹²¹ Glicksman & Levy, *supra* note __, at 602. *See also* House Committee on Energy and Commerce, *supra* note __, at 23.

¹²² *Id.* at 638 (suggesting that ceiling preemption “is not justified unless there are collective action problems that create incentives for states to overregulate”).

¹²³ Such difficult tradeoffs frequently arise in the context of product standards imposed on out-of-state producers, where the states imposing the more stringent standard experience the higher costs of the products, which lessens their incentive to overregulate, but are not directly accountable for the external costs on the out-of-state industries experiencing the direct costs of complying with the state’s product standard. *See* Butler & Macey, *supra* note __, at 47.

stringency through regulation, since regulatory approaches would most reduce the regulated facilities' demand for allowances and have the most significant negative impact on allowance prices.¹²⁴

Second, concerns about external impacts do not justify limits on letting states achieve more stringent goals through regulation coupled with allowance retirement, since that approach should not impact the national allowance market. Under a regulatory approach, all of the extra reductions would be made in the more stringent state, and the retired allowances would simply account for the reduction in demand from the more stringent state.

Third, although the resolution is more difficult, states should also have the option of achieving their greater stringency through market mechanisms, like having federal or state governments distribute fewer allowances or having the state require facilities to submit more allowances. In those instances, some external impacts on the national allowance market could occur if the facilities choose to purchase additional allowances rather than achieving greater stringency solely through emission reductions.

The benefits 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.¹²⁵ Nonetheless, most states and the federal government are relying principally on market mechanisms rather than regulatory approaches to control stationary source GHG emissions.¹²⁶ Industry appears more willing to accept market mechanisms than regulatory strategies, creating a greater possibility of political consensus around market approaches.¹²⁷ Government regulators may seek to avoid the uncertainty, time, and potential litigation that could be associated with regulatory approaches,¹²⁸ and prefer to simply set a cap and require facilities to adjust emissions accordingly. If properly designed, market mechanisms could also create long-term transformative incentives that go beyond the end-of-the-pipe approach that most regulations have achieved.¹²⁹ While this is not the place to evaluate the difficult

¹²⁴ 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 stringency on the national allowance market.

¹²⁵ See Alice Kaswan, *Environmental Justice and Domestic Climate Change Policy*, 38 ENVTL. L. REP. NEWS & ANALYSIS 10287, 10304-05.

¹²⁶ See *supra* note ___ and accompanying text (describing current reliance on cap-and-trade).

¹²⁷ 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 ___, at ___.

¹²⁸ 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, *Beyond Playing Banker*, *supra* note ___ (suggesting that trading programs are not necessarily more administratively efficient than traditional regulatory programs).

¹²⁹ Market advocates frequently refer to the technology innovation incentives created by market mechanisms. See e.g., *id.* at 1336, 1349-50 (describing innovation incentives). This assertion is also not

policy choice between regulatory and market mechanisms, it is clear that precluding states from achieving stringency through market mechanisms due to potential external impacts on the national allowance market 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 the in-state facilities would experience a significantly greater impact than out-of-state facilities, the risk of over-regulation is low, lessening the potential adverse consequences of the external costs.¹³⁰ Moreover, as discussed above, states are unlikely to reap enough sufficiently discrete benefits from more stringent caps to be tempted to set more stringent caps without good cause. I argue that the importance of allowing states to be more stringent, and the likelihood that states would want the flexibility to use market mechanisms, not just regulation, to achieve more stringent goals, justifies the potential impact of such mechanisms on the national allowance market.

Finally, the primary motivation for states setting more stringent goals is likely to be the insufficiency of federal goals. In that case, the state is, in fact, serving a federal interest in achieving a higher level of reductions than was politically achievable in Congress. If the nation as a whole benefits from an individual state's greater stringency, then the presence of some external impacts is of somewhat less concern than in those instances when the state's more stringent regulations benefit only the more stringent state.

Fourth, the mechanisms that fully externalize the costs of state stringency present a greater cause for concern than other mechanisms. 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 goal from the national allowance pool, then the entire nation would experience the costs, in the form of reduced allowances and higher allowance prices, 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. Even so, it is not clear that such a mechanism should be ruled out. While a state taking such a step would not incur state-specific costs, it is also unlikely to experience significant economic gains, or at least tangible enough gains to prompt such a step,¹³¹

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 expensive technology).

¹³⁰ See *supra* notes ___ to ___ and accompanying text; Butler & Macey, *supra* note ___, 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); House Committee on Energy and Commerce, *supra* note ___, 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, *Cooperative Federalism*, *supra* note ___, at 802-03.

¹³¹ 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

unless the federal program is insufficient. If a state is making up for the failure of the federal program, then federal impacts are somewhat less troubling than if the state were simply serving its own interests at the expense of the rest of the nation.

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.¹³² There are also a significant number of "brakes" on a state's imposing requirements that would have such external impacts. Where a state imposes cost-increasing requirements on its facilities, it will be accountable to both its manufacturing sector and its consumers. That provides a bigger brake than exists in the product standard context, where a state is not accountable to out-of-state manufacturers. The risk of "over-regulation" is thus mitigated. In addition, states are likely to fear leakage. 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

Industry concern about non-uniform environmental requirements on stationary sources does not present a novel issue; existing environmental laws create the same risk. Uniformity is a legitimate concern, but not determinative.¹³³ Critical questions include the extent of the burden imposed by the lack of uniformity and the reasons justifying differentiation.

The potential burden of complying with different standards in different states is typical and well-accepted under the nation's primary pollution control statutes. Most existing environmental laws embody a cooperative federalist approach that prioritizes state autonomy over the value of national uniformity, particularly for stationary source standards.¹³⁴ For example, in the air pollution context, states retain the power to impose

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 __ 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.

¹³² *See* Andreen, *supra* note __, at 294.

¹³³ *See* Kaswan, *Cooperative Federalism*, *supra* note __, at 802 (stating that "[c]onsistency is an important, but not necessarily determinative, factor" in determining the balance between federal and state power).

¹³⁴ *See* Andreen, *supra* note __, at 293-94; Glicksman & Levy, *supra* note __, at 616, 635-36. As Professors Glicksman and Levy note, "concerns 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. *Id.* at 293.

more stringent air pollution controls on stationary sources¹³⁵ and, under Title V of the CAA, the states, not the federal government, generally negotiate specific permitting requirements (pursuant to federal requirements and any more stringent state requirements).¹³⁶ The Clean Air Act itself establishes differentiated facility standards based on a region's attainment versus nonattainment status.¹³⁷ The administrative burden of negotiating standards at the state level and potentially having to comply with somewhat different standards in different locations has long been considered an acceptable burden.¹³⁸

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 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 potentially 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.

Assuming that the adverse consequences of non-uniform regulations are ones that have traditionally been acceptable, the next issue is the power of the justifications for a non-uniform approach. While not quite the same as the justifications for traditional pollutants, since the relationship of GHG emission controls to local impacts is more indirect, the need for a state safety net in the face of potential federal failure and the importance of state autonomy to meet a state's own political objectives justify letting states establish non-uniform caps.

The leakage risk presented by non-uniform standards does not present 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 – then the states are unlikely to impose more stringent limits on stationary sources. The leakage concern presents a reason why states are unlikely to be more stringent. That concern does not justify precluding states from being more stringent where they believe their requirements could be effective.

¹³⁵ 42 U.S.C. § 7416.

¹³⁶ See 42 U.S.C. §§7661-7661f. [confirm cite]

¹³⁷ See *supra* note __ (describing different technology-based standards in attainment and nonattainment areas)

¹³⁸ See ANDREEN *et al.*, *supra* note __, at 2 (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”) and 16.

d. Administrative Efficiency

As discussed above, duplicative federal and state roles create certain governmental inefficiencies. The question is whether the political and environmental advantages of allowing state control justify potential duplication and a somewhat greater use of collective government resources than would otherwise be the case.¹³⁹ States' strong interest in a trading program's stringency provides them with compelling justifications for asserting their own controls. In addition, overlapping jurisdiction's inherent advantages – the greater resilience it offers to changing circumstances,¹⁴⁰ and as an antidote to regulatory stagnation¹⁴¹ – help counter the negative features of non-uniform and duplicative regulation.¹⁴² Ultimately, the federal government could also consider delegating compliance and enforcement functions to willing states, thereby avoiding duplicative compliance demonstrations.

VI. Implications for Federal Legislation

The analysis presented here suggests not only that allowing states to be more stringent is justified, but that there are a number of acceptable mechanisms by which that stringency could be effectively achieved. This Article does not provide a final recommendation on the most appropriate mechanism. It does, however, argue that the most significant concern is potential impacts on the national allowance market, and provide certain observations on that score. I argue that a state's use of regulatory mechanisms to achieve stringency, combined with allowance retirement, is fully acceptable since such mechanisms do not adversely impact the national allowance market. I also argue that states should be permitted to use market mechanisms, like requiring more allowances per ton of emissions, notwithstanding some impact on the national allowance market. I note, however, that the mechanisms having the most significant impact – that retire allowances from the national pool prior to auction – present a more significant cause for concern because the impact of greater stringency would be felt equally in- and out-of-state. I have addressed the primary federalism issues these mechanisms raise, but the choice of mechanism will require policymakers to consider additional factors like the relative burden on industry, potential impacts on state or federal auction revenue and the like.

The Article's analysis also has implications for the choice of a light, medium, or heavy decentralization model. That choice 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.

¹³⁹ See Glicksman & Levy, *supra* note __, at 607 (suggesting that “the question ... is” whether the regulatory burdens imposed by duplicative federal and state programs justifies preempting a state's ability to be more protective).

¹⁴⁰ See *supra* [where discuss engel/Adelman argument]

¹⁴¹ See *supra* [where discuss Buzbee agmt]

¹⁴² Cf. Glicksman & Levy, *supra* note __, at 607 (suggesting that “something more than ... general concerns for regulatory burdens should be necessary to warrant ceiling preemption”).

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.¹⁴³ 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 state's stringency on the nation rather than concentrating it within the more stringent state.

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 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.

The extent to which each of these decentralization models facilitates state stringency is an important factor in considering the appropriate decentralization model. It is not, however, the only relevant factor. The relative desirability of each decentralization model turns not only on the range of options they give states for achieving stringency, but on the additional state powers that each could enable. Future scholarship will address some of these additional implications and provide a fuller basis for assessing the value of the light, medium, and heavy decentralization models.

¹⁴³ 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 without adversely affecting that pool, since the reductions would already have been made in the more stringent state. However, if a state does not achieve its stringency through regulatory mechanisms and the federal government auctions allowances, then there does not appear to be a mechanism for retiring allowances that would not cause an unacceptable out-of-state impact, since having the federal government withhold the difference between the federal and state goals from the auction would impact facilities nationwide, without concentrating the impacts in the more stringent state.

Although I do not advocate for the adoption of any particular decentralization model in this Article, I note that, if federal legislation is designed to allow states to be more stringent, the state and federal authorities must be explicitly elaborated. As Professor Buzbee argues in this 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.¹⁴⁴

More specifically, if federal legislation follows a “light” decentralization model, federal legislation would have to create a mechanism for the federal government to retire associated allowances or for 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 risk preemption or Dormant Commerce Clause challenges.¹⁴⁵ 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.

Conclusion

Given the breadth of the 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.

¹⁴⁴ See William Buzbee, _____, [article in this symposium volume]; Robert L. Glicksman, *From Cooperative to Inoperative Federalism: The Perverse Mutation of Environmental Law and Policy*, 41 WAKE FOREST L. REV. 719, 787-92 (describing courts’ tendency 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 DEVELOPMENT L. & POL’Y 6, 9 (Winter 2008) (stating that courts would likely hold that federal climate legislation occupies the field of GHG regulation and therefore preempts state programs).

¹⁴⁵ See Buzbee, *supra* note __, at __ (to article in this volume)[?]; Farber, *supra* note __, 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 Right of States*, *supra* note __, at 13. For example, when New York State imposed restrictions on an in-state facilities ability to sell acid rain allowances to facilities in an upwind state, 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 __, at 646.