



FEDERALISM IN THE GREENHOUSE

Defining a Role for States in a Federal Cap-and-Trade Program

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INTRODUCTION

As the U.S. Congress debates policies to address climate change and considers enacting a national cap-and-trade program, lawmakers will have to consider the role that states should play in reducing greenhouse gas emissions, and the extent to which they should be encouraged to go beyond the reductions required by federal policy. Answering these questions will require balancing the benefits of preserving states' ability to innovate and spur reductions with the challenges that state-by-state regulation may create for some businesses. Finding the approach that draws on the unique strengths of each level of government will help ensure a more effective nationwide cap-and-trade program and a more cost-effective means for reducing emissions.

This policy brief presents options for balancing federal and state action within a future federal cap-and-trade program. It does not address specific mitigation policies states might use to achieve reductions. The brief will:

- Review arguments for action at the state and federal levels;
- Examine the law of federal preemption;
- Discuss the difficulties a federal cap-and-trade program could present for states seeking more aggressive reductions than those achieved in a federal program; and
- Provide specific options to enable state climate action while preserving the primary benefits of federal action.

The objective is to create a more effective and efficient system for reducing emissions by allowing each level of government to do what it does best.



EXECUTIVE SUMMARY

Defining a role for states within a federal cap-and-trade program will require balancing the benefits of preserving states' ability to innovate and spur emissions reductions with the challenges that state-by-state regulation may create for some businesses. Finding the approach that draws on the unique strengths of each level of government will help ensure a more effective nationwide cap-and-trade program and a more cost-effective means for reducing emissions. However, it requires expressly providing a mechanism for state action in the federal law.

This policy brief presents the competing arguments for state-led and federal-led climate legislation, and argues for a third—"hybrid"—approach that maximizes the strengths of each level of government. The authors argue that preserving space for state climate change action in a future federal cap-and-trade program will be necessary to achieve desired emissions reductions, and outline possible roles for states under a federal cap-and-trade program. Approaches such as these will allow for continued state innovation while also achieving substantial nationwide uniformity. Without such provisions, the federal government may unwittingly reduce or eliminate the incentive states have to implement strong policies that complement federal efforts.

UNDERSTANDING THE BENEFITS OF FEDERAL AND STATE ACTION

To maximize the strengths of both federal and state governments in a federal cap-and-trade program, it is important to understand the chief benefits of acting at each level.¹ With this understanding, policy makers can achieve consistency and broad coverage through federal action while also preserving state authority to contribute to solutions.

The arguments around whether particular policy matters should be handled by the state or federal governments are as old as the United States itself. These arguments have been applied to environmental regulations since the 1960s, when state-level regulations proliferated and calls for federal environmental policy action grew louder. This same dynamic is generating pressure on the federal government to enact federal climate policies to reduce greenhouse gas emissions.

The debate about who should have primary responsibility for environmental protection has at least three sides. There are those who argue that states are in the best position to govern matters that affect the safety and welfare of their citizens. Others maintain that all matters affecting interstate commerce should be handled at the federal level. A more recently emerging school of thought suggests that both of these perspectives have it wrong: environmental protection is best handled through a sharing of responsibilities between federal and state governments to maximize the benefits of acting at each level.² The competing perspectives are outlined below with specific focus on how each may be applied to a federal cap-and-trade program.

Benefits of State Action

States are well positioned to enact climate policies: they have the local expertise in the areas where emissions reductions are needed; they are historically policy innovators; and they serve as important first movers to spur federal action both before and after the federal government has acted.

State governments have considerable experience regulating sectors where climate change action is needed. These areas include electricity resource planning, energy efficiency and renewable energy policy, and land-use and transportation planning. States are also in the best position to address challenges and capture benefits unique to the state or geographical region. With respect to a cap-and-trade program, proponents might argue that because state governments are “closer to the ground,” they are in the best position to determine the most appropriate use of proceeds from an allowance auction, or to decide how allowances should be allocated.

States function as “laboratories of democracy” that innovate to design new policies, allowing other states and the federal government to follow or learn from these experiences. Providing incentives in a federal cap-and-trade program for state-by-state experimentation in policy design or implementation would preserve and promote this innovation.

In areas like climate change where federal action is highly desirable, state action can push the federal government to tackle new problems when political will or economic interests nationwide do not create the right context for action. This dynamic is already playing out as state and regional climate change action has preceded federal policies. Even after the federal government has acted to address a problem, states can still point the way for additional federal efforts by demonstrating that further reductions can be achieved cost effectively. In the cap-and-trade context, this ability to lead could be preserved if states are allowed enough space within the federal cap-and-trade program to devise and demonstrate effective emission reduction policies that the federal government might later incorporate.

Benefits of Federal Action

There are many arguments for implementing environmental policies at the federal level. Federal action provides a minimum level of uniformity for business, achieves broader results because it applies across all 50 states, and demonstrates U.S. leadership in international negotiations.

A policy implemented at the federal level can provide uniformity for those who conduct business across state lines. In the cap-and-trade context, multiple programs across the states and regions create a “patchwork” of policies leading to competitive disadvantages for some and advantages for others, and varied obligations for companies operating in multiple jurisdictions. A federal program allows for development of one centralized system, simplifying compliance for regulated entities across state boundaries.

Unlike the actions of one or a group of states, action by the federal government ensures that the policy covers the entire country. Relying solely on states to tackle a problem inevitably leaves gaps in coverage, and may result in “leakage” of emissions from regulated states to unregulated ones. Because tackling a particular environmental problem may be unpopular in a specific state or region of the country, the problem may never be addressed in some (potentially high-emitting) areas.

The current array of state and regional greenhouse gas cap-and-trade programs illustrate this problem. While many states have

acted, many have not, or have taken smaller steps to reduce emissions. The group of Northeast states that have designed and implemented the Regional Greenhouse Gas Initiative have opted to cover only power plants, while the regional efforts in the West and the Midwest will be broader.³ A federal cap-and-trade program could achieve more complete coverage across all states.

Cap and trade is perhaps best implemented at the federal level, because the larger the geographical and regulatory scope of a cap-and-trade program, the greater the potential that the emissions market will achieve cheaper reductions. This is especially important in the greenhouse gas context, because the overwhelming body of science demands deep reductions by mid-century. Success will depend on finding the policy mix that achieves the needed emissions reductions at the lowest possible cost.

Lastly, because greenhouse gas concentrations in the atmosphere are the result of emissions globally, the best U.S. policy is one that contributes to an international solution. Appropriate federal action will demonstrate leadership by the United States and help put U.S. negotiators in a position to achieve a fair and effective international agreement. A federal cap-and-trade program would also create an emissions “currency” that could be connected to a global emissions reduction market.

Benefits of Joint Action

Given the substantial benefits that come from state and federal action, it is appropriate to seek to maximize the benefits of both through a federal cap-and-trade program that preserves an effective role for states. Indeed, although the federalism question is most often presented as a clear choice between state or federal action, over the past half century most federal environmental policies have applied minimum uniform regulations across the country while simultaneously reserving substantial state authority to enact more stringent policies. Many federal programs have also granted states substantial leeway in choosing specific policy instruments to meet state-specific needs.⁴

This history demonstrates several benefits of a shared federal and state approach:

1. *National Scope.* A nationwide policy ensures some minimum level of action in all 50 states, and thereby ensures larger emissions reductions and a more robust program than state-by-state actions provide.
2. *Substantial but not Complete Uniformity.* A shared approach allows for substantial uniformity nationwide while preserving flexibility for states to tailor policies to

state-specific needs or goals. Given the federal nature of government in the United States, substantial but not complete uniformity is perhaps the best possible result.

3. *Preservation of States’ Ability to Innovate and Push Policy.* A federal policy that allows states to enact more stringent policies will preserve the state “laboratories of democracy,” as well as the states’ role as policy driver.
4. *Flexibility.* A shared approach that allows states significant flexibility in meeting minimum federal requirements should yield policies better adapted to specific state circumstances and interests. This flexibility allows states to use low-cost tools not available to the federal government to reduce emissions and energy demand and thereby lower the cost of achieving the federal cap.

In attempting to preserve key roles for states in an economy-wide cap-and-trade program while providing businesses with needed consistency, it is important to understand generally the law of federal preemption, as well as the specific technical challenges posed by a federal cap. These topics are addressed below, followed by a discussion of options in the context of a future federal cap-and-trade program.

THE LAW OF FEDERAL PREEMPTION: IMPLICATIONS FOR CLIMATE LEGISLATION

Federal preemption occurs when a federal law conflicts with a state law. The Supremacy Clause of the United States Constitution provides that federal law will govern in the case of such a conflict.⁵

Preemption of state law can occur in three distinct circumstances. First, through what is termed “express preemption,” a federal law preempts a state law when the federal statute explicitly states that states may not regulate in a particular area. When faced with an express preemption question, courts generally determine whether the challenged state law or regulation is of the type that Congress intended to preempt. This is a relatively straightforward question when the statutory language is clearly drafted.

Second, through what is referred to as “implied preemption,” a state law may be deemed preempted if it directly conflicts with or frustrates the federal law. Preemption by conflict occurs even though the federal statute contains no express language on preemption. In such a case, the Supremacy Clause renders the federal law supreme.

Third, implied preemption may also occur if a court determines that Congress has so pervasively regulated a field that there is no room left for state action. This is referred to as “occupying

the field,” and again arises without express statutory language on preemption.

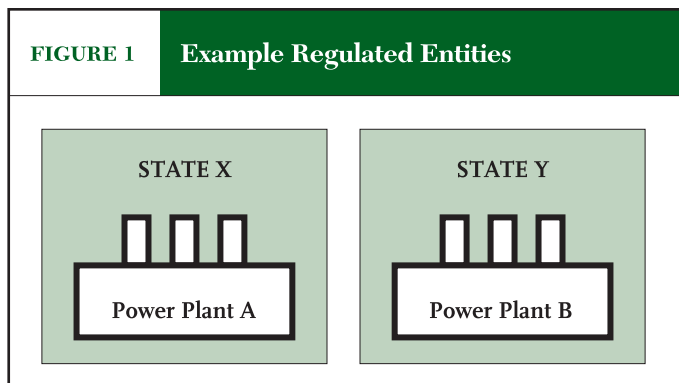
Because implied preemption by conflict or by “occupying the field” occurs in the absence of specific statutory preemption language, it is important for federal policymakers to consider the potential that a proposed federal statute will directly conflict with existing or proposed state actions. If preemption is not intended, an express reservation of states’ right in the federal statute preserves their ability to continue acting even after the federal measure is implemented. An important example of this kind of express reservation of state authority is found in the Clean Air Act.

Table 1 displays a range of potential preemption situations as they relate to a state’s authority to carry out more stringent greenhouse gas reduction programs after federal legislation establishing a federal cap-and-trade program.

UNDERSTANDING THE EFFECT OF A FEDERAL CAP-AND-TRADE PROGRAM ON STATE POLICIES

In addition to the potential for preemption of state policies that directly conflict with a federal cap-and-trade program, it is important to understand how a federal emissions cap can render moot certain types of state emissions reductions regardless of whether the architects of the federal program intend to nullify those actions. This occurs because the federal cap acts not only as an upper limit on emissions from the covered sources, but also as a floor. Consider this example (Figure 1).

Power Plant A in State X and Power Plant B in State Y are regulated under a federal cap-and-trade program, meaning they must surrender one federal allowance for every ton of carbon dioxide they emit. The federal program distributes



a number of emissions allowances equal to the total number of tons permitted from all covered sources. State X decides to implement a state-level policy to further reduce emissions from Power Plant A. What is the effect of this policy? Emissions from Power Plant A are reduced, but the total number of federal allowances available to power plants nationwide has not changed. This means that the federal allowances Power Plant A no longer needs can be used by Power Plant B in state Y to increase its emissions. The net effect is that state X’s more stringent policy enables an equivalent increase in emissions at sources outside State X, thus nullifying the additional reduction. This dynamic can dampen the effects of a wide range of state policies designed to produce greater reductions of emissions covered by a federal cap. Consider, for example, the effect on overall emissions of a state program aimed at getting households to reduce electricity consumption by purchasing more efficient appliances, if the electricity sector is covered by a federal emissions cap-and-trade program.⁶ The state program may successfully reduce electricity demand and emissions from local energy sources, but the national cap on emissions does not change. The total pollution level remains the same. This

TABLE 1 Levels of Preemption and Impact on States’ Ability to Regulate				
More Federal Control ←				→ More State Flexibility
States expressly and broadly preempted from any program to reduce greenhouse gas emissions.	States expressly preempted from imposing requirements to reduce direct emissions from sources covered by the federal cap-and-trade program.	Federal bill silent on preemption and no evidence of intent to “occupy the field. States reserve all authority that does not conflict with federal program, potentially including reductions from sources under the federal cap.	States expressly permitted to impose more stringent state requirements, but no authority to restrict or retire federal cap-and-trade allowances.	States expressly permitted to impose more stringent state requirements, and expressly permitted to unilaterally retire federal allowances to account for deeper state reductions.

Taken from Litz, F. (2008). *Toward a Constructive Dialogue on State and Federal Roles in Climate Policy* (Pew Center on Global Climate Change) at <http://www.pewclimate.org/statefedroles>.

same dynamic applies in the case of any state program that has the effect of reducing emissions locally on covered sources only to free up federal allowances that can be used elsewhere in the country or in another sector.

It is important to note that although additional greenhouse gas reductions may not be realized by such state policies, these actions may reduce the overall cost of the cap-and-trade program by reducing demand for fossil fuels and taking pressure off allowance prices. Indeed, any allowances freed up by more stringent reduction policies in one state will increase the supply of federal allowances, which will tend to lower their price. It is possible that a lower allowance price could lead to a decision to tighten the federal cap, causing deeper overall reductions, but this would require a revision to the federal policy.

Unless federal law states otherwise, states also cannot actively interfere with the federal allowances issued by the federal government in a cap-and-trade program. At least one state—New York—has tried unsuccessfully to impose state requirements on use of allowances by in-state sources under the federal acid rain trading program. New York enacted the “Air Pollution Mitigation Law,” which prohibited electric generating facilities in New York from selling any excess allowances to sources located in 14 up-wind states. On a challenge to the law, the federal courts determined that the state statute was preempted by the acid rain provisions of the Clean Air Act, because it directly conflicted or frustrated the federal program by restricting the sale of federal allowances.⁷

The New York experience provides an important lesson: preserving the states’ ability to enact more stringent policies in the context of a federal cap-and-trade program requires expressly providing a mechanism for state action in the federal law. Some examples of this approach are discussed in the next section.

OPTIONS FOR AN EFFECTIVE STATE ROLE

Given the law of preemption and the practical impact that a federal cap can have on state climate action, it is clear that federal climate legislation will determine states’ role in the federal program and their freedom to pursue additional reduction activities and policies. Legislative design, including definitions of included sectors and rules governing the allocation of allowances and revenues, will foreclose options or open doors to additional state-driven reductions.

Preserving space for state climate action in a future federal cap-and-trade program is desirable and will be necessary to achieve desired emissions reductions and transform the U.S. economy. The options below offer possible roles for states under a federal cap-and-trade program.

Option 1: Allow States to Control Allowance Budgets

One way to ensure that states can tighten the emissions policies on in-state sources covered by a federal cap-and-trade program is to allow states to control the number of federal allowances issued to sources within its territory. This could include providing states with allowances to enact complementary state policies to reduce emissions. If allowances are allocated from the federal budget, the state can determine the best local use of those allowances.

Under this approach, the federal agency would issue states specific allowance budgets. The states would be free to retire allowances rather than issue them to the market or to auction them to raise money to implement complementary emissions reduction policies. A variation on this approach would be to allow states to control only a portion of the allowance budget.⁸

California’s Global Warming Solutions Act of 2006, a.k.a. “AB32,” provides an example of how this approach might work. AB32 requires an economy-wide reduction of greenhouse gas pollution to 1990 levels by 2020 within the State of California. Unless California is given at least some control over the federal emissions allowance budget, any federal program that is less stringent than California’s program will tend to dilute the reductions achieved in California. Any federal allowances distributed to cover California sources will be freed up and sold to be used outside the state. However, if the federal program allowed California to retire allowances from its federal allowance budget equal to the additional reductions achieved under AB32 beyond those achieved under California’s share of the federal cap, then the effect of California’s reductions would be restored. Similarly, if a state implements aggressive end-use energy efficiency, it can ensure that reductions achieved under this complementary policy are safeguarded if it is permitted to retire enough federal allowances to match the reductions achieved under the energy efficiency policy. This approach could be used to preserve reductions achieved under a wide variety of state programs, from transit-oriented development to vehicle tailpipe standards.⁹

This approach has its disadvantages, including the uncertainty introduced into program costs when fifty different states can affect the level of the federal cap by withholding allowances. However, these potential disadvantages could be mitigated by limiting the total portion of the allowances in the control of states, or by placing federal parameters around acceptable allocation methodologies at the state level. The aggregate effect of these allowance retirements may be small compared to the total number of allowances in the system. For example, WRI’s analysis of the Climate Security Act (S.2191) introduced by

Senators Lieberman and Warner shows that for states to achieve the level of greenhouse gas reductions that they have already mandated through enacted statutes, approximately 4.2 billion metric tons—or 2.8 percent of the total cumulative allowance pool between 2012 and 2050—would need to be retired.¹⁰

Option 2: Allow States to Impose Restrictions on Allowances

An alternative to allowing states control over the allowance budgets and allocation methods is to allow states to place restrictions on the sale or use of allowances after they are allocated by the federal authority. Under this approach, states could require in-state facilities to retire allowances in excess of their emissions, or require facilities that shut down to retire their allowances.

The advantage of this approach is that states could impose requirements that best suit the states' policies. States could prevent sources with reduced emissions due to complementary state programs (such as energy efficiency or renewable energy programs) from canceling those reductions by selling freed-up allowances. Allowing states to impose restrictions on allowance sales, however, risks creating different "currencies," whereas simply retiring allowances would not.

An alternative to vesting states with the ability to reduce state allowance budgets or impose restrictions on the sale or use of allowances would be for the federal government to provide for an adjustment of the national cap. This could occur on petition by a state that seeks to tighten the emissions restrictions on in-state sources, or on the federal government's own motion. This approach poses a challenge for states by placing control exclusively in the hands of the federal government, which will always have the ability to revisit the national cap whether the law provides for such revision or not. States looking to go beyond federal efforts are in a weaker position when they have to petition the federal government rather than being able to tighten the cap on their own initiative, and this approach may deter states' innovation.

Option 3: Distribute Allowances or Auction Revenue to States for Complementary Policies

In addition to providing for adjustment to the federal emissions cap to reflect additional state reductions, the federal program could provide revenue from an allowance auction to states for implementation of complementary policies, such as low- and middle-income energy assistance, incentives for energy-efficient appliances and vehicles as well as mass transit. These may be environmental priorities for states,

and support the economic transition to a low-carbon state economy.

This approach has the advantage of supporting state policy in areas where they have particular expertise or relevant jurisdiction. In some cases, policies that fall under state and local authority may drive reductions more effectively than those at the federal level. For example, analyses of the transportation sector indicate that drivers are not very sensitive to small changes in the price of fuel, and that few emissions reductions would be made in this sector if it were included in a cap-and-trade program with moderate targets.¹¹ However, state and local entities have additional opportunities to reduce transportation emissions that are not available to the federal government. These opportunities include land-use planning and developing communities that require fewer miles to be driven.

Similarly, some policies are best tailored to local or regional conditions. For example, building codes—another way of getting at low-cost residential and commercial energy efficiency—are implemented at the state and local levels, where local temperatures and weather considerations can be taken into account. Likewise, policies to promote renewable energy can take advantage of high regional resource potential such as the availability of wind or tidal power.

A set amount of auction revenue (or allowances) might be given to states simply for having enacted a policy of a certain type (e.g., electricity revenue decoupling). Alternatively, incentives could be tied to the level of reductions actually achieved by the complementary policies, with allowances or funds given on a per-ton basis. This approach would be more challenging to implement because it would require periodic "audits" by the federal government of state programs, and it is often difficult to ascertain the precise cause of a specific reduction. Such incentives would not only reward early-acting states, but could also bring on additional states that might not otherwise have acted, and provide the funds needed to implement such programs.

By continuing to implement innovative emissions-reduction programs, state policy makers can experiment with creative solutions that might be too uncertain or politically unpalatable to try at a federal scale in the short term. States have the ability to test these options, and to encourage other states or the federal government to adopt the ones that prove most successful. While this option would not yield additional reductions—the tons reduced through investment of auction revenues would not reduce the federal cap—it could make the cap easier or less expensive to meet, particularly in the long term.

Option 4: Allow States to Opt Out of the Federal Program if They Join an Alternative State Program

The Clean Air Act’s treatment of California vehicle standards provides a model for creating a single state alternative to a federal regulation. The Act preempts states and local governments from establishing laws to regulate emissions from new vehicles. However, it allows California to petition for a waiver to establish its own standards. Once the state receives such a waiver, other states are free to join the California program.¹² Thus, states are given some flexibility in determining how aggressively to regulate emissions in their jurisdictions, but regulated manufacturers are subjected to no more than two different standards throughout the country.

A similar system might be established for economy-wide greenhouse gas emissions. A state or region—such as the Northeast states that were the first to implement a carbon cap-and-trade program—might petition for a waiver to establish its own GHG program, opting out of a federal cap-and-trade system and creating an alternative that other states or regions could adopt. States choosing this alternative program could pursue more aggressive reductions, but regulated entities would be faced with no more than two different compliance regimes. For added simplicity, a state-based trading system could be linked with a federal one, with the same allowances eligible for compliance in either program, but the existence of separate caps would allow states interested in pursuing further reductions the ability to achieve them.

One potentially helpful way to think about state flexibility under a broad federal cap-and-trade program is along a range of potential outcomes, much like the range of federal preemption outcomes laid out above. Table 2 depicts one range of potential outcomes.

RECOMMENDATIONS FOR A HYBRID APPROACH

As Congress moves toward enactment of a federal cap-and-trade program to reduce greenhouse gas emissions across the nation, lawmakers should balance the federal objectives of national uniformity and greater coverage with the benefits that accrue when states can innovate and initiate policy. This balancing can be accomplished with a hybrid policy framework that enables all levels of government to grapple meaningfully with the challenge of climate change.

Congress should allow states some control over the federal allowances allocated for state action, and allocations to the states should be adequate to support local development options including transportation planning, land use and building decisions, as well as energy resource planning and efficiency. Within this framework, states could be granted full or partial control of their federal emissions allowance budgets, the ability to receive allowances for reductions achieved through complementary programs, the ability to petition the federal government to strengthen the program, or the right to opt out of the federal program and into a single more aggressive alternative. Without options such as these, the federal government may unwittingly reduce or eliminate the incentive states have to implement strong complementary programs, such as aggressive end-use energy efficiency programs, because reductions achieved through such programs do not change the overall federal cap.

The goal is to create large markets that can reduce mitigation costs without creating fifty different emissions markets or duplicative compliance obligations within a state. It is important to reward states for early policy action and to support experimentation with programs that may prove to be models of low-cost options. A national cap-and-trade program should encourage emissions reduction programs tailored to meet local needs and opportunities, as well as the discovery of new policy options that can be replicated by other states and the federal government.

TABLE 2 A Range of Options for States in a Federal Cap-and-Trade Program

<i>More Federal Control</i> ←		→ <i>More State Flexibility</i>		
States receive no control over allowances and no proceeds from federal allowance auction.	States receive proceeds from the federal allowance auction for complementary policies; no ability to retire or restrict sale or use of federal allowances.	States given right to petition EPA to tighten federal cap to account for more stringent state programs.	States get control over some allowances, based on implementation of complementary policies, including right to sell and retire allowances.	States get control over allowances attributable to the state’s output, including right to sell and retire allowances, and use the allowances for complementary purposes. States may opt out of a federal cap-and-trade program in favor of a single state alternative.

NOTES

1. For a more thorough treatment of this issue, see Litz, F. (2008), *Toward a Constructive Dialogue on State and Federal Roles in Climate Policy*, Pew Center on Global Climate Change, available at <http://www.pewclimate.org/statefedroles>.
2. Adelman, D. and K. Engel (2007). "Adaptive Federalism: The Case Against Reallocating Environmental Regulatory Authority," 92 *Minn. L. Rev.* 1796.
3. For more information on the Regional Greenhouse Gas Initiative, see <http://www.rggi.org>; for information on the Western Climate Initiative, see <http://www.westernclimateinitiative.org>; and for information on the Midwestern Greenhouse Gas Reduction Accord, see <http://www.midwesternaccord.org>.
4. There is a long list of examples for this shared approach, including clean air regulation under the Clean Air Act; clean water regulation under the Clean Water Act; and Hazardous waste cleanup under federal and state Superfund laws. For a review of the various jurisdictional areas of state and federal government, see Litz 2008 *supra* note 1.
5. The Supremacy Clause reads, "This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the authority of the United States, shall be the supreme Law of the land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding."
6. It is important to note here that state programs directed at sources not covered by the federal cap-and-trade program do not have this effect. Reductions from such programs can therefore be encouraged without the need for adjustment of the federal cap.
7. It should be emphasized that the New York law represented one particularly blatant type of "interference" with the federal allowances. It is not clear if less intrusive state methods would hold up under constitutional scrutiny. For example, it has been suggested that states could require federal sources to retire 1.5 allowances for every ton emitted, and that this approach is expressly authorized under the Clean Air Act's provisions that allow states to seek deeper reductions than the federal government.
8. This approach has a precedent in two existing cap-and-trade programs administered by the federal Environmental Protection Agency. The "NOx SIP Call" cap-and-trade program covering much of the eastern United States left allocations to the states, as did the recently enacted Clean Air Interstate Rule (CAIR). See <http://www.epa.gov/cair/>.
9. Quantification of emissions reductions achieved through complementary policies will be more difficult for some measures than for others. Retiring allowances to compensate states for these reductions will likely involve some degree of approximation.
10. The 4.2 billion tons represent the amount of additional reductions the leadership states would achieve beyond the Climate and Security Act, taking into account more stringent state statutes.
11. Nordhaus, Robert R., Kyle W. Danish (2003). *Designing a Mandatory Greenhouse Gas Reduction Program for the U.S.*, Arlington, VA: Pew Center on Global Climate Change.
12. See Sections 202 and 209 of the Clean Air Act.

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