

# AB 32 and Climate Change: The National Context of State Policies for a Global Commons Problem

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Because climate change is a global problem, climate change policies should involve the highest levels of effective government. However, absent effective action at the national or international levels, some states and regions are enacting subnational climate change policies. This article examines the positive, negative, and benign interactions of state policies such as California's AB 32 with federal policies, and explores whether such policies can provide an impetus for further action at the federal level.

**W**hy should anyone be interested in the national context of a state policy? In the case of California's Global Warming Solutions Act (AB 32), the answer flows directly from the very nature of the problem—global climate change, the ultimate global commons problem. Greenhouse gases (GHGs) uniformly mix in the atmosphere. Therefore, any jurisdiction taking action—whether a nation, a state, or a city—will incur the costs of its actions, but the benefits of its actions (reduced risk of climate change damages) will be distributed globally. Hence, for virtually any jurisdiction, the benefits it reaps from its climate-policy actions will be less than the cost it incurs. This is despite the fact that the global benefits of action may well be greater—possibly much greater—than global costs.

This presents a classic free-rider problem, in which it is in the interest of each jurisdiction to wait for others

to take action, and benefit from their actions (that is, free-ride). This is the fundamental reason why the highest levels of effective government should be involved, that is, sovereign states (nations). And this is why international, if not global, cooperation is essential. (See the extensive work in this area of the Harvard Project on International Climate Agreements.)

Despite this fundamental reality, there can still be a valuable role for subnational climate policies. Indeed, my purpose in this essay is to explore the potential for such state and regional policies—both in the presence of federal climate policy and in the absence of such policy. I begin by describing the national climate policy context, and then turn to subnational policies, such as California's AB 32 and the Regional Greenhouse Gas Initiative (RGGI) in the northeast. My focus is on how these subnational policies will interact with a federal climate policy. It turns out that some of the interactions will be problematic, others will be benign, and still others could be positive. I also examine the role that could be played by subnational policies in the absence of a meaningful federal policy, with the conclusion that—like it or not—we may find that Sacramento comes to take the place of Washington as the center of national climate policy.

## The (Long-Term) National Context: Carbon Pricing

I need not tell readers of *ARE Update* that virtually all economists and most other policy analysts favor a national carbon-pricing policy (whether carbon

tax or cap-and-trade) as the core of any meaningful climate policy action in the United States. Why is this approach so overwhelmingly favored by the analytical community?

First, no other feasible approach can provide truly meaningful emissions reductions (such as an 80% cut in national CO<sub>2</sub> emissions by mid-century). Second, it is the least costly approach in the short term, because abatement costs are exceptionally heterogeneous across sources. Only carbon pricing provides strong incentives that push all sources to control at the same marginal abatement cost, thereby achieving a given aggregate target at the lowest possible cost. Third, it is the least costly approach in the long term, because it provides incentives for carbon-friendly technological change, which brings down costs over time. Fourth, although carbon pricing is not sufficient on its own (because of other market failures that reduce the impact of price signals—more about this below), it is a necessary component of a sensible climate policy, because of factors one through three, above.

But carbon pricing is a hot-button political issue. This is primarily because it makes the costs of the policy transparent, unlike conventional policy instruments, such as performance and technology standards, which tend to hide costs. Carbon pricing is easily associated with the dreaded T word. Indeed, in Washington, cap-and-trade has been successfully demonized as “cap-and-tax.” As a result, the political reality now appears to be that a national, economy-wide carbon-

pricing policy is unlikely to be enacted before 2013. Does this mean that there will be no federal climate policy in the meantime? No, not at all.

### The (Short-Term) National Context: Federal Regulations on the Way or Already in Place

Regulations of various kinds may soon be forthcoming—and in some cases, will definitely be forthcoming—as a result of the U.S. Supreme Court decision in *Massachusetts v. EPA* and the Obama Administration's subsequent endangerment finding that emissions of carbon dioxide and other greenhouse gases endanger public health and welfare. This triggered mobile source standards earlier this year, the promulgation of which identified carbon dioxide as a pollutant under the Clean Air Act, thereby initiating a process of using the Clean Air Act for stationary sources as well.

Those new standards are scheduled to begin on January 2, 2011, with or without the so-called “tailoring rule,” that would exempt smaller sources. Among the possible types of regulation that could be forthcoming for stationary sources under the Clean Air Act are: new source performance standards, performance standards for existing sources (Section 111(d)), and New Source Review with Best Available Control Technology standards under Section 165.

The merits that have been suggested of such regulatory action are that it would be effective in some sectors, and that the threat of such regulation will spur Congress to take action with a more sensible approach—namely, an economy-wide cap-and-trade system. However, regulatory action on carbon dioxide under the Clean Air Act will accomplish relatively little and do so at relatively high cost, compared with carbon pricing. Also, it is not clear that this threat will force the hand of Congress; it clearly has

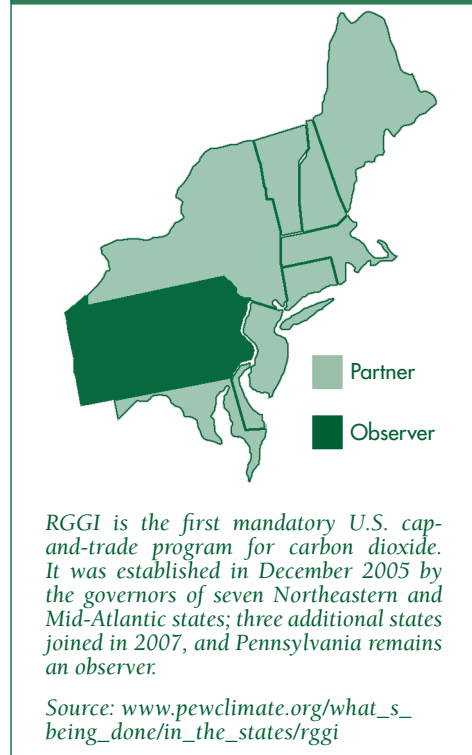
not yet done so. Indeed, it is reasonable to ask whether this is a credible threat, or will instead turn out to be counterproductive (when stories about the implementation of inflexible, high-cost regulatory approaches lend ammunition to the staunchest opponents of climate policy).

It is also possible that air pollution policies for non-greenhouse gas pollutants, the emissions of some of which are highly correlated with CO<sub>2</sub> emissions, may play an important role. For example, three-pollutant legislation focused on sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), and mercury could have profound impacts on the construction and operation of coal-fired electricity plants, without any direct CO<sub>2</sub> requirements. Without any new legislation, a set of rules which could have significant impacts on coal-fired power plants are now making their way through the regulatory process—including regulations affecting ambient ozone, SO<sub>2</sub>/NO<sub>2</sub>, particulates, ash, hazardous air pollutants (mercury), and effluent water.

There is also the possibility of new energy policies (not targeted exclusively at climate change) having significant impacts on CO<sub>2</sub> emissions. The possible components of such an approach that would be relevant in the context of climate change include: a national renewable electricity standard; federal financing for clean energy projects; energy efficiency measures (building, appliance, and industrial efficiency standards; home retrofit subsidies; smart grid standards, subsidies, and dynamic pricing policies); and new federal electricity-transmission siting authority.

Even without action by the Congress or by the Administration, legal action on climate policy is likely to take place within the judicial realm. Public nuisance litigation will no doubt continue, with a diverse set of lawsuits being filed across the country in pursuit of injunctive relief and/or damages. Due to recent court decisions, the

Figure 1. Map of the Regional Greenhouse Gas Initiative (RGGI)



pace, the promise, and the problems of this approach remain uncertain.

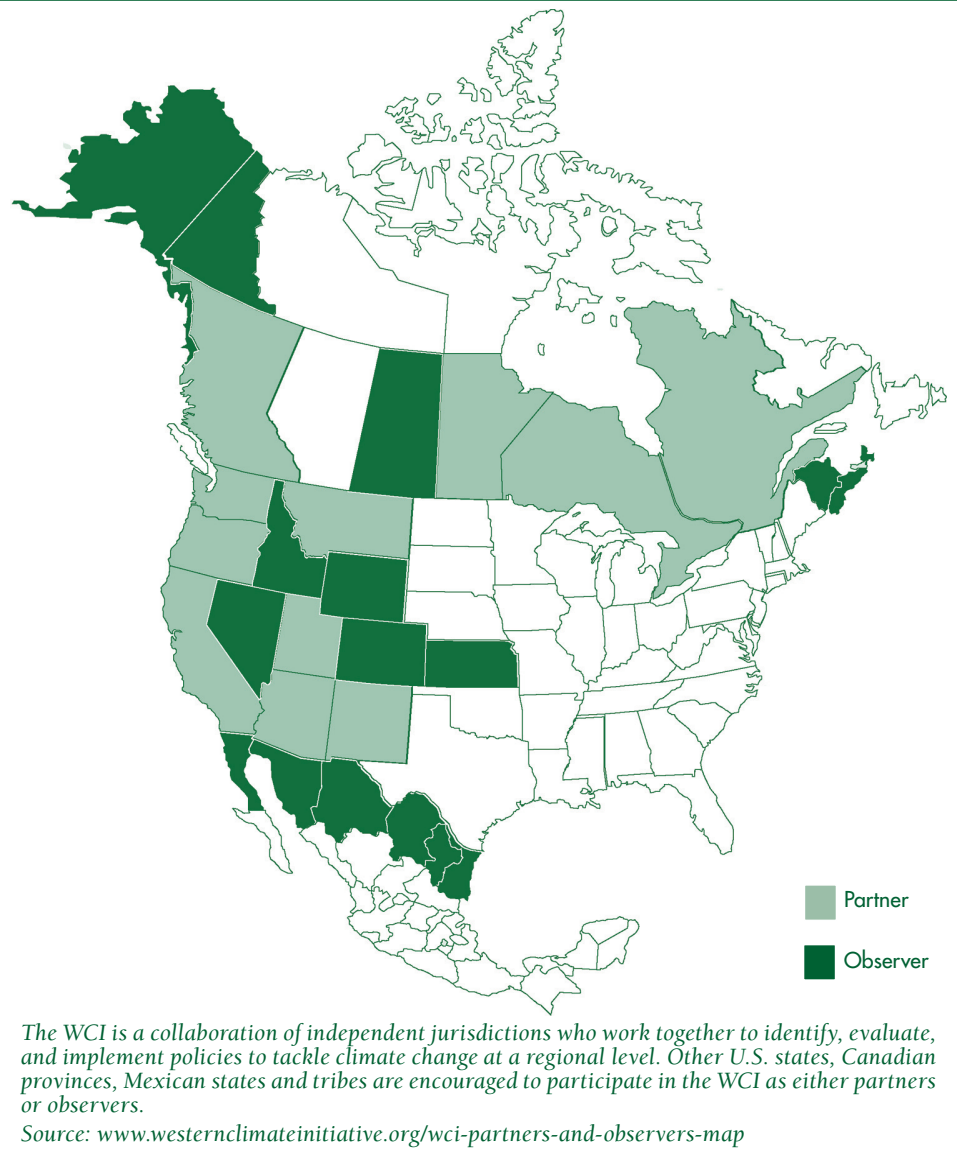
Beyond the well-defined area of public nuisance litigation, other interventions which are intended to block permits for new fossil energy investments, including both power plants and transmission lines, will continue. Some of these interventions will be of the conventional NIMBY character, but others will no doubt be more strategic.

But with political stalemate in Washington on carbon pricing or national climate policy, attention is inevitably turning to regional, state, and even local policies intended to address climate change.

### Subnational Climate Policies

The Regional Greenhouse Gas Initiative (RGGI) in the Northeast (Figure 1) has created a cap-and-trade system among electricity generators. More striking, California's Global Warming Solutions Act (Assembly Bill 32, or AB 32) will likely lead to the creation of a very ambitious set of climate initiatives, including a statewide cap-and-trade

Figure 2. Map of the Western Climate Initiative (WCI)



system. The California system is likely to be linked with systems in other states and Canadian provinces under the Western Climate Initiative (Figure 2). Currently, more than half of the 50 states are contemplating, developing, or implementing climate policies.

In the presence of a federal policy, will such state efforts achieve their objectives? Will the efforts be cost-effective? The answer is that the interactions of state policies with federal policy can be problematic, benign, or positive, depending upon their relative scope and stringency, and depending upon the specific policy instruments used. This is the topic of a paper which Professor Lawrence Goulder

(Stanford University) and I have written, “Interactions Between State and Federal Climate Change Policies.” (National Bureau of Economic Research Working Paper 16123, June 2010).

### Problematic Interactions

Let’s start with the case of a federal policy which limits emission quantities (as with cap-and-trade) or uses nationwide averaging of performance (as with some proposals for a national renewable portfolio standard). In this case, emission reductions accomplished by a “green state” with a more stringent policy than the federal policy—for example, AB 32 combined with Waxman-Markey/H.R. 2454—will

reduce pressure on other states, thereby freeing, indeed encouraging (through lower allowance prices) emission increases in the other states. The result would be 100% leakage, no gain in environmental protection from the green state’s added activity, and a national loss of cost-effectiveness.

Potential examples of this—depending upon the details of the regulations—include: first, AB 32 cap-and-trade combined with federal cap-and-trade (H.R. 2454) or combined with some U.S. Clean Air Act performance standards; second, state limits on GHGs/mile combined with federal Corporate Average Fuel Economy (CAFE) standards; and third, state renewable fuels standards (RFS) combined with a federal renewable fuels standard, or state renewable portfolio standards (RPS) combined with a federal RPS. A partial solution would be for these federal programs to allow states to opt out of the federal policy if they had an equally or more stringent state policy. Such a partial solution would not, however, be cost-effective.

### Benign Interactions

One example of benign interactions of state and federal climate policy is the case of the RGGI in the Northeast. In this case, the state policies are less stringent than an assumed federal policy (such as H.R. 2454). The result is that the state policies become non-binding and hence largely irrelevant.

A second example—that warms the hearts of economists, but appears to be politically irrelevant for the time being—is the case of a federal policy that sets price, not quantity, i.e., a carbon tax, or a binding safety valve or a price collar in a cap-and-trade system. In this case, more stringent actions in green states do not lead to offsetting emissions in other states induced by a changing carbon price. It should be noted, however, that there will be different marginal abatement costs across

states, and so aggregate reductions would not be achieved cost-effectively.

### Positive Interactions

Three scenarios suggest the possibility of positive interactions of state and federal climate policies. First, states can—in principle—address market failures not addressed by a federal carbon-pricing policy. A prime example is the principal agent problem of insufficient energy-efficiency investments in renter-occupied properties, even in the face of high energy prices. This is a problem that is best addressed at the state or even local level, such as through building codes and zoning.

Second, state and regional authorities frequently argue that states can serve as valuable “laboratories” for policy design, and thereby provide useful information for the development of federal policy. However, it is reasonable to ask whether state authorities will allow their “laboratory” to be closed after the experiment has been completed, the information delivered, and a federal policy put in place. Pronouncements from some state leaders should cause concern in this regard.

Third, states can create pressure for more stringent federal policies. A timely example is provided by California’s Pavley I motor vehicle fuel-efficiency standards and the subsequent change in federal CAFE requirements. There is historical validation of this effect, with California repeatedly having increased the stringency of its local air pollution standards, followed by parallel federal action under the Clean Air Act. This linkage is desirable if the previous federal policy is insufficiently stringent, but whether that is the case is an empirical question.

Thus, in the presence of federal climate policy, interactions with subnational policies can be problematic, benign, or positive, depending upon the relative scope and stringency of the subnational and national policies,

as well as the particular policy instruments employed at both levels. (For a more rigorous derivation of the findings above, as well as an examination of a larger set of examples, please see my paper with Lawrence Goulder, referenced below.)

But comprehensive federal carbon-pricing policy appears to be delayed until 2013, at the earliest. And it is possible that pending federal regulatory action under the Clean Air Act will be curtailed or significantly delayed either by the new Congress or by litigation. Therefore, it is important to consider the role of state and regional climate policies in the absence of federal action.

### Subnational Climate Policies in the Absence of Federal Action

In brief, in the absence of meaningful federal action, subnational climate policies could well become the core of national action. Problems will no doubt arise, including legal obstacles such as possible federal preemption or litigation associated with the so-called “Dormant” Commerce Clause.

Also, even a large portfolio of state and regional policies will not be comprehensive of the entire nation, that is, not truly national in scope (for a quick approximation of likely coverage, check out a recent map of blue states and red states).

And even if the state and regional policies were nationally comprehensive, there would likely be different policies of different stringency in different parts of the country. As a result, carbon shadow-prices would not be equivalent, and overall policy objectives would be achieved at excessive social cost.

Is there a solution (if only a partial one)? Yes. If the primary policy instrument employed in the state and regional policies is cap-and-trade, then the respective carbon markets can be linked. Such linkage occurs through bilateral recognition of allowances, which results in

reduced costs, reduced price volatility, reduced leakage, and reduced market power. Good news all around.

Such bottom-up linkage of state and regional cap-and-trade systems could be an important part, or perhaps even the core, of future of U.S. climate policy, at least until there is meaningful action at the federal level. In the meantime, it is at least conceivable—and perhaps likely—that linkage of state-level cap-and-trade systems will become the (interim) de facto national climate policy architecture.

In this way, Sacramento would take the place of Washington as the center of national climate policy deliberations and action. No doubt, this possibility will please some, and frighten others.

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#### For additional information, the author recommends:

“Interactions Between State and Federal Climate Change Policies.” Goulder, Lawrence and Robert Stavins. 2010. Cambridge, Massachusetts: National Bureau of Economic Research Working Paper 16123.