CHAPTER 3

Putting a Price on Global Warming Emissions

We know that global warming poses a grave risk to our planet and our very way of life. As Chapter 1 pointed out, to avoid some of the worst consequences, we must keep the global average temperature from rising more than 2°F from today's levels. To meet this goal, the United States will have to cut its emissions at least 80 percent from 2005 levels by 2050, and keep its cumulative emissions from 2000 to 2050 at 160–265 gigatons CO_2 equivalent (Luers et al. 2007).

A well-designed economywide cap-and-trade program that sets a declining limit on heat-trapping emissions while charging polluters for their emissions is a lynchpin of a comprehensive approach to addressing global warming. The nation will also need to pursue other measures, including sector-based policies that promote energy efficiency, the use of renewable energy, and better transportation and fuels (see Chapters 4–6). Investments in reducing emissions in other nations are also essential, such as funding for protection of tropical forests and deployment of clean technology in developing countries.

3.1. How a Well-Designed Cap-and-Trade Program Works

One primary goal of a cap-and-trade program is to put a price on heat-trapping emissions and require polluters to pay for their pollution. Such a system will encourage the entire economy to look for cost-effective ways to reduce these emissions, and help usher in the clean technologies and innovation essential to making the transition to a carbon-free economy.

The "cap" refers to the strict, declining limit on economywide heat-trapping emissions that the nation must set to help avoid the worst effects of global warming. Federal legislation should establish this cap, but it should also be adjustable over time to reflect the latest scientific information.

Under the program, regulated companies (the emitters) would have to purchase permits—also called allowances—for all their heat-trapping emissions. The total number of allowances issued would match the level of emissions allowed under the cap. Allowances would be made available through regularly held auctions.

With this basic framework, a cap-and-trade program creates a market for emissions allowances and spurs companies to curtail their emissions by financially rewarding more climate-friendly practices. For example, power producers may choose to shift from fossil-fuel-intensive sources of electricity such as coal to renewable sources such as wind and solar energy. Entrepreneurs who develop and sell new low-carbon technologies, such as improved solar panels or techniques for storing carbon in soils and trees, will also see a robust market for their products and respond accordingly. Households and businesses may also respond by, for example, purchasing more efficient appliances or equipment to reduce their energy costs. Together these actions will help the nation achieve the targeted cuts in emissions at the lowest cost.

In the jargon of economics, the "price signal"—that is, the price of the allowances, as set through the auction—helps correct (or "internalize") a market failure (or "externality") that has allowed companies to make

LEFT: One serious consequence of unchecked climate change will be extreme heat in cities. For example, under a high-emissions scenario (the red line), Chicago may experience 31 days above 100°F every year by the end of this century (City of Chicago 2008). Actions taken today—such as those called for in the Climate 2030 Blueprint—can help prevent such extreme heat. (Note: The Blueprint analysis is based on a different emissions scenario and extends only to 2030; see Table 3.1).

World-renowned economist Sir Nicholas Stern has stated that, "Climate change is the greatest market failure the world has ever seen." A well-designed cap-and-trade program can help address this failure in a cost-effective way while also providing an incentive for developing and deploying clean technologies throughout the economy.

production and investment decisions, and households to make consumption choices, without accounting for the societal costs of the resulting pollution. In the words of Sir Nicholas Stern, author of the 2006 *Stern Review of the Economics of Climate Change*, "Climate Change is the greatest market failure the world has ever seen." A well-designed cap-and-trade program can help address this market failure in a cost-effective way that benefits the overall society.

An alternative approach to putting a price on emissions is a carbon tax. In theory, a carbon tax and a cap-and-trade program have equivalent effects. (One sets a fixed price that then determines the quantity of emissions, while the other sets a fixed quantity of emissions that determines their price.)

However, the one fundamental problem with a tax is that it is impossible to know ahead of time what level the tax should be to produce the cuts in emissions we need. Policy makers would also be unlikely to continuously adjust the tax to meet a specific target for emissions. The price of allowances in a cap-and-trade program adjusts automatically, in contrast, to account for changing market conditions,[21] but always ensuring the necessary emissions cuts are achieved.

A cap-and-trade program may have greater merit as a practical matter of policy. Both approaches could also coexist. For example, policy makers could impose a carbon tax on sectors that are hard to include under a cap. However, it is critical that a well-designed market instrument be put in place without delay, to jump-start our transition to a clean energy economy.

3.2. A Tried-and-Tested Approach

The United States pioneered the cap-and-trade approach—to control emissions of sulfur dioxide (SO_2), a major component of acid rain, which acidifies lakes and forests and poses threats to public health. These emissions are primarily a by-product of burning coal to produce electricity.

The Acid Rain Program, which created an SO_2 trading system, was part of the Clean Air Act of 1990.[22] The program required owners of coal-burning power plants to reduce their SO_2 emissions to 50 percent of their 1980 levels by 2010.[23] The Acid Rain Progress Report from the U.S. Environmental Protection Agency (EPA) shows that the nation reached this goal in 2007—three years before the statutory deadline—and at only one-fourth the estimated cost (EPA

21 For example, current prices of allowances under the European Union's cap-and-trade program are low because the recession has reduced demand for energy, and thus the need for allowances (see Box 3.2).

22 The Acid Rain Program also limited emissions of nitrous oxide (NO_x), another contributor to acid rain. The program achieved these cuts through more traditional regulatory means.

23 However, as scientists have tracked the impact of the remaining SO_2 emissions on our nation's lakes and forests, they now realize that further reductions will be needed. In other words, regulators may have to lower the cap to account for new scientific information.

2007).[24] The report estimated that the public health benefits of the program exceeded its costs by more than 40:1.

Drawing on this experience, Europe, Australia, and New Zealand—as well as several U.S. states and regions—have committed to or already implemented cap-and-trade programs for heat-trapping emissions. As this approach becomes the international market tool of choice, the United States must place an even higher priority on developing a sound economywide cap-and-trade program, and ultimately link that program with those created by other nations. (See Box 3.2 for lessons from existing and proposed cap-and-trade programs.)

3.3. Design for Success

A successful cap-and-trade program must be designed well from the outset. Several critical features will help make it robust, transparent, fair, and effective:

Setting a stringent, declining cap on heat-trapping emissions, with firm near-term and long-term goals and a tight budget for cumulative emissions.

As noted, the United States must reduce its heat-trapping emissions at least 80 percent below 2005 levels by 2050, to avoid the worst effects of global warming. Delay in taking action will require much sharper cuts later, which would likely be more difficult and costly.

To start the nation on the path to the 2050 target, climate policies should require at least a 35 percent drop from 2005 levels by 2020, primarily from U.S. sources, and also from investments in cutting emissions in other countries. Thus the cap-and-trade program should set a cap on U.S. emissions to match this level of ambition. Because our understanding of climate science advances continuously, the program should also require regular reviews of the latest information, and include a mechanism for adjusting the target for emissions if needed.

However, these percentage reductions do not tell the whole story, because heat-trapping emissions accumulate and persist in the atmosphere for long periods of time (more than 200 years, in the case of CO_2). Thus the critical metric of success of a cap-and-trade program is a stringent budget for cumulative carbon emissions. Chapter 1 suggests a U.S. budget of 165–260 gigatons CO_2 equivalent from 2000 to 2050. Of

Acid rain, which is caused by sulfur dioxide emitted from coal-burning power plants, contributes to human health problems and can kill aquatic plants and animals and destroy forests (as shown here). The world's first cap-and-trade system was established in 1990 as part of a U.S. effort to address acid rain, and it has proven a success, achieving its 2010 emissions reduction goal three years ahead of schedule, at a much lower cost than originally expected.

24 A primary reason for these lower compliance costs was the switch to low-sulfur coal from Wyoming—made cheaper by the deregulation of railroad freight. Other reasons include more output from nuclear power plants as a result of higher "capacity factors" (the ability to run at full capacity during more hours of the year); a decline in natural gas prices, coupled with efficiency improvements in natural gas combined-cycle plants, which led to greater reliance on those plants; and technological innovations that led to lower-cost, better-performing scrubbers, which reduce sulfur emissions 90 percent or more.

this amount, the nation will already have emitted about 78 gigatons by 2010, at today's rate of about 7.1 gigatons a year.

Including as many economic sectors as possible under the cap.
The cap should cover all major sources of emissions—either directly or indirectly—to ensure that the needed economywide reductions occur, and to spur all sectors to adapt their production and investments in response to the price of emissions. A cap-and-trade program should also provide incentives for sources that may remain uncapped (such as the agriculture and forestry sectors) to reduce their emissions, by using the proceeds from auctioning allowances to set standards and fund programs.

Including all major heat-trapping emissions.
To exert the greatest impact, the cap should apply to all major heat-trapping emissions, including—but not limited to—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Auctioning all allowances rather than giving them away free to emitters, and using the revenues to advance the public good.
An auction would be the most efficient and equitable way to distribute allowances to release emissions. While firms would bear the regulatory burden of purchasing the allowances, they would not necessarily pay the final costs. Most companies would pass on these costs to consumers, regardless of whether the program auctioned the allowances or gave them away.

Once carbon emissions are capped, allowances become a valuable commodity. Giving them away for free would most likely result in windfall profits for companies without producing any benefit for consumers.[25] Instead, the government should auction the allowances and use the revenues for productive purposes—an approach known as "revenue recycling." The government could direct some of these revenues to consumers, to offset the costs that companies pass through to them. Recent studies by the Congressional Budget Office (CBO 2007a) and Dinan and Rogers (2002) have documented the economic benefits of an allowance auction with revenue recycling.

Ten northeastern states already have a functioning cap-and-trade system to reduce global warming emissions. The states auction nearly all of their emissions permits (or allowances) and invest the revenue in clean energy technologies and policies. Governor John Lynch of New Hampshire declared, "We need to continue to invest in energy efficiency and work to ensure that 25 percent of our energy comes from renewable power by 2025. . . . My Green Jobs Initiative will help create jobs for our people now and make New Hampshire's economy stronger for the future."

Auction revenues from a stringent cap-and-trade program will total hundreds of billions of dollars per year. The government can invest these funds in measures that promote cuts in emissions, such as clean, renewable energy technologies, energy efficiency, and efforts to protect forests in developing countries.

Government should also invest the funds in measures that help consumers and communities transition to a low-carbon economy. These measures include rebates for low-income families, transition assistance to workers who are disproportionately affected by the program, and help for communities and ecosystems in adapting to the unavoidable effects of global warming.

Excluding loopholes that undermine the program.
A cap-and-trade program should not include a "safety valve" that short-circuits the market by setting a maximum price on allowances—above which an unlimited number would become available. This approach would distort the market, undermine the nation's ability to fulfill its goals for cutting emissions, and reduce the incentive for companies to invest in developing and using clean technologies.

25 This is a critical lesson from experience with the European Union's cap-and-trade program (see Box 3.2).

Limiting "offsets."
Rather than reducing their own emissions or buying allowances, regulated companies may purchase "offsets" by paying parties or countries not subject to the cap to reduce their emissions. For example, a power producer could offset its emissions by paying an unregulated landfill owner to capture methane emissions.

If these offsets are cheaper than efforts to cut emissions directly, they can help polluters lower the costs of complying with a cap. Offsets also allow unregulated entities and countries to contribute to the global effort to reduce heat-trapping emissions.

However, by helping major emitting sectors of the economy postpone cuts in their own emissions, offsets could delay the much-needed technological transformation and innovations in those capped sectors. That, in turn, would jeopardize the cap-and-trade program's long-term goals, and perhaps raise its long-term costs. Ensuring that offsets meet stringent criteria—such as that they are real, verifiable, quantifiable, additional (that is, beyond any that would have occurred without the program), permanent, and enforceable—may also require considerable resources.

Banking allows firms to choose which technologies to invest in and make other investment decisions over a longer time frame, and thus greatly reduces the volatility of the price of emissions allowances.

The nation may find cheaper and more efficient ways to spur cuts in emissions from sectors that are not easy to cap. These could include direct mandates (such as performance or technology standards), financial incentives funded by auction revenues, subsidies, and loan guarantees.

An effective cap-and-trade program should therefore limit the number of offsets that capped companies can rely on. Any offsets that the program does allow should meet strict quality standards, and it should include a strong institutional framework for monitoring and enforcing those standards. The total number of offsets allowed must relate directly to the stringency of the cap. For example, regulators could mandate that companies could use offsets to meet only a small percentage of their required cuts in emissions.

Allowing banking and borrowing.
Banking would allow firms to exceed their required cuts in emissions in early years and store up credits for use in later years. Borrowing would allow firms to emit more global warming pollution early if they commit to making sharper cuts in emissions later.

Banking allows firms to choose which technologies to invest in and make other investment decisions over a longer time frame, and thus greatly reduces the volatility of the price of emissions allowances. Unrestricted banking will spur early cuts in emissions, which are important for safeguarding the climate.

However, as with offsets, early borrowing at unsustainable levels can lead capped sectors to postpone cuts in emissions, and can undermine the program's overall goals. Policy makers should therefore limit the amount of borrowing firms can do, such as by imposing a three-year "true-up" period, so borrowing cannot get out of hand.

Creating strong institutions.
A cap-and-trade program requires a strong institutional framework to function well. The EPA—the agency that would oversee the program—will play a critical role in ensuring that it achieves its goals. The EPA will have to work closely with scientists, policy makers, and the authority that will oversee the market for trading allowances.

That authority, in turn, will have to guard against "gaming" or other illegal activities that interfere with the proper functioning of allowance auctions. It will also have to oversee any secondary markets for trading allowances that will develop as capped firms and other parties (including brokers and investors) trade allowances.

The EPA must have enough resources to ensure that regulated companies comply with their requirements, and that they face appropriate penalties if they do not. The agency will also have to strictly monitor and enforce standards for offsets.

Meanwhile a trustworthy fiduciary entity must oversee the disbursement of revenues from the sale of allowances, to ensure that they go to the appropriate recipients for the appropriate purposes. Congress or the EPA will also have to choose an authority to manage links between a domestic cap-and-trade program and international carbon markets.

Finally, a robust, high-quality cap-and-trade program needs excellent baseline data on emissions, and the ability to track them over time.

Linking with similar programs.
Linking a U.S. cap-and-trade regime with well-designed cap-and-trade programs in other regions can provide important economic advantages, such as enabling capped companies to find the lowest-cost sources of reductions over a wider geographic area. Such links would require that the regimes be compatible, especially with regard to the stringency of the cuts in emissions they require and other key program standards.

The NEMS model looks for the most cost-effective way of meeting the cumulative goal for emissions (in tons) over the entire modeling period of 2011 to 2030, taking into account banking and borrowing of allowances. This means that the actual year-by-year emissions that are shown in the model results (the "actual emissions trajectory") may differ considerably from

BOX 3.1.

Climate 2030 Blueprint Modeling Assumptions: Cap-and-Trade Program

We used UCS-NEMS to model a cap-and-trade program broadly in keeping with the design criteria outlined in Chapter 3, except when constrained by specific limitations in the model. We made the following assumptions (see Appendix B online for more details):

- The United States places a cap on global warming emissions starting in 2011. This cap declines to 26 percent below 2005 levels by 2020, and 56 percent below 2005 levels by 2030. The cap ensures that the nation is on track to stay within a mid-range carbon budget—that is, cumulative emissions—of 160–265 gigatons CO_2 equivalent from 2000 to 2050 (see Table 3.1).
- The sectors of the economy covered by the cap include electricity generation, transportation, and the industrial, commercial, and residential sectors. Household emissions from sources other than electricity are not covered.
- The cap covers emissions of all major heat-trapping gases, including CO_2 from energy production and use; CO_2 from cement and lime production; methane (CH_4) from landfills, coal mining, natural gas and oil systems, stationary and mobile combustion, and livestock; nitrous oxide (N_2O) from agriculture, stationary and mobile combustion, industrial sources, and waste management; and hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).
- Capped firms can rely on carbon "offsets" to satisfy up to 15 percent of their allowance obligations. That is, rather than cutting their emissions directly, capped companies can offset them by paying uncapped third parties to reduce their emissions or increase carbon storage. We divided the allowable offsets between domestic (a maximum of 10 percent of the cap) and international (a maximum of 5 percent of the cap).
- The federal government auctions all allowances for firms to emit carbon. However, UCS-NEMS did not allow us to channel the revenues from such auctions to investments in energy efficiency and renewable energy, or to households and businesses that may be disproportionately affected by the cap-and-trade system. We therefore simply assumed that all proceeds from the allowance auctions would be recycled back into the economy in a general way.
- The Blueprint cap-and-trade system does not include a "safety valve"—that is, an upper limit on the price of carbon. Nor does it impose an auction reserve price, which would set a minimum price for allowances.
- Firms can bank and borrow allowances to emit carbon. We assumed that no allowances would remain in that bank in 2030. That is, the capped firms together exactly meet the target for emissions by that year.

UCS-NEMS did not allow us to model U.S. links to international cap-and-trade programs to reduce heat-trapping emissions. We were also unable to model any "leakage" of emissions: that is, undercounting of emissions stemming from imports and exports of energy-intensive goods.

the inputs (the "cap emissions trajectory"). However, the cumulative emissions over the modeling period will remain the same for both trajectories, which is the important metric for the climate. (See Chapter 7 and Appendix B online for more information on our results.)

3.4. A Cap-and-Trade Policy Alone Is Not Sufficient

A cap-and-trade program would address the failure of the market to account for harm to the climate. However, it cannot overcome all the barriers to the development and use of technologies and other measures that are essential to creating a true low-carbon economy.

The nation must implement parallel policies alongside a cap-and-trade program, to ensure development and deployment of the full range of energy efficiency and clean energy technologies. These policies—outlined in Chapters 4, 5, and 6—include requiring utilities to generate a higher percentage of their electricity from renewable sources, requiring automakers to increase the fuel economy of their vehicles, stronger energy efficiency standards, incentives for investments in low-carbon technologies, and policies that encourage smart growth, among others.

The results of our analysis provide clear evidence that a comprehensive approach that includes these parallel policies would save households and businesses money by lowering their electricity and gasoline bills, reduce the price of allowances, and help cut heat-trapping emissions.

Finally, a program targeted at reducing such emissions may not, by itself, address other types of local and regional air pollution. We will therefore continue to need strong policies to curb those emissions.

TABLE 3.1. Yearly Caps on U.S. Global Warming Emissions under the Climate 2030 Blueprint

Year	Emissions Cap (million metric tons CO_2 equivalent)
2010	**7,150**
2011	6,501
2012	6,418
2013	6,325
2014	6,221
2015	6,103
2016	5,973
2017	5,830
2018	5,672
2019	5,501
2020	5,317
2021	5,121
2022	4,914
2023	4,699
2024	4,476
2025	4,249
2026	4,021
2027	3,793
2028	3,570
2029	3,353
2030	3,145

The table summarizes year-by-year caps on emissions that were inputs into UCS-NEMS, as key components of the Blueprint cap-and-trade program. The program would begin in 2011.

A program that reduces carbon emissions may not, by itself, address other types of local and regional air pollution that contribute to asthma and other serious respiratory and cardiovascular illnesses in nearly all of the country's major cities. For example, the Philadelphia-Camden-Vineland area (shown here) was ranked the United States' tenth most ozone-polluted metropolitan region in 2006, and global warming is expected to worsen air quality in the region. Strong policies designed to directly curb toxic air pollutants must be additional to any federal program targeting carbon emissions.

BOX 3.2.

How It Works: Cap and Trade

Existing cap-and-trade programs provide important lessons about the need for robust design features. A brief review of real-world experience will illustrate two of these lessons. First, a cap must be tight enough to achieve significant cuts in emissions. Second, the method regulators select for distributing emissions allowances to firms is critical, and auctioning is gaining favor as the preferred approach.

Cap and Trade in Practice

The European Union's Emission Trading Scheme (EU ETS) is the first cap-and-trade program for reducing heat-trapping emissions, and is designed to help European nations meet their commitments to the Kyoto Protocol. This program includes 27 countries and all large industrial facilities, including those that generate electricity, refine petroleum, and produce iron, steel, cement, glass, and paper.

The first phase of the EU ETS—from 2005 to 2007—drew criticism for not achieving substantial cuts in emissions, and for giving firms windfall profits by distributing carbon allowances for free. These criticisms are valid. However, the EU viewed Phase 1 as a trial learning period. The extent to which Phase 2—which runs from 2008 to 2012—helps Europe fulfill its Kyoto commitments will be a better test of the program.

Phase 1 allowed countries to auction up to only 5 percent of allowances—and only Denmark chose to auction that amount. The result was billions of dollars in windfall profits for electricity producers. Phase 2 allows slightly more auctioning, which is expected to occur.

The rules for Phase 3—which extends from 2012 to 2020—were published in December 2008, and unfortunately they are not as ambitious as expected, given the EU's stated commitment to tackling global warming. This phase targets a 20 percent reduction in emissions from 1990 levels by 2020; climate experts had hoped for 30 percent. Even this target is considerably watered down because of the large amount of offsets allowed from outside the capped region. Auctioning of allowances is still not likely to play a major role. This experience reinforces the fact that the United States would be much more likely to win stronger commitments from the EU and elsewhere if it fulfilled its responsibility to lead on climate policy.

The Regional Greenhouse Gas Initiative (RGGI) is a cap-and-trade program that covers a single sector—electricity generation—in 10 northeastern and mid-Atlantic states. The program aims to achieve a 10 percent reduction in emissions from power plants by 2018.

The program's most notable aspect is that states unanimously chose auctioning to distribute the vast majority of emissions allowances. Six of the 10 states will auction nearly 100 percent of their allowances. The auctions of the other four states include fairly small portions of fixed-price sales or direct allocations.

"At a time when jobs are being cut all over the country, investments in the clean-energy industry represent just the type of 'jobs program' we need in New Jersey—money-saving, pollution-cutting, and technologically innovative."
—Governor Jon Corzine

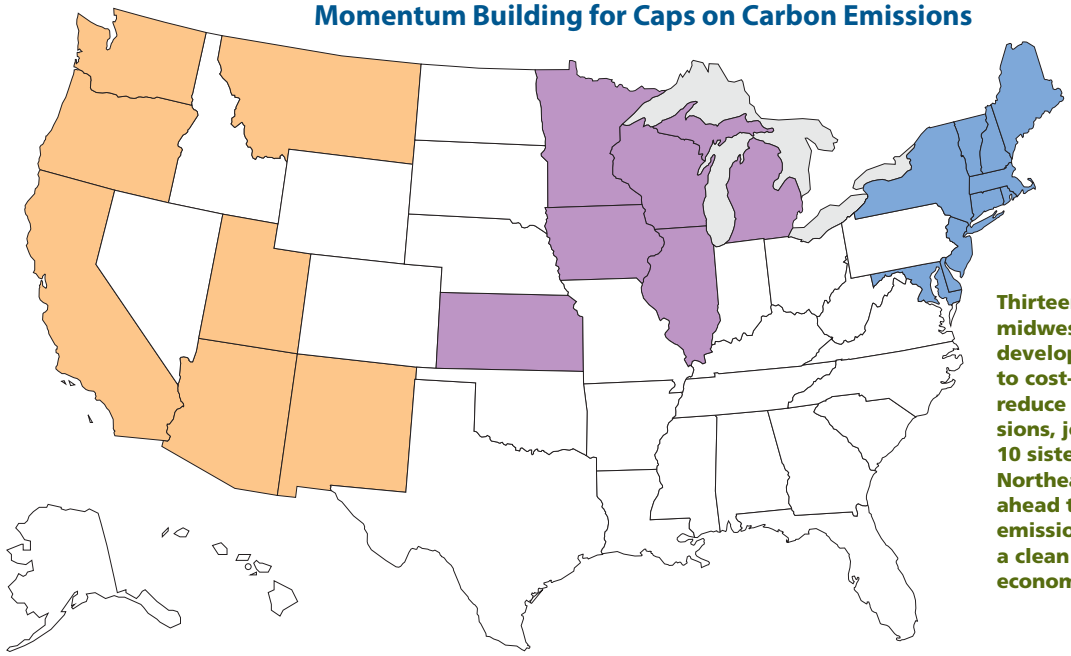
The program's initial three-year compliance period begins in 2009, but the first multistate auctions occurred on September 25 and December 17, 2008. The first auction, which included allowances from only six states, raised $38.5 million, while the second raised $106.5 million. States and electric utilities will invest the vast majority of those funds in energy efficiency and renewable technologies, with an emphasis on reducing demand for fossil-fuel-based electricity and saving consumers money.

The RGGI auction includes a reserve price, to ensure that CO_2 emissions will always carry a minimum cost, and that the auctions will yield a minimum amount of revenue for these important programs. Some analysts fear that the states may have set the cap too high, because emissions have not grown at the rate expected when the cap was set in 2005. However, there is a possibility that the states could revisit the cap.

Cap and Trade on the Horizon

The Western Climate Initiative (WCI)—which includes seven western states and four Canadian provinces—has established a regional target for reducing heat-trapping emissions of 15 percent below 2005 levels by 2020. WCI's main focus is developing a regional

Momentum Building for Caps on Carbon Emissions



Thirteen western and midwestern states are developing programs to cost-effectively reduce carbon emissions, joining their 10 sister states in the Northeast in pressing ahead to control emissions and build a clean energy economy.

cap-and-trade program. The WCI also requires participants to implement California's Clean Car Standard, and recommends other policies and best practices that states and provinces can adopt to achieve regional goals for cutting emissions.

The first phase of WCI development culminated on September 23, 2008, with the release of its Design Recommendations. These sketch out a very broad cap-and-trade program that would cover 85–90 percent of all heat-trapping emissions from participating states and provinces. The only parts of the economy that would remain uncapped are agriculture, forestry, and waste management. However, some sectors, such as transportation fuels, would be brought in at the start of the second compliance period, in 2015.

California is the largest single entity in the WCI, and it has the most detailed action plan of any state in the nation. In 2006 the legislature passed, and Governor Schwarzenegger signed, a law to reduce emissions economywide. The California Air Resources Board has created a blueprint for achieving the required reductions. The plan includes a strong set of sector-specific policies forecast to provide about 80 percent of the needed reductions, as well as a broad cap-and-trade program linking to the WCI. The California and WCI cap-and-trade programs are scheduled to go into effect in 2012.

Another nascent regional effort is occurring in the Midwest. On November 15, 2007, the governors of Illinois, Iowa, Kansas, Michigan, Minnesota, and Wisconsin, as well as the premier of the Canadian province of Manitoba, signed the Midwestern Regional Greenhouse Gas Reduction Accord. Participants agreed to establish regional targets for reducing global warming emissions, including a long-term target of 60–80 percent below today's levels, and to develop a multisector cap-and-trade system to help meet the targets.

Participants will also establish a system for tracking global warming emissions, and implement other policies to help reduce them. The governors of Indiana, Ohio, and South Dakota joined the agreement as observers. The regional accord for reducing such emissions is the first in the Midwest.

The governors and premier assembled an Advisory Group of more than 40 stakeholders to advise them, and their final recommendations are due in May 2009. As now conceived, the cap would take effect January 1, 2012.