

## **Cap and Trade Basics**

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Though many entities now assert that a “cap and trade” program is the best way to control emissions that are causing global warming, relatively few people understand what that actually means. In fact, there is a wide variety of policy structures that could fit under the rubric of “cap and trade.” The elements of cap and trade are so variable that it renders the term almost meaningless relative to its ultimate effectiveness. The design of a cap and trade program is critical to its chances of success.

### **What is Cap and Trade?**

Cap and trade refers to:

- The establishment of an emissions cap that would limit and reduce overall greenhouse gas emissions in a certain set of economic sectors;
- The creation of a system that turns emissions reductions into equal economic units that can be traded like a currency.

The theory is that the system will enable maximum economic efficiency and flexibility for the market by allowing those entities that can get the cheapest emissions reductions to get lots of them. Those entities could then sell emission reduction “credits” in a market to those who would have to pay much more to achieve the same reductions. These processes theoretically combine to produce the lowest price for the reduction of emissions in the economy, and thus ease the overall economic impact of controlling global warming.

Some cap and trade proposals are designed to be “economy-wide,” to take on the whole of U.S. emissions. Others are or could be limited to the utility, industrial, or transportation sectors or some combination thereof.

### **Cap and Trade Versus Other Options**

The two other most discussed methods of reducing greenhouse gases are a “carbon tax” and direct regulation of emissions similar to the Clean Water Act and other more traditional environmental legislation.

There is nothing inherently superior about a cap and trade program. Many economists ascribe the greatest economic efficiency to the imposition of a tax on carbon. By this line of thought, the higher price will simply shift behavior to lower carbon options of powering the economy. Advocates of cap and trade assert that the lack of flexibility in a tax will cause more economic dislocation than a trading system. Those specifically in favor of a cap on emissions believe that the cap itself is necessary to get the correct amount of reduction in the correct amount of time. They note the difficulty of arriving at the proper tax level to achieve the desired outcome.

Direct regulation is often referred to as “command and control.” While this method has proven to be both effective and cheap in other environmental contexts, it has not been widely considered for greenhouse gas emissions. Other energy legislation, however, such as a renewable electricity standard (RES), a utility energy efficiency standard (EERS), or fuel economy standards for vehicles can constitute pathways for direct regulation of carbon emissions.

Cap and trade currently has the overwhelming share of political momentum in congressional consideration of strategies to control global warming. This could change, but the Sierra Club has come to the conclusion that our highest level of effectiveness lies in advocating within a cap and trade context for a program most likely to succeed and result in maximum reduction of emissions.

### **Basic Elements of Cap and Trade**

Cap and trade theory and practice got its start during deliberation over revisions to the Clean Air Act which resulted in the revamped sulfur dioxide trading program in the 1990 Amendments. It was employed to achieve reductions under the Kyoto Treaty with mixed results. More recently, the Regional Greenhouse Gas Initiative (RGGI) in the Northeast, formulation of a compliance system to implement AB 32 in California, and Congressional legislation such as Sanders-Boxer Global Warming Pollution Reduction Act (S. 309) and McCain-Lieberman Climate Stewardship Act (S. 1151) have engaged more intellectual firepower in the consideration of what makes an effective cap and trade system.

During the past two years, the actual science of global warming – what scientists believe is necessary to control the problem – has begun to be reflected in cap and trade programs. A majority of the new proposals are now written with at least an eye toward the goals that Dr. James Hansen of NASA and other scientists have identified as necessary to have a significant chance to avoid the worst predicted effects of warming, sea level rise, and other changes in the environment. In addition, Hansen has emphasized the need for early action to move away from “tipping points” that would accelerate negative environmental effects.

Several pivotal elements have emerged as common to cap and trade proposals:

- **Long-Term Emissions Reductions Goal** – most commonly, the percentage of total national emissions reduced by 2050;
- **Short-Term Emissions Reductions Goal** – most commonly, the percentage of total national emissions reduced by 2020;
- **Allocation System** – The process and criteria by which the government distributes permits that represent emissions reductions. This includes whether permits are given away or auctioned, to whom they are allocated, the time period in which they are allocated, to what purposes auction proceeds or allocations are distributed, etc. Almost universally, one permit represents a reduction of one ton of carbon;

- **Inclusion of Other Regulatory Policies** – Whether a proposal packages an RES, energy efficiency standard, and fuel economy improvements with a cap and trade program;
- **Offsets** – Investments that a regulated emitter can make in disconnected emission reduction projects (outside of regulated entities) that can “offset” their own existing emissions. Though related in concept, these are different and not to be confused with consumer offsets available today.
- **Cost Containment** – A method to ease requirements for reductions if there is a perceived negative effect on the economy;
- **Enforceability** – The inclusion of some kind of hammer that compels compliance or the presence of loopholes and “off-ramps” that render the system ineffective.

All of these elements mix and match in any given system to determine its overall ability to deliver emissions reductions in line with scientific goals, as well as to do it with positive or negative effects on jobs and the economy.

### **1. Long-Term Emissions Reductions Goal**

This is the level of emissions reductions to which the program aspires to achieve by, usually, mid-century. It is critical to think long term about what needs to be done. Dr. Hansen’s assessment is that the industrialized nations must reduce emissions 60-80 percent by 2050 to have a chance of averting the worst predicted effects of global warming.

Cap and trade proposals should reflect the science of global warming and attempt to divert the most catastrophic effects of climate change. Eighty percent is the level needed to ensure the greatest chance of averting the worst long-term effects. Additional compelling scientific assessments could cause us to increase or decrease that level.

### **2. Short-Term Emissions Reductions Goal**

This is the level of reduction we must achieve by 2020. The scientific assessment that we will either avoid or reach tipping points based on what we do in the next 10 years compels a strong short-term goal. In addition, a strong short-term target facilitates the rapid creation of a regulatory system and puts pressure on it to work out the bugs so that we are in a stronger position to achieve an aggressive long-term goal.

The Sierra Club supports a minimum 15-20 percent target for total carbon emissions reductions by 2020. While the 2050 target is important in both real and symbolic terms, emphasis on an aggressive short-term target is *more* important to both jumpstart the system to achieve reductions to avoid tipping points and to get a strong jump on long-term goals.

### **3. Allocation System**

The structure and design of the allocation system is a huge determining factor in the quality and effectiveness of a cap and trade system. Many in the political process believe the construction of the allocation system can buy votes for its ultimate passage. The allocation system itself contains multiple moving pieces and potential variations including:

- Are permits given away or auctioned?
- To whom are they given; what industry sectors, what public purposes?
- Do some allocations phase out over time or not?
- Does the system lean toward cushioning the transition of polluting industries or driving the emissions reductions that will seed new technologies and create new jobs?
- For what purposes are auction proceeds spent and through what mechanism?

Generally, the Sierra Club favors 100 percent auction of permits and opposes their free allocation to polluting industries. The results of both the Clean Air Act sulfur dioxide trading program and the Kyoto Treaty indicate that free allocations serve as a disincentive for aggressive short-term reductions and can result in windfall profits for their recipients. We acknowledge that directly allocating permits to public purposes is another way to achieve the same goal, but we remain against free allocation of permits to polluters.

### **4. Inclusion of Other Regulatory Policies –**

Both the Sanders-Boxer bill (S. 309) and Waxman Safe Climate Act (S. 1590) directly include the establishment of regulatory programs in three areas: a renewable electricity standard, a utility energy efficiency standard, and increased fuel economy standards. Most other cap and trade bills do not incorporate these provisions into the body of their proposals.

A well-designed cap and trade program can work to control global warming if implemented in concert with a renewable electricity standard, a utility energy efficiency standard, and strong fuel economy standards for vehicles. These policies can be packaged together or separately.

### **5. Offsets**

Offsets are investments in emissions reductions outside of regulated industries. The amount to which they are permitted to be utilized and the criteria for approving offsets is critical to whether they are legitimate alternatives or simply loopholes and fraudulent scams. The consideration of offsets led the northeastern states' Regional Greenhouse Gas Initiative (RGGI) to five criteria for offsets: real, verifiable, additional, permanent, and enforceable. Another critical factor is whether the proposal includes a limitation on how much of an entity's pollution reduction requirement be attained through offsets versus direct reductions in their emissions.

If offsets are to be allowed within a cap, they must be limited and tightly controlled. Agricultural offsets have the potential to be temporary (trees are planted but then cut down). “Harder” offsets like energy efficiency projects have a place in a cap and trade regime, but there may be a more effective place for them in the system rather than as tradeable offsets.

## **6. Cost Containment**

Proposals have been developed to theoretically reduce or stop emissions reductions should there be a perception or reality that reducing global warming emissions is having a severe negative effect on the economy. Some kind of certainty that there will not be an economic collapse due to a global warming program is believed by some to be a necessary component for political acceptance. Some proposals include a “safety valve” to cap the price of permits at a certain level or create a panel to assess the effect of an emissions reductions program on the economy and institute measures should severe effects be determined.

The Sierra Club opposes a safety valve. The success of a program in protecting the country from severe economic effects without derailing the program depends on both the quality of the underlying bill and the parameters set out by the commission itself.

## **7. Enforceability**

Very few of the global warming measures introduced thus far have answered the question of what happens if a regulated entity does not comply. Like any piece of legislation, its level of success will be determined by whether there are teeth in the law to deal with those who avoid compliance. Strong enforcement mechanisms are necessary for any global warming control program.