



Cap and Trade – A Primer

Creation of a greenhouse gas cap and trade program is being discussed across the country as a way to address climate change. Washington State is a partner of the Western Climate Initiative (WCI) – a collaboration between eleven partner states and provinces to identify, evaluate and implement collective and cooperative ways to reduce greenhouse gases in the region via a cap and trade program. The following are some of the basics of a cap and trade program.

What is a Greenhouse Gas Emissions Cap and Trade program?

A cap and trade program is a way to reduce pollution using market forces to achieve cost-effective environmental protection. The basics of cap and trade are straightforward:

The government sets the cap on air pollutant emissions. The cap can be phased in and lowered over time, as needed, to achieve the reduction outcomes needed.

Companies or other qualifying or regulated entities then buy and sell -- trade -- allowances that permit them to emit a particular pollutant. In some cases, companies will buy allowances to cover the amount of emissions they have, and in other cases, the company will reduce its emissions. Some companies will reduce emissions below their amount of allocation and sell the extra allowances, offsetting any costs they incurred to make the reductions.

What are the elements of a Cap and Trade Program?

A mandatory emissions cap. This is the limit on the total tons of emissions that can be emitted. It provides the standard by which environmental progress is measured, and it gives the units of pollutants traded market value. If the cap didn't result in real reductions, the pollutant would not have any market value.

A number of allowances equal to the cap. Government can allocate the allowances to emitters in a number of ways, but the total number of allowances needs to equal the cap to make the program work. Emitters can then buy and sell allowances to meet their needs, so long as they have allowances equal to their emissions when government checks compliance. In the case of a carbon dioxide cap and trade program, each allowance (or credit) gives the owner of the allowance the right to emit one ton of carbon in a given year.

Accurate measurement and reporting. At the end of each compliance period (e.g. 3 years), each source must hold a number of allowances equal to its tons of emissions for that period. Measurement and reporting of the emissions must be transparent and accurate.

Appropriate enforcement. To ensure confidence in the market so that carbon has value and innovation occurs to reduce carbon, the cap must be real. All elements of the program – ensuring emissions do not exceed the cap, that sources have sufficient allowances to cover their emissions, that reporting is accurate – must be backed up by appropriate enforcement mechanisms.

How is Cap and Trade Different from a Tax?

Cap and trade **sets the limit** for emissions and lets the market work out the costs of hitting that limit. A tax **sets a price** for emissions and lets the market work out how much of a reduction in emissions will happen.

Both can work if designed and implemented properly, but the challenges are different. A tax provides price stability for those who will pay it, but the environmental benefit is not assured because emissions will not fall if

people are willing to pay higher costs. Cap and trade provides certainty of environmental performance but the costs are uncertain and will vary over time.

Cap and trade and a tax have to address many of the same issues. Both cap and trade and a carbon tax use economic incentives to promote least-cost emission reductions and drive climate-friendly innovation. Both approaches would require careful monitoring and enforcement, and both must address the question of how to distribute costs and benefits. For cap and trade that means figuring out how to distribute and/or auction emission allowances; under a tax that means figuring out who pays the tax and what to do with the tax revenue.

Why Cap and Trade?

Cap and trade has emerged as the most popular climate policy solution-advocated by both major US presidential candidates, by Western governors participating in the Western Climate Initiative, and currently under consideration in the US Congress and in parts of Canada.

Which is better – Auctioning Allowances or Giving Them Away?

Once the cap has been set and the overall design of the cap and trade program established, choices have to be made about the best way to distribute emissions allowances. There are two basic approaches to allowance distribution: some form of free allocation, or some form of auction. A combination of the two is also possible.

Several types of free allocation exist. Allowances can be given away for free based on participating entities' historical emissions (sometimes known as "grandfathering"). Output-based methods of allowance allocation are based on the output of a product in a given sector. For example, allowances might be distributed based on megawatt-hours generated or tons of a product manufactured. Benchmarking, or setting a level of emissions (in the form of allowances) per unit, can be applied based on input or output. There are tradeoffs between simplicity and equity if allowances are distributed for free. For example, basing allocation on historical emissions is relatively simple. However, it means that some form of credit for early action would be needed to ensure that firms who took voluntary measures to reduce their emissions before the base year are not penalized for doing so

There are plenty of varieties to an auction system, but generally, companies will purchase as many allowances as they think they need, but if they're high or low, the allowance trading market will allow them to purchase additional allowances from other companies. Alternatively, companies that find it easy to reduce their emissions can sell their excess allowances to others.

As with free allocation, there are tradeoffs involved with auctioning allowances. The impact of costs on a given firm depends on the competitiveness of the industry in which the firm operates as well as that industry's regulatory environment. In some cases, auctioning may unfairly hurt participants lacking the funds to purchase enough allowances. This is especially true for firms who cannot pass on some or all of the costs of their allowances to consumers. For industries that can pass along costs, such as electric utilities, their customers may see an unprecedented increase in their utility bill.

Initially, the WCI was recommending each partner state or province auction a minimum percentage, between 25 percent and 75 percent, of its allowance budget through a coordinated regional auction process. Each partner would auction allowances throughout the WCI region and will receive the proceeds of the auction. The issue of establishing a minimum percentage of allowances subject to auction by each Partner is still under discussion by the Partners. The Partners expect to make a recommendation on this issue by Fall, 2008.

The WCI is recommending that each partner state or province initially have discretion to issue allowances differently to different sectors within its jurisdiction. Each Partner may decide how and to whom to issue the allowances in its allowance budget, subject to the minimum auction requirement and sector-specific assessments of competition. The WCI recognizes that a diverse array of allocation procedures could yield significant cost differentials among competing firms or industries among WCI jurisdictions. There may be cases

where it is necessary to assess whether allocations to a particular sector should be treated uniformly by all Partners in the WCI region to address competition among entities within the WCI region.

Cap and Trade in Washington State

As mentioned above, Washington State is one of eleven independent jurisdictions at the table negotiating the design of a regional cap and trade program – the Western Climate Initiative (WCI). Pursuant to legislation passed in 2008, the Washington State Departments of Ecology and Community Trade and Economic Development must provide recommendations to the Legislature by December 1, 2008, for approval and request for authority to implement the preferred design of this regional cap and trade program. The recommendations must include: proposed legislation, necessary funding, changes to reporting requirement, and actions to prevent market manipulation.

On July 23, 2008, the WCI Partners released their “Draft Design of the Regional Cap and Trade Program.” Public comments are due by August 13, 2008. For more information on the WCI, including a link to the Draft Design, meeting dates and instructions for submitting public comments can be found at: http://www.ecy.wa.gov/climatechange/wci_stakeholders.htm.

Cap and Trade Key Terms

Additionality: Emissions reductions achieved through a given project (or class of projects) over and above those that would otherwise have occurred in the absence of the project(s) under a business-as-usual scenario. *Additionality* is a criterion for approval of project-based activities (offsets) under the Clean Development Mechanism of the Kyoto Protocols as well as offset projects allowed for credit under other emissions trading programs.

Allowance: A government-issued authorization to emit a certain amount of a pollutant. In greenhouse gas markets, an allowance is commonly denominated as one ton of CO₂ per year. Used interchangeably with “permit” and “credits (a.k.a. carbon credits).” The total number of allowances distributed to all entities in a cap and trade system is determined by the size of the overall cap on emissions.

Allowance distribution: The process by which emissions allowances are initially distributed under an emissions cap and trade system. Authorizations to emit can initially be distributed in a number of ways, either through some form of auction, free allocation, or some of both.

Auctioning: A method for distributing emission allowances in a cap and trade system whereby allowances are sold to the highest bidder. This method of distribution may be combined with other forms of allowance distribution.

Banking: The carry-over of unused allowances or offset credits from one compliance period to the next.

Baseline: The target, often the historical emissions from a designated past year, against which emission reduction goals are measured.

Benchmarking: An allowance allocation method in which allowances are distributed by setting a level of permitted emissions per unit of input or output.

Borrowing: A mechanism under a cap-and-trade program that allows covered entities to use allowances designated for a future compliance period to meet the requirements of the current compliance period. Borrowing may entail penalties to reflect a programmatic preference for near-term emissions reductions.

Command and Control: A system of regulation that prescribes emission limits and compliance methods on a facility-by-facility or source-by-source basis and that has been the traditional approach to reducing air pollution.

Cost Containment Mechanisms: Design elements in a cap-and-trade program that reduce the risk of high or volatile compliance costs for affected facilities or industries.

Credits: Credits can be distributed by the government for emission reductions achieved by offset projects or by achieving environmental performance beyond a regulatory standard.

Downstream (source-based) System: Also known as a source-based system, a downstream cap-and-trade system is one in which the point of regulation coincides with the point of emission of covered greenhouse gases. Examples of this approach include the Regional Greenhouse Gas Initiative's cap on power plant CO₂ emissions or the cap on large industrial and utility sources in the European Union's Emissions Trading Scheme.

Emissions Cap: A mandated constraint in a scheduled timeframe that puts a "ceiling" on the total amount of anthropogenic greenhouse gas emissions that can be released into the atmosphere.

Emissions Trading: The process or policy that allows the buying and selling of credits or allowances created under an emissions cap.

First Seller Approach: Under a first-seller approach, the entity that first sells electricity in the state is responsible for compliance. Within Washington, the owner or operator of a power plant is the first seller and would be required to meet the cap on emissions. For imported power, the first seller is typically an investor-owned or municipal utility or wholesale power marketer.

Grandfathering: A method by which emission allowances are freely distributed to entities covered under an emissions trading program based on historic emissions.

Greenhouse Gases (GHGs): Greenhouse gases include a wide variety of gases that trap heat near the Earth's surface, slowing its escape into space. Greenhouse gases include carbon dioxide, methane, nitrous oxide and water vapor and other gases. While greenhouse gases occur naturally in the atmosphere, human activities also result in additional greenhouse gas emissions. Humans have also manufactured some GHGs not found in nature (e.g., hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) that slow the release of radiant energy into space.

Leakage: When emitters move to avoid regulation. One of the major challenges facing WCI is the potential for "leakage" of emissions to jurisdictions outside of the WCI region. An allocation scheme focused on generators of GHGs that are physically located in the WCI region raises the possibility that utilities and their customers may respond to higher in-region generation costs by importing lower-cost, higher-emissions power from outside the WCI region. These additional emissions would be linked to consumption, but not generation, within the WCI region, and thus would not be captured under a generation-based allocation scheme.

Linking: Authorization by the regulator for entities covered under a cap and trade program to use allowances or offsets from a different jurisdiction's regulatory regime (such as another cap and trade program) for compliance purposes. Linking may expand opportunities for low-cost emission reductions, resulting in lower compliance costs.

Offset: Projects undertaken outside the coverage of a mandatory emissions reduction system for which the ownership of verifiable GHG emission reductions can be transferred and used by a regulated source to meet its emissions reduction obligation. If offsets are allowed in a cap and trade program, credits would be granted to an uncapped source for the net emissions reductions a project achieves. A capped source could then acquire these credits as a method of compliance under a cap.

Point of Regulation: The point of program enforcement, or where specific emitting entities covered under a cap and trade program are required to surrender enough allowances to match their actual emissions within a compliance period.

Product- or Load-Based System: A system in which the covered emitters are responsible for all the emissions associated with the generation of the electricity, natural gas, or other product that they provide to customers.

Source: Any process or activity that results in the net release of greenhouse gases, aerosols, or precursors of greenhouse gases into the atmosphere.

Updating: A form of allowance allocation in which allocations are reviewed and changed over time and/or awarded on the basis of changing circumstances rather than historical data. For example, updating can be based on megawatt-hours generated or tons of a product manufactured.

Upstream system: An upstream approach to a cap-and-trade system places the point of regulation with the point of entry of fossil fuels into commerce within the covered region.