

CAP AND TRADE – THE ECONOMICS OF CARBON TRADING

There is no doubt that the earth's environment is changing. Some say that this is a direct result of human activity and others maintain it is a natural occurrence that would take place whether humans were present or not. Whichever position is actually correct, there is no reason that society should not try to reduce emissions into the environment and, at the same time, curb the rapidly growing consumption of the earth's limited supply of natural resources.

The Pollution-Free Planet Foundation has received several inquiries about what Cap and Trade means and how it relates to the environment and global warming. This article is our attempt to explain this unique concept.

What is Cap and Trade?

Cap and Trade is an approach to controlling pollution by providing economic incentives to polluters for reducing emissions. Successful cap and trade programs provide strict environmental accountability without inhibiting economic growth, and reward innovation, efficiency, and early action.

A government sets a limit (cap) on the total quantity of the pollutants that are covered by the particular program. Pollution sources, usually industrial plants, purchase allowances (trade) for specific quantities they are allowed to emit. The total emissions for each substance cannot exceed the cap. Companies that exceed their allowances can either reduce their emissions or they can purchase additional allowances, or both, depending on the relative cost of reduction and the purchase of allowances. Credits are usually auctioned off by the government. This provides income to fund the program as well as for financing technological advances in pollution controls and renewable energy.

The largest trading program in existence currently is the European Union Emission Trading Scheme that trades in greenhouse gases. There is a national market in the U.S. to reduce acid rain and a few regional markets for nitrous oxide.

The cap and trade approach is best used when the environmental concern occurs over a relatively large area; a significant number of sources are responsible for the pollution; the cost of reduction varies from one source to another; and the emissions of each source can be consistently and accurately measured.

Carbon trading is considered by some to be preferable to a direct tax program or government regulation. For one thing, it invests the funds directly into reducing pollution rather than spending tax dollars on large inefficient government bureaucracies or instituting legislated programs, many of which often miss the mark.

A well designed Cap and Trade Program establishes limits on emissions with dramatic results, all for less cost than government regulatory programs. Among these results are: predictable overall emission reductions, flexibility for individual sources, economic incentives for pollution generators and governments, innovations in technology, significant and widespread human health and environmental benefits, efficient use of government resources, and high levels of compliance, transparency, and accountability.

C & T History

The forerunner to Cap and Trade was first demonstrated during the 1970's in a computer simulation performed by Ellison Burton and William Sanjour for the National Air Pollution Control Administration, the predecessor to the EPA Air Office. These studies compared the cost and effectiveness of various governmental control strategies with those of the most economical commercial methods of reducing pollution at the sources. Not surprisingly, it was found that in every case, reduction by private industry was more cost effective than regulation and control by the government. This led to the concept of Cap and Trade to achieve the least costly means of abatement.

The first mention of this principle occurred in the Clean Air Act of 1977. Subsequently, a prototype program to reduce acid rain was launched in the United States. Later, the European Union adopted the system and the carbon trading industry was born.

How It Works

Since the overall goal of a cap and trade program is to reduce pollution, the caps are usually reduced as time passes. In some cases, a percentage of the traded credits are retired at each transaction reducing the total quantity of allowances available. Some systems allow groups which do not pollute to also purchase credits, thus enabling environmental groups to acquire and retire allowances, driving up the prices on the remaining credits by the law of supply and demand. It also allows corporations to donate excess allowances to nonprofit organizations and reap the benefit of a tax deduction for a no-cash contribution.

Whether a particular country uses regulation, taxation, or trading to achieve abatement is dependent, among other things, upon the relative cost of eliminating the targeted amounts of pollution. It may be less costly for China to eliminate a ton of Carbon Dioxide by regulation than for the United States or Sweden, for example. International emissions-trading markets are the perfect means for leveling the playing field of various abatement costs from one country to another.

As an example, consider that Germany & Sweden both have limits on CO₂ emissions. Each can reduce their emissions to the limit or they can buy or sell on the carbon market. Suppose that Germany can abate its CO₂ at half the cost per unit of Sweden. If the difference in the relative costs is great enough, it might be more economical for Sweden to purchase its emissions credits from Germany. At the same time, Germany will make a profit by abating more emissions than was required and selling its surplus credits to Sweden.

The nature of the pollutant is important in determining the type of framework used to handle pollution. Some materials, like sulfur dioxide, nitrous oxide, or mercury, impact a local area and need to be handled locally. Carbon dioxide is a global pollutant and can be traded worldwide. It has been found that widespread emissions, such as CO₂, make for a more effective Cap and Trade program than smaller regional based pollutants.

Renewable Energy Credits

In the United States Renewable Energy Credits, also known as Green tags, or Tradable Renewable Certificates, are tradable environmental commodities. Each credit represents proof that 1 megawatt-hour (MWh), or 1,000 kilowatt-hours, of electrical power have been produced from renewable sources. For each megawatt of solar power generating

capacity, approximately 200 megawatt hours of electrical power per month are produced. Each credit can be worth from \$5 up with a median of about \$20.

Where many states have set mandatory goals of renewable energy generation for electrical utilities, the utility companies will buy credits from private generators to add the privately generated power to their goal.

Current activities in the United States

During the long Presidential campaign leading up to the 2008 election, Candidate Obama promised that, if elected, he would establish an economy-wide cap-and-trade program that was intended to drastically cut U.S. greenhouse gas emissions by 2050. The concept was that the best way to reduce pollution was to put a price on it. Now, as President, he is working on keeping his promise by proposing to reduce U.S. emissions 14% below 2005 levels by 2020 and 83% below by 2050. At the same time his plan would raise \$646 billion between 2012 and 2019 by auctioning carbon credits. This would effectively put a price on pollution

Some critics call Cap & Trade a carbon tax and argue that it penalizes those who are least able to pay, the poor. Others maintain that a carbon tax puts the real cost of fossil fuels in the hands of those who use it. By "real cost", we mean the cost of maintaining a military that protects the oilfields, pipelines, and shipping lanes, the environmental cost that takes the lives of uncounted wildlife and cleans up disastrous oil spills, and the huge healthcare costs for mitigating the direct and indirect effects of fossil fuels on public health through air and groundwater pollution. With this plan, the move to renewable energy will become competitive with fossil fuels at an earlier date.

After much study, the Pollution-Free Planet Foundation has concluded that many different approaches will be necessary to bring society's detrimental influence on the environment under control. Cap and Trade is one of a number of tools that are currently effective in reducing emissions of pollutants into the atmosphere. It is our obligation to save the environment for future generations by using our planet's resources responsibly.

Bill Chase - May 10, 2009