

Keeping costs low, now and in the future

GUARANTEED RESULTS

Because total pollution is capped, we know we'll get the emissions reductions we need.

LOW COSTS NOW

A cap on greenhouse gases would put a price on pollution, creating a powerful economic incentive for emitters to find the cheapest possible ways to reduce emissions.

Allowing farmers and foresters to participate by voluntarily sequestering carbon in a verified way could bring costs down significantly. Accommodating forest credits from abroad—as long as they represent real emissions reductions under a cap—would lower costs even further.

INNOVATIONS FOR THE FUTURE

A carbon market would reward the entrepreneurs and innovators who develop the next generation of clean technologies. For big companies required to make reductions, every ton of pollution that is not emitted is worth real dollars in the form of unused allowances that could be sold on the open market. A cap-and-trade system lets the market find the best solutions, rather than having the government try to pick winners.

5 simple steps to cap and trade

1 SET THE CAP

Guided by climate science, the government sets the cap on overall greenhouse gas emissions.

2 ALLOCATE PERMITS

The government assigns "allowances," with each representing a ton of carbon dioxide emissions, so that their total number equals the cap. Allowances can be distributed to firms for free, or auctioned off.

3 MEASURE EMISSIONS

Firms monitor and report their emissions. Electric utilities, for example, already have equipment installed on smokestacks of power plants that measures pollution in real time and sends the data to EPA.

4 ENSURE COMPLIANCE

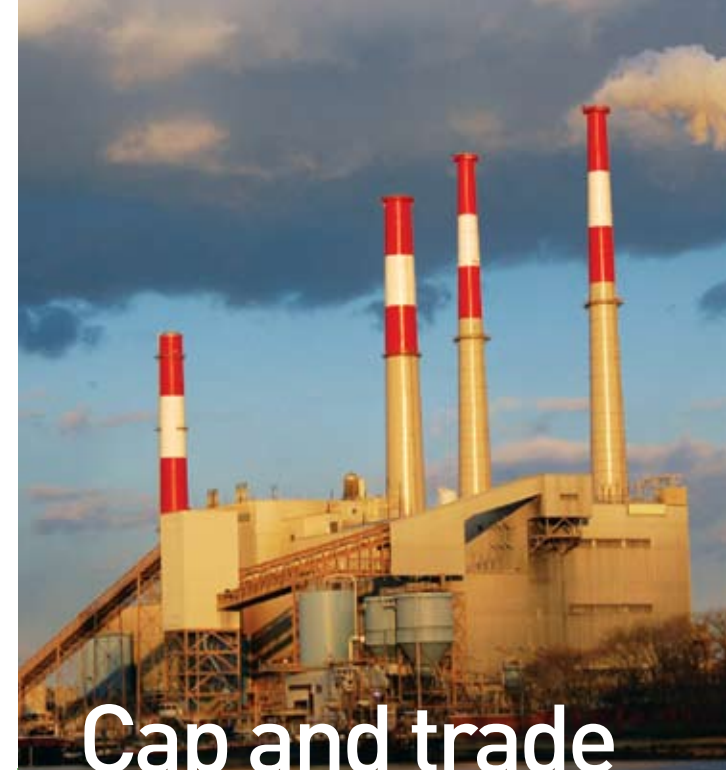
At the end of each year, every regulated firm turns in enough allowances to cover its emissions.

5 GUARANTEE FLEXIBILITY

The market provides flexibility in how firms can meet their targets. They can reduce emissions, buy allowances or use "banked" allowances from earlier years.

Additional booklets in this series:

- **US cap-and-trade program for acid rain**
"The greatest green success story of the past decade"
- **Clearing the air on EU's carbon market**
Experience and lessons learned



Cap and trade 101

Cap and trade harnesses the power of the market to fight global warming. The cap on emissions guarantees the environmental results we need. Trading gets it done in the cheapest way possible.



ENVIRONMENTAL DEFENSE FUND

finding the ways that work

ENVIRONMENTAL DEFENSE FUND

257 Park Avenue South, New York, NY 10010
1-800-684-3322 • members@edf.org • www.edf.org

Austin • Boston • Boulder • Los Angeles • New York • Raleigh
Sacramento • San Francisco • Washington
Project offices: Beijing, China, and Bentonville, AR

© 2008 Environmental Defense Fund • Rev. 5/23/2008

The power of a simple idea

Behind cap and trade lies a simple idea: the market can be a powerful tool for achieving environmental progress. Congress—backed by science—sets the targets. The market figures out how to achieve them at the lowest possible cost.

The trading system creates a strong profit incentive for firms to develop new and innovative technologies. The cap-and-trade program we designed to curb acid rain has cut sulfur dioxide pollution faster than expected, at a fraction of the predicted cost.

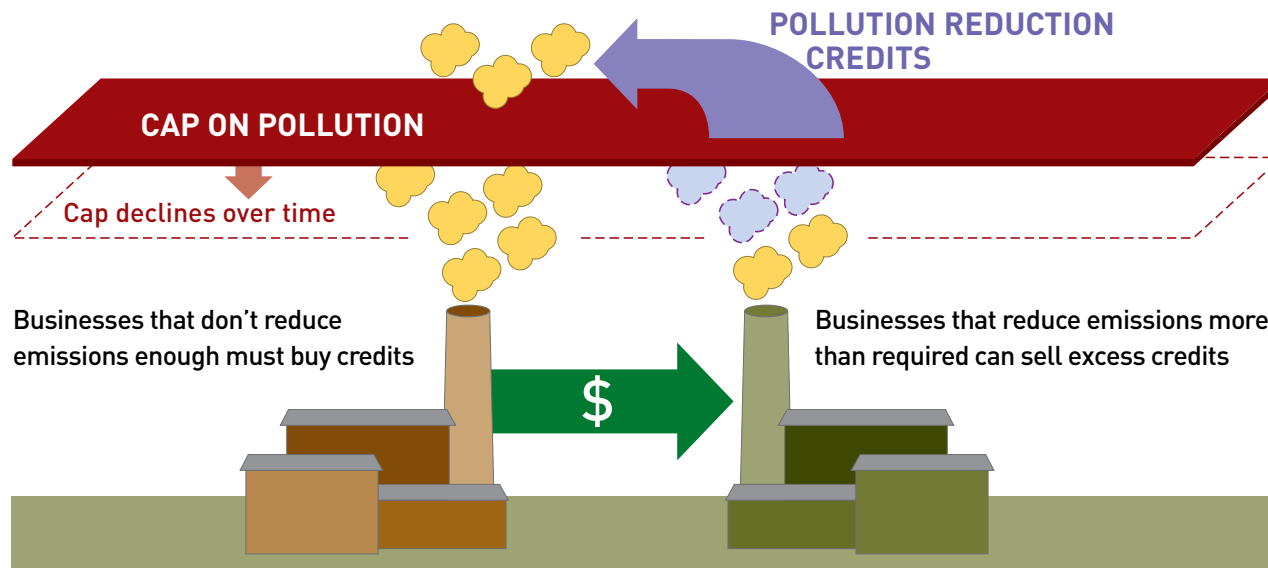
CAP and TRADE

The cap is what ensures the environmental goals of the program are met. It establishes a mandatory limit on total greenhouse gases released into the atmosphere.

In the first few years of a cap-and-trade program, the cap could be set just below where emissions are today. Over time, the cap would be lowered, allowing for low-carbon infrastructure to be put in place. The near-term targets ensure that we start reducing emissions right away.

- Trading is the key to keeping costs down. It lets the market, not the government, figure out where and when to cut emissions and who can do it most cheaply. And because the overall cap is in place, we can be sure that total emissions are reduced.
- Cap-and-trade programs also allow firms to bank and even borrow allowances—essentially permitting firms to trade among themselves. This keeps costs down by letting firms determine the timing of emissions reductions that makes the most sense for them.

How cap and trade works



A cap-and-trade system limits the amount of carbon emissions (**the cap**) and allows clean technology users to sell their carbon credits to businesses that do not meet their targets (**the trade**).

Getting to less

A SIMPLE EXAMPLE

Consider the case of two hypothetical power plants. Utility A can cut emissions for \$5 a ton by improving its operating efficiency; Utility B can improve its efficiency some, but needs to spend \$40/ton to switch from coal to natural gas in order to make equivalent reductions. If both are required to reduce emissions by the same amount, the result will be higher costs than necessary—since it would have been cheaper for Utility A to take on a larger share.

Trading enables emissions reductions to be made by the firms that can do them at the lowest cost. Let's say the market price for allowances is \$20 per ton. Since Utility A can cut emissions for only \$5 a ton, it will do much more than required—selling the extra tons on the market, at a profit of \$15 apiece. Utility B, meanwhile, finds it attractive to buy allowances on the market. It saves \$20 on every ton, without having to switch to natural gas.

The result? Overall **costs go down**, because abatement is done at lower cost. In addition, **both companies gain from trade**. The low-cost Utility A profits from selling its extra allowances on the market, and the higher-cost Utility B gains because it can comply at lower cost.

Best of all, because the declining cap keeps a lid on total emissions, they are guaranteed to go down. By keeping costs low, a cap-and-trade program means that we can afford more ambitious emissions reductions. **The environment wins as well.**