

# Cap and Trade:

## Essentials



*Cap and trade is an environmental policy tool that delivers results with a mandatory cap on emissions while providing emission sources flexibility in how they comply. Successful cap and trade programs provide strict environmental accountability without inhibiting economic growth, and reward innovation, efficiency, and early action.*

### What Is Cap and Trade?

Cap and trade is a policy approach for controlling large amounts of emissions from a group of sources. The approach first sets an overall cap, or maximum amount of emissions per compliance period, for all sources under the program. The cap is chosen in order to achieve a desired environmental effect. Authorizations to emit in the form of emission allowances are then allocated to affected sources, and the total number of allowances cannot exceed the cap. Individual control requirements are not specified for sources; instead, sources report all emissions and then surrender the equivalent number of allowances at the end of the compliance period. Allowance trading enables sources to design their own compliance strategy based on their individual circumstances while still achieving the overall emissions reductions required by the cap. Affected units can tailor their compliance plans to each source. Compliance strategies in well-designed cap and trade programs require no prior approval, allowing sources to respond quickly to market conditions and government regulators to remain focused on results. Sources must

also accurately measure and report all emissions in a timely manner to guarantee that the overall cap is achieved.

### When Is Cap and Trade Effective?

In EPA's experience, cap and trade programs have proven highly successful in the context for which they are best suited: reducing emissions on a regional or larger scale from multiple sources that exhibit a range of control costs. While achieving significant reductions on a regional scale, cap and trade programs can deliver substantial air quality improvements. As effective as these programs are, however, they may not be the solution to every problem. For example, eliminating localized concentrations of pollution is not their primary purpose. The cap and trade approach is best used when:

- the environmental and/or public health concern occurs over a relatively large area;
- a significant number of sources are responsible for the problem;
- the cost of controls varies from source to source; and
- emissions can be consistently and accurately measured.

*The remarkable efficiency and reduced costs of a cap and trade program should not overshadow the purpose of the cap – that is, to yield public health and environmental results.*

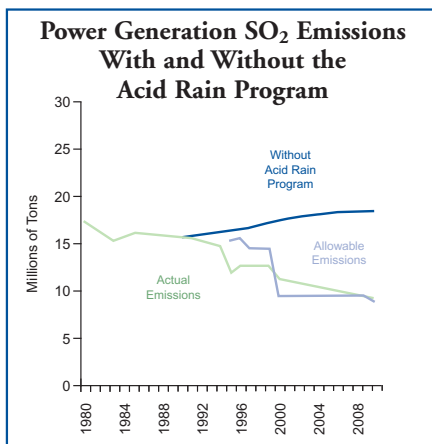
Under the right circumstances, cap and trade programs have proven extremely effective,

providing substantial emission reductions, complete accountability and unprecedented data quality and access. Existing cap and trade programs – the Acid Rain Program and the NO<sub>x</sub> Budget Program – have the force of federal and state standards behind them, including national health-based air quality standards. This ensures that local public health needs are met in conjunction with achievement of regional or national emission reductions.

### Guiding Principles for Program Design

Three features critical to designing and implementing environmentally effective and economically efficient trading programs are 1) the cap on emissions, 2) accountability, and 3) simplicity of design and operation.

**Cap on Emissions.** The cap on emissions is the central element of an effective and efficient cap and trade program. A mandatory cap on emissions is critical to protect public health and the environment and to sustain that protection into the future. The cap also serves to provide stability and predictability to the allowance trading market.



SO<sub>2</sub> emissions have been reduced dramatically under the Acid Rain Program. Early reductions under the first phase of the program were banked to provide a gradual transition into the more stringent second phase.

Source: [www.epa.gov/airmarkets](http://www.epa.gov/airmarkets)



**Accountability.** The accurate measurement and reporting of emissions is essential, along with the rigorous and consistent enforcement of penalties for fraud or noncompliance. Also critical is transparency, such as public access to source-level emissions and allowance data. The coupling of stringent monitoring and reporting requirements and the power of the Internet makes it possible for EPA to provide access to complete, unrestricted data on trading, emissions, and compliance. This promotes public confidence in the environmental integrity of the program and business confidence in the financial integrity of the allowance market. It also provides an additional level of scrutiny to verify enforcement and encourage compliance. Finally, accountability requires ongoing evaluation of the cap and trade program to ensure that it is making progress toward achievement of its environmental goal.

*Allowance trading enables sources to design their own compliance strategy based on their individual circumstances while still achieving the overall emissions reductions required by the cap.*

**Simplicity.** Rules should be clear and easily enforced. Markets function better and transaction costs are lower when rules are simple and easily understood by all participants. Moreover, the environment is more likely to be protected when rules are clear and consistently enforced. To the greatest extent possible, simplicity should be applied to all elements of the program, including applicability thresholds (determining which sources are affected), trading rules, reporting requirements and penalty assessments. Program operation for both emission sources and regulating authorities is more certain, more effective, and less costly and time-consuming if the rules are not overly complex and burdensome.

A well-designed cap and trade program delivers:

- Greater environmental protection at lower cost
- Broad regional reductions, facilitating state efforts to address local impacts
- Early reductions, a result of allowance banking and market incentives
- Environmental integrity and transparent operations and results
- Fewer administrative costs to government and industry
- Efficiency and innovation incentives
- Incentives for doing better and consequences for doing worse
- Accounting for all emissions
- Partnership with existing requirements to ensure protection of the local population and environment.

## Continued Accountability

As the cap and trade mechanism is applied to new environmental problems, EPA is very cognizant of the importance of ongoing assessment to ensure that environmental and public health goals are met. The remarkable efficiency and reduced costs of a cap and trade program should not overshadow the purpose of the cap – that is, to yield public health and environmental results. Whether the cap has been set at a level adequate to achieve the desired public health and environmental protections is an issue that warrants study and evaluation. The Acid Rain Program and the NO<sub>x</sub> Budget programs have been highly effective in reducing emissions. Though long-term environmental monitoring has affirmed the programs' effectiveness, studies have shown that further reductions in emissions beyond the current caps are necessary to protect public health and the environment.

EPA continues to closely monitor and publish results, and is pursuing additional analyses of localized impacts under cap and trade programs in order to help inform ongoing evaluation and policy making.

For more information, see “Tools of the Trade: A Guide to Designing and Operating a Cap and Trade Program for Pollution Control”  
<http://www.epa.gov/airmarkets/international/tools.pdf>