



## COST CONTAINMENT

Cap-and-trade programs are designed to increase the economic efficiency of emissions reductions and lower costs beyond command-and-control approaches alone. Cap-and-trade programs often incorporate features that add flexibility and/or increase price certainty to help address cost concerns. This fact sheet describes several common examples of cost containment mechanisms.

### WHAT FACTORS DETERMINE THE COST OF A CAP-AND-TRADE PROGRAM?

Many aspects of cap-and-trade design impact the cost of compliance. For example, decisions regarding the allocation and auction of allowances, implementation of complementary greenhouse gas (GHG) reducing measures such as renewable energy standards and improved vehicle efficiency standards, and government support for technology research and development will have significant impacts on cost.

### WHAT IS COST CONTAINMENT?

Cap-and-trade programs for GHGs often incorporate additional mechanisms to reduce overall economic costs or provide additional price certainty for affected companies without requiring future legislative intervention. Recent efforts have focused on developing cost containment provisions that do not compromise the environmental goals of the cap-and-trade program. These provisions typically modify rules related to compliance period length, offsets, borrowing, and auctions. However, they could also involve policies to mitigate demand for allowances, such as additional investments in energy efficiency and low-carbon technologies.

### HOW DO COMPLIANCE PERIODS AFFECT COMPLIANCE COSTS?

A longer compliance period may help reduce costs by mitigating the impacts of fluctuations in business cycles, weather events, and fuel prices. Companies are typically not required to hold allowances (certificates representing the right to emit GHGs) equal to their running total of emissions during the entire compliance period. Instead, regulated companies are required to hold allowances equal to their emissions when a compliance period comes to a close. Compliance is monitored by the regulatory agency through a process commonly referred to as “true-up.” In the United States, a two or three-year compliance period has become the norm for greenhouse gases cap-and-trade design. In the Northeastern Regional Greenhouse Gas Initiative (RGGI), sustained high prices will cause the compliance period to extend from three to four years.

### WHAT ROLE DO CARBON OFFSETS PLAY IN MANAGING COMPLIANCE COSTS?

Cap-and-trade programs for greenhouse gases (GHGs) typically allow regulated companies to reduce their GHG emissions by purchasing offsets, which are emissions reductions in non-regulated sectors. Reductions through offsets can sometimes be less expensive to achieve than reductions within the firm, thereby reducing the costs of compliance. However, at times it can be challenging to ensure the quality of offsets.<sup>1</sup> Cap-and-trade programs that allow the use of offsets tend to have limitations on the number of offsets allowed for compliance to ensure that some GHG reductions occur from within capped sectors.

### WHAT ROLE DOES BORROWING PLAY, AND HOW DOES IT DIFFER FROM BANKING?

Banking and borrowing provide flexibility for regulated companies, allowing them to make additional reductions early or postpone reductions in response to market factors.

**Banking:** Virtually all cap-and-trade programs and proposals provide for the banking of allowances. Banking allows firms to hold “spare” allowances and use them in a later compliance period. This can give companies the ability to execute long-term compliance strategies that result in greater emissions reductions early in the emissions reduction schedule. Because firms undertaking aggressive reductions in the short-term would see their long-term compliance obligations relieved, banking may help to relieve overall program costs and temper price fluctuations.

**Borrowing:** Borrowing allows companies to exceed early emission reduction caps in exchange for greater emission reductions in the future. This can reduce allowance prices in the near term, but increase allowance prices in the future. Borrowing is somewhat more controversial than banking because the provision is subject to the government’s enforcement of future targets. If companies suspect they can lobby for weaker future targets, they may borrow heavily and count on relief from sympathetic legislators later. Borrowing also creates risk of default

1. Outside The Cap: Opportunities and Limitations of Greenhouse Gas Offsets. Derik Broekhoff & Kathryn Zyla. World Resources Institute. 2008.

if the borrowing entity goes out of business. This would compromise the environmental goals of the program. Due to these concerns, borrowing has been viewed cautiously, and has been excluded from United States SO<sub>2</sub> and NO<sub>x</sub> trading programs, as well as the European Union Emissions Trading Scheme (EU ETS) and RGGI. The leading bills in Congress allow borrowing with interest, but impose limits on how many allowances may be borrowed in any compliance period.

#### **WHAT IF ALLOWANCE PRICES ARE TOO LOW AND WHAT IS A PRICE FLOOR?**

If carbon prices are too low, it can stall investment in essential low-carbon technologies. In past market-based regulatory programs, a variety of factors have caused lower than expected prices. For example, in RGGI, the unexpected switching of relative natural gas and residual oil prices caused emissions to fall below the cap, leading to very low allowance prices.<sup>2</sup> To ensure a sufficient price signal, the quantity of offsets may be reduced, or borrowing mechanisms may be constrained. Alternatively, allowance supply can be constrained either by reducing the cap, or by implementing a “price floor” in allowance auctions. Price floors are typically used in an auction to prevent against collusion. However, the price floor can be raised and unsold allowances removed from the market by retiring them, or they may be set aside for later release if allowance prices rise too high.<sup>3</sup>

#### **WHAT ARE PRICE TRIGGERS AND HOW DO THEY WORK?**

Price triggers are mechanisms to address costs when prices reach unexpectedly high or low levels. These triggers may lead to automatic changes in offset limits, borrowing provisions, changes in compliance periods, or auction price floors. They can also trigger implementation of a price cap or an allowance auction reserve.

A **price cap** (also commonly referred to as a **safety valve**) establishes an allowance price ceiling to ensure that the mandatory cost of carbon mitigation does not rise above a given level. While a price cap is a transparent way to provide companies regulatory certainty, the mechanism can compromise the emissions cap established for the program. For this reason, it is highly controversial and has not been included in any of the three regional U.S. trading programs or the EU ETS.

An **allowance auction reserve** would make additional allowances available through an auction that begins at a specified price. The allowance reserve can maintain the integrity of the

emissions cap by using allowances set aside from previous control periods. For example, the Midwestern Accord calls for 2 percent of allowances to be set aside each year in a cost containment pool for auction if allowance prices spike. The reserve can also build up over time if allowances go unsold at auction.

A **price collar** pre-defines a desired range of trading prices for allowances, and creates price triggers to modify program parameters if prices move too high or too low. This approach has been incorporated into the Midwestern Accord and has been discussed in the context of a national cap-and-trade program.

#### **HOW DO PRICE TRIGGERS IMPACT MARKET VOLATILITY AND INVESTMENT CERTAINTY?**

Allowance prices, like other traded commodities, can vary within a compliance period, month to month, day to day, and hour to hour. While some of this volatility can be smoothed by the mechanisms discussed in this document (e.g., banking, borrowing, and multi-year compliance periods), some volatility should be expected. As price triggers are employed, it is important to ensure that volatility will not be exacerbated by a response to high or low prices that are temporary. Instead, price triggers should seek to correct long-term market trends. RGGI, for example, incorporates price triggers based on a 12-month rolling average price, after allowing for a 14-month market settling period at the start of each new compliance period. It is also important to note that changes in market rules (and subsequent impacts on allowance prices) can present long-term planning and investment challenges.

#### **WHAT OTHER POLICY TOOLS MAY BE AVAILABLE TO MANAGE UNCERTAINTY IN ALLOWANCE PRICES?**

As an alternative to including automatic mechanisms within cap-and-trade design, an oversight body or review board could evaluate when prices have exceeded a level acceptable to the market. Under various versions of this proposal, the oversight body could loosen or tighten restrictions on offsets or allowances. Because market oversight may add another variable to investment decisions, it is essential that the board have a clear, transparent and effective governance structure.

#### **ADDITIONAL REFERENCES**

- The Bottom Line on Cap-and-Trade  
<http://www.wri.org/publication/bottom-line-cap-and-trade>
- The Bottom Line on Regional Cap-and-Trade Programs  
<http://www.wri.org/publication/bottom-line-regional-cap-and-trade-programs>
- Marika Tatsutani and William A. Pizer, “Managing Costs in a U.S. Greenhouse Gas Trading Program: A Workshop Summary”  
<http://www.rff.org/documents/RFF-DP-08-23.pdf>

2. Environment Northeast, *Emissions Trends and the Inaugural Allowance Auction: Regional Greenhouse Gas Initiative*. September 3, 2008.

3. Burtraw, D., Goeree, J., Holt, C., Palmer, K., Shobe, W. *Auction Design for Selling CO<sub>2</sub> Emission Allowances Under the Regional Greenhouse Gas Initiative*. [www.rggi.org](http://www.rggi.org).