

November 30, 2016

Comments on: **The Emissions Containment Reserve Proposal  
for the Regional Greenhouse Gas Initiative**

Submitted by:

Dallas Burtraw, Resources for the Future, <[burtraw@rff.org](mailto:burtraw@rff.org)>

William Shobe, University of Virginia, <[shobe@virginia.edu](mailto:shobe@virginia.edu)>

---

*These comments are submitted in consideration of the emissions containment reserve proposal currently being considered as part of the program review for the Regional Greenhouse Gas Initiative. We are supportive of the idea. These comments address the reasoning for the proposal and how the reserve could be implemented.*

The Regional Greenhouse Gas Initiative (RGGI) embodies a cost-effective approach to reducing carbon dioxide emissions. The supply of emissions allowances is determined through public policy and their value (price) is determined in the allowance market, and will be a signal of the marginal costs of opportunities that firms have to reduce emissions. The emissions containment reserve (ECR) is a proposal that would automatically respond to situations in which the price of allowances falls below levels anticipated or intended in the program design. The ECR proposal is a valuable idea that should be thoroughly reviewed and considered by the RGGI states. The ECR can be expected to help RGGI states better coordinate their efforts to reduce emissions, to facilitate cooperation among states and to reduce the costs of emissions reductions.

The ECR would function by introducing a commonly known, rule-based mechanism to adjust the supply of allowances offered for sale in auctions when prices fall below a specified “trigger” price. At prices below the predetermined trigger price, a specified quantity (which I will term a “lot”) of allowances would not be sold. The ECR does not determine the market price of emissions allowances. The price in the auction and/or secondary market could fall below the ECR trigger price, so the ECR can be described as a “soft price floor.”

The ECR differs from, and is a natural companion to the existing hard price floor that is implemented through a reserve price in the auction. The reserve price provides a minimum possible market-clearing price in the auction. Bids below the reserve price are not accepted in the auction so no allowances can be sold at a price below the reserve price. Only bids at or above the reserve price can be fulfilled.

The ECR soft price floor and the auction reserve hard price floor can naturally coexist as long as the ECR is above the auction reserve price. There are strong and independent reasons that each of these mechanisms is desirable in an emissions allowance market.

It is true, as some observe, that we do not typically interfere in the supply of commodities in markets for private goods, but an emissions trading program is different from other markets. It is a governmentally created market that constrains emissions, and government has explicitly determined the supply. The decision about the supply of allowances involves an ex ante consideration of uncertainty over what supply of allowances is consistent with our willingness to pay for emission reductions. In most commodity markets one observes response in both supply and demand in response to changes in market conditions and prices. However, in an emissions market the supply of allowances is fixed in advance. There are a variety of influences on allowance prices, many of which cannot be anticipated, so a fixed supply can result in high price volatility.

In principle, allowance prices could go up or down, but empirically one observes that in general allowance prices tend to fall below anticipated levels. Factors that affect the price outcome include the desirable reduction in compliance costs as firms discover new ways to reduce emissions. Other factors are more subtle. One is the natural desire of individuals to contribute to achieving the social goal of reducing societal emissions. Entities at all levels of society, including firms, churches, schools, youth groups and families should be encouraged to contribute to the social effort and to create new norms about efficiency that will help the economy to be more competitive. Importantly in RGGI, individual states and local governments also can be expected to enact a variety of measures to try to

restrain their emissions. These individual and subregional efforts largely outside of the market or unmotivated by the modest allowance price help RGGI to achieve its emissions reductions goals, but in so doing they serve to reduce the demand for allowances and reduce its price.

The pre-determined supply of allowances reflects not only our willingness to pay for emission reductions from an ex ante viewpoint, but also it conveys a vision of RGGI as an initial effort to pave the way for more ambitious and comprehensive efforts to reduce greenhouse gas emissions in the future. Hence, companion efforts by the federal government, state or local governments, or individual actors should be supported in the design of the program. But they should not undermine the economic incentives that are intended from the allowance market.

### **What happens in the absence of a program response to allowance price changes?**

In the absence of a program design that responds to a decline in the price of allowances, all of the individual and subregional efforts that one would think should be encouraged will have no effect on emissions because they will simply make additional emissions allowances available to others, making it easier for them to emit. The emissions cap serves equally as an emissions floor, specifying not only the maximum but also the minimum emissions that occur. Under an emissions cap the effect of these individual and subregional efforts will have not an environmental effect because the overall level of emissions is fixed. Instead, the efforts and expense by individual states and actors will result in 100 percent leakage of emissions to other emissions sources and states within RGGI; indeed these efforts would push down the allowance price making it easier for other sources in the region to emit CO<sub>2</sub>. Ultimately, in the absence of a program response, the price would fall to zero and the program would cease.

All of the RGGI states have some specific efforts aimed at promoting renewable energy or energy efficiency. In some cases states have ambitious goals embodied in state law or regulation. In the absence of a program response in RGGI, these efforts would be ineffective at reducing emissions. The emissions cap would

invalidate the leadership efforts by individuals, organizations or governments and undermine the types of efforts that seemingly we should want to encourage.

Because the program has long-run goals beyond those articulated in the current period emissions cap, it is important to put guiderails on the price path to ensure the program success and durability. It does so by rebalancing the supply of allowances with the regulatory determination of the willingness to pay for emissions reductions in the program. That is not the same thing as saying the guiderails should determine the price; rather it is affecting the price path by introducing a degree of supply responsiveness, just as one would observe in usual commodity markets, if prices fall. Most economists have come to this point of view.

In the RGGI program and elsewhere, emissions reduction goals represent political and economic tradeoffs between environmental benefits and economic costs. One can imagine that if state officials sent staff to the market to buy emissions reductions, and those emissions reductions were on sale, we would want to buy more of them. In RGGI, when the price of emissions reductions fall below anticipated levels due to various factors, we should capture additional environmental benefits through additional emissions reductions. In RGGI, additional emission reduction measures have the added benefit that they are created and purchased locally. It is local investments in energy efficiency and renewables that are driving innovation, pushing down emissions, and creating local jobs.

### **How does the ECR integrate with the program as it is currently designed?**

The mechanics of the ECR do not require a rethinking of other parts of the RGGI program. In particular the ECR can coexist with the auction reserve price, which is the minimum accepted bid and minimum possible clearing price in the auction. Furthermore, maintaining the auction reserve price while introducing the ECR would be desirable.

It is valuable to maintain the auction reserve price because it is a feature of good auction design. There are several reasons this is true, and they were articulated in

the original auction design and report conducted by Charles Holt, et al. For example, one does not want to allow an auction price to spin out of control due to idiosyncratic circumstances such as short-term political news, misleading information or even a snowstorm that keeps people away from their computers. The auction reserve price also limits the potential effects if there were collusion in the market. In general, an auction reserve price reduces uncertainty and protects buyers and sellers from unintended outcomes, giving the auction a sense of procedural fairness and transparency.

In fact, there is justification to raise the reserve in the auction above the level at which it is currently set. The allowance price has been above the auction reserve price for several auctions and has been relatively stable over the last year or so. The Acadia Center reports that the average of the last four auctions (auctions 30-33) is \$5.46. The average secondary market price over the last 12 months has been \$5.47. Since the presidential election allowance prices have fallen somewhat, reflecting uncertainty about the prospect for climate policy in general. However, the fairly stable prices over the last year are widely viewed as a reflection of RGGI's level of commitment adopted in the last program review. If prices were allowed to fall below this level it would undermine the investments and actions that firms and individuals have taken to reduce emissions. Given that RGGI has shown a clear commitment to a reasonably aggressive path of reductions, and given the recent stable price history, an auction reserve price of \$4.00 - \$5.00 would seem sensible going forward. To align with long-term program, this price could increase at 5 percent per year in real terms, similar to the other North American trading programs.

The trigger price of the ECR would be set above the potentially increased auction reserve price to be relevant. The ECR would provide a glide path for harvesting additional emissions reductions as costs fall and new technologies enter the market. The ECR is a soft price floor and is a useful companion to the auction reserve hard price floor. There is no inherent contradiction from introducing the ECR while maintaining the auction reserve price at a lower level as a hard price floor. In practice the allowance price could fall below the ECR trigger. (In principle,

the market-clearing price could fall below even the hard price floor but this would imply that no allowances are sold in the current auction.)

There are a variety of ways that the ECR could be implemented. One approach would be to withhold a specified lot of allowances in a subsequent auction after one in which the auction price falls below the trigger price. However, it would be simpler and more transparent to shorten the time between the market signal and the program response by integrating the implementation of the ECR contemporaneously in every auction. This would be achieved by designating a lot of allowances with their own specific minimum trigger (reserve) price in the auction, below which they would not be sold. Because other allowances could be sold below the trigger price, the market-clearing price could fall below the trigger; however, the supply of allowances and associated emissions would automatically be reduced.

The program could easily implement a series of price triggers associated with various lots of allowances. This would create a rule-based supply curve that was responsive to market conditions and it would introduce a glide path for reducing allowances as price fall. For example, one could imagine that at 50 cent intervals a lot of allowances offered in an auction would not be sold. Ultimately the price might fall to the minimum auction reserve price, which serves as a hard price floor, below which no allowances would be sold.

### **How would the trigger price be determined, and what happens to allowances that are not sold?**

RGGI will have to decide where to put the price trigger (or multiple price triggers) for the ECR. One place to look on the level of the price trigger is the modeling. The difference between the high and low emissions case scenarios indicate the possible variance in allowance prices that are reflected in the model. Prices could rise or fall for a variety of unanticipated reasons also. But in existing atmospheric trading programs, empirically one observes consistent downward pressure on allowance prices over time.

The program is not just trying to manage uncertainty; it has the purpose of reducing the emissions intensity of electricity in the region. To advance toward this goal, the trigger price does not have to be the low emissions case price path associated with any reduction goal (2.5% or 3.5% per year). The trigger price could be closer to base case assumptions for the reduction goal if that reflects the ambition of the program.

RGGI will also have to decide what to do with allowances that might be sold if the ECR is triggered. There are three immediately apparent options. One would be to permanently retire the allowances, a second would be to add them to the cost containment reserve so that they would potentially re-enter the market if prices rise to unintended levels, and third would be to roll them forward automatically into a future auction. The third of these options, to roll them forward automatically into a future auction, seems like the only one that undermines the goal of the program. There may be advantages to either of the other two options. In particular, if the allowances were added to the cost containment reserve it may enable the reserve to be brought in “under the cap” and align with the design of the California program.

### **What might be objections to the ECR?**

Principles of market design generally call for simplicity and transparency, and these two attributes go hand in hand. Simple market design makes the process more transparent, and thereby easier to understand enhancing a sense of fair dealing. A possible criticism of the ECR is that it adds a new wrinkle to the program that might appear to make the program more complicated.

However, the ECR is a simple mechanism and is itself easy to understand. The label of the emissions containment reserve is a great title because it explicitly acknowledges the primary role of emissions reductions as a goal of the program. The way it is conducted can be based in rules that are determined in advance, so there is no sense of an arbitrary administrative decision to adjust the program stringency.

There may be a concern that an auction reserve price or an emissions containment reserve turns the market-based emissions program into a tax by fixing the price at which emissions allowances will trade. However, the ECR cannot plausibly be described as a tax because it does not determine the price in the market. If the ECR is enacted, prices will continue to move and potentially can fall below the trigger price. Moreover, the ECR does not substitute for the working of the market; the market continues to identify a price that balances the policy-determined supply of allowances with the willingness to pay for emission allowances.

Some observers have feared that the ECR will determine the behavior of bidders in the auction or traders in the market by signaling the intended market-clearing price. However, intuition and some preliminary evidence suggest that, rather than signal what the market-clearing price should be, the ECR acts like a magnet with the same polarity as the market mechanism, pushing the price away from the trigger. This might be expected because the distribution of possible allowance price outcomes is censored by the ECR, increasing the possibility of a price at or above the ECR trigger. The expectation of future prices taken over the entire distribution of potential outcomes is higher in the presence of the ECR. The shift in the distribution means that a bid at the ECR trigger level would likely be dominated by a bid slightly above that level because of expected higher future prices.

## **Summary**

The emissions containment reserve presents a natural way to assimilate efforts by individuals, organizations and subregional governments to reduce emissions while enabling a coordinated effort to achieve regional emissions reduction goals. The ECR is not a tax, it does not substitute for the market, and it does not replace the need for a reserve price in the auction, which is a feature of good auction design. The ECR adds to the market design by adjusting supply in response to the market determined price just as occurs in usual commodity markets. The ECR promises to reinforce the stability and durability of the RGGI program and enhance the cost effectiveness of efforts in the region.

