Memorandum

TO: Will Space, Mass DEP

FROM: Pallas LeeVanSchaick

DATE: December 19, 2023

RE: Market monitor comments on raising the auction reserve price level

The auction reserve price is the minimum price at which bids can be submitted in the allowance auction. Consequently, the auction clearing price cannot be less than the minimum reserve price, which influences the strategies of market participants in two notable ways. First, potential sellers in the secondary market know that buyers will not be able to purchase allowances in the auction for less than the minimum reserve price, so they are generally unwilling to sell allowances for less than the reserve price in the secondary market. Second, if there is no reserve price in an auction, the elasticity of supply becomes very low at low price levels, which provides incentives for strategic bidding where bidders tend to reduce the quantity bid at a given price level. Thus, a minimum reserve price is typically used in auctions to limit the potential range of variation in allowance prices and to reduce the incentives for anticompetitive bidding. MassDEP currently uses a minimum reserve price of $0.50 per allowance in its auctions, which is low relative to allowance prices in the secondary market and nearly all of the allowance auctions.

MassDEP has requested input on the allowance market implications of increasing the minimum auction reserve price under 310 CMR 7.74. Specifically, MassDEP has asked how a higher value more consistent with allowance price levels observed prior to September 2023 would affect the market. MassDEP specified this assessment should assume that (a) unsold allowances would be offered for sale in the next auction for the same vintage and (b) unsold auctions in the last scheduled auction for any particular vintage would be retired. This memo discusses the market implications of such a change.

A. Discussion

Since September 2021, there have been ten auctions for current vintage allowances. Of these, seven cleared between $9.40 and $14.73 per allowance, while the March 2022 auction cleared at $0.50 per allowance and the September and December 2023 auctions cleared at $3.00 and $2.75 per allowance respectively. In these three auctions, we observed low bid quantities and a wide range in bid price levels, suggesting that auction participants may have anticipated higher clearing prices and that the low clearing prices may have been an indication of illiquid market conditions.

Increasing the auction reserve price from the current level would reduce the potential range of variation in allowance prices. This would increase the expected price of allowances and reduce the uncertainty regarding allowance prices in the future. Reduced price volatility would reduce the cost of working capital for firms holding allowances as a share of compliance costs and increase the value of allowance holdings in meeting collateral or other capital requirements. Hence, increasing the minimum reserve price would increase the valuation of allowances for accounting purposes and reduce the riskiness of allowances as an asset.

While the potential change would affect only the rules for the current vintage auctions, it is important to consider that the proposed change would have a significant indirect effect on the future vintage auctions as well. This is because if bidders know that the price of allowances for a particular vintage will rise to at least the reserve price level next year when it becomes the current vintage, they will be willing to pay close to that level for the vintage when it is available in the future vintage auctions. This indirect effect could be significant given that the future vintage allowance auctions have cleared at prices between $1.75 and $7.51 in the first seven auctions when they have been offered.

One important consideration relates to the long-term purpose of 310 CMR 7.74. If a long-term policy goal is to maintain a stable incentive and significant revenue source, then offering allowances at low prices may unnecessarily increase allowance price volatility and reduce auction revenue. Raising the auction reserve price to a level consistent with the lower bound of the price range consistent with long-term policy goals will provide better information to the market about the future value of allowances, which will help firms and resource planners make better investment decisions that are more likely to be efficient given state policy. For example, if allowance prices observed prior to September 2023 are consistent with MassDEP policy goals for 310 CMR 7.74, then MassDEP could consider increasing the auction reserve price to a level more consistent with these prices.

On the other hand, if there is no specific policy goal regarding the desired allowance price range, the benefits of reduced allowance price volatility would still justify an increase in the auction reserve price from $0.50 per allowance. The reserve price could be set at a moderate (e.g., 30 percent) discount relative to recent price levels. This would reduce price volatility while still allowing allowance prices to fall over time.

B. Recommendation

The current regulation is designed to satisfy the legislated decline in CO_2 emissions from Massachusetts sources in the power generation sector over the coming decades. A cap-and-trade program is designed to satisfy this goal in the lowest-cost manner. While in theory this could happen at a price as low as $0.50 per allowance under the current regulation, observed market behavior suggests that allowance prices will likely be higher.

If MassDEP has policy preferences with respect to the acceptable range of allowance prices which might lead it to tighten the future annual emission caps if allowance prices consistently cleared at the reserve price of $0.50 per allowance, then it would be efficient to raise the auction reserve price to the minimum acceptable level for policy makers over the long-term. This would provide better information regarding future compliance costs to developers and resource planners when they make investment decisions.

Even if MassDEP has no specific preference regarding the acceptable range of allowance prices, it would still be efficient to raise the minimum reserve price to a level closer to recent market conditions. This would have the advantage of reducing allowance price volatility, which would reduce the capital costs of firms that hold substantial quantities of allowances for a given price level.

Therefore, I recommend increasing the auction reserve price from the current level of $0.50 per allowance. Specifically, in the current control period allowance auctions, I recommend setting the reserve price at the higher of:

- The minimum level consistent with MassDEP policy goals for 310 CMR 7.74, and
- 70 percent of the median auction clearing price in the last four auctions of the previous vintage.

For example, if (there is no policy minimum and) the median auction clearing price in the current vintage auctions for 2024 (held from December 2023 to September 2024) was $5.00, then the auction reserve price for the current vintage auctions for 2025 (held from December 2024 to September 2025) would be $3.50. Furthermore, since the lowest possible median clearing price for these auctions would be $3.50, the auction reserve price for the future vintage auctions for 2026 (held from December 2024 to September 2025) would be no lower than $2.45.