

Sub-committee Report on Price Ceiling Considerations

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October 8, 2018

A. Context

This document seeks to provide CARB with input to inform one of the important design elements now a part of the cap-and-trade program: the allowance price ceiling.

The fact that California is four years ahead of schedule to meet its 2020 greenhouse gas reduction goals increases the likelihood that it is indeed possible to build more ambition into the design of the program post-2020. However, uncertainty about market outcomes, technological change, and related policies makes it difficult to predict the allowance price over the next decade although the price floor and previous price containment reserve as well as many other market features provided some helpful stability and predictability. One of the new design elements intended to further mollify uncertainty about the allowance price is the inclusion of a price ceiling. The price ceiling is intended to provide a stronger level of assurance to the Legislature that marginal costs to consumers and producers associated with a declining cap post-2020 do not rise to levels that are economically or politically unsustainable. It also is expected to further limit market volatility. Importantly, California's price ceiling design takes an innovative approach to protecting environmental integrity by requiring that any instrument sold at the price ceiling is backed up by a reduction purchased with the revenue on at least a ton-for-ton basis.

B. Key considerations

Implementation of a Price Ceiling

The price ceiling will be implemented beginning in 2021 and will make available alternative compliance instruments, which currently are called "price ceiling units," at a pre-determined price. The alternative instruments become available only after the reserves of allowances that are available at the three cost containment price tiers are sold, and all these compliance instruments are sold in a secondary process following the regular allowance auction. The highest of these price tiers will be at the price ceiling level. When the allowances that are available at this price tier (the price ceiling) are sold, price ceiling units become available.

A key consideration is the level of the price ceiling. After considering a range of options, CARB has proposed that the price ceiling be set at \$65 in 2021, and that it increase at 5% per year plus inflation. Given the time constraints, it is difficult for this committee to offer analysis on the specifics of the price ceiling level. Nonetheless, we observe that \$65 in 2021 (\$61.75 in real 2018 dollars) is well within the range of estimates of the social cost of carbon from the federal Interagency Working Group (IWG 2016). The 2020 estimate of the social cost of carbon with a 2.5% discount rate is about \$75 in

2018 dollars. We also observe that a higher price ceiling would likely increase the probability of capturing additional environmental benefits. For example, stronger incentives because of a higher price ceiling might create a better market for mitigation projects with substantial development costs and high average costs per ton, such as carbon capture and sequestration. Providing financial incentive for the development of such projects is valuable given the importance of adaptation efforts in response to more forest fires. At a lower price, these projects might not be economically viable, causing the state to miss the opportunity to further environmental ambition.

However, we also observe that a higher price ceiling has the potential to enable greater price volatility at prices between the price floor and the price tiers and price ceiling, at least in the short/medium term (i.e., over the course of several years), because the supply of abatement options at prices near the price ceiling may be inelastic for several years until new technology and investments are realized.

Accounting for Emissions Enabled by a Price Ceiling

If the price ceiling is reached and allowances available at that price are exhausted, and price ceiling units are introduced, then emissions from sources covered by the cap-and-trade program will be greater than the number of emissions allowances issued under the emissions cap. An important question for the environmental integrity of the trading program is what the source of the price ceiling units will be, and how the state's overall emissions goal will be achieved.

Stakeholders have suggested that abatement opportunities exist that cannot be taken directly by sources covered by the program, and that many of these options offer emissions reductions at costs far lower than the price ceiling. Examples might include offsets including international forest offsets, innovative investments on natural and working lands, and purchasing emissions allowances from other trading programs. These alternatives would yield emissions reductions that could be used to account for the emissions increases embodied in price ceiling units. Because the cost per ton of these alternatives is likely less than the price ceiling, a ratio greater than ton per ton should be achievable. Coupled with the increased revenue that would be available from the sale of price ceiling units, high quality reductions could be secured outside of the market at greater than ton per ton, leading to greater environmental ambition. CARB may want to design the program so that investments in a reserve of emissions to account for the possible use of price ceiling units occurs before they might be brought into the program. This advance investment would have the indirect benefit of identifying new protocols for out of market emissions reduction opportunities, which might be useful in other jurisdictions. However, it could shift the location of emissions reductions to outside California. CARB may have limited opportunity to maximize reductions in California via the price ceiling, however, given that a price ceiling with instruments backed up on a ton-for-ton basis is required by statute. This dynamic could warrant further consideration.

Environmental Justice

This committee supports the recommendations from the Environmental Justice Advisory Committee (EJAC) that strongly supports the inclusion of the social cost of carbon (SCC) values as a justification for price tiers and the price ceiling in CARB's modeling. In light of the continued efforts by the Federal EPA that continues to lessen protections, California can set an important example and signal to EJ communities the importance of impacts in vulnerable communities by including SCC. These values as estimated by the Interagency Working Group, while not tied to any specific price point at the ceiling or floor, can be helpful as a point of reference for policy-makers in the state to underscore the costs associated with carbon pollution, and help support greater environmental ambition. CARB's consideration of SCC can be significant to alleviating some of the criticisms from the EJ community, some of whom are concerned that a low price that did not reflect the SCC would have minimal impact in reducing emissions, specifically in low-income communities, and that taking the SCC into account would imply a price that triggered additional positive health outcomes. Without proper accounting of social costs, critics believe that market-based approaches are more likely to leave behind vulnerable communities and increase hotspots in marginalized regions. Sending a signal that support for a viable carbon market does not exclude the concerns of EJ communities in this state is important to further demonstrating that the social impacts of climate change deserve the same focused attention of the agency as does the health of the atmosphere. An important consideration is how the increased emissions associated with price ceiling units will impact disadvantaged communities, and how measures to account for these emissions are designed.

Environmental Integrity

The most important factor to highlight is the level of emissions reductions achieved, not the amount of revenue the program has generated for investments into mitigation projects, etc. The same is true with the introduction of the price ceiling. What is important to focus on are the emissions reductions the state will likely achieve, not whether the ceiling will be reached. Too much focus on where the price is set can create a narrative that puts the focus of our environmental goals secondary to how much revenue is being generated. As important as these investments are, especially those going to disadvantaged communities, these investments and the level of revenue available for them does not in itself suggest whether the program is working.

This was the case a few years ago when the general assumption by legislators and even some stakeholders was that the program was failing as a result of declining revenue, which was attributed to low demand for allowances based on a number of factors, one of which was the uncertainty with the program prior to passage of AB 398. We now know that the program has indeed succeeded as a backstop, working in concert with complementary measures that have led to reducing the state's emissions such that it is four years ahead of meeting its 2020 target. Should the allowance price reach the price ceiling in the future, it would not mean the program had failed. Rather,

the success of the program can be judged by whether added abatement opportunities occurred at higher prices, and whether the state secured emissions reductions, including those that might fall outside of the cap using instruments as required by statute in reducing climate pollution from the atmosphere. We suggest that CARB staff strongly consider these implications as the rulemaking process continues forward. The focus and long-term success of the program should be based on the program's impact on emissions and the environment.

C. Lessons from literature

Public comments to the committee draw attention to literature on the social cost of carbon that considers equity weighting and alternative discount rates, as well as damages that are not monetized because of uncertainty, which yield substantial variation in the social cost of carbon (e.g. Adler et al. 2017; Anthoff and Tol 2010, 2013).

D. Recommendations for cap-and-trade regulatory amendments

- We encourage the state to investigate simplifying the program by providing for the sale of price ceiling units as well as sales of allowances from the cost containment price tiers in the regular auction by assigning reserve prices to the availability of those compliance instruments.

E. Recommendations for longer-term implementation

- Damages from climate change are expected to be severe in California. The state should develop an independent assessment of the social cost of carbon to provide a guide for determination of the price ceiling and other price points in the cap-and-trade program.
- The state should anticipate potential sources of emissions reductions outside the market that can be realized if price ceiling units are made available.
- Continue to ensure that in evaluating and setting the price ceiling, the primary focus for CARB should be whether our environmental goals will be achieved, not the amount of revenue the cap-and-trade program produces.
- Potential out-of-market emissions reductions to account for the potential use of price ceiling units are likely to be less expensive per ton than the price ceiling. The state should consider a ratio greater than one per ton to account for the use of price ceiling units.
- The state should consider the development of out-of-market emission reduction opportunities in advance of when they might be needed in the program. Initial investments in these opportunities and efforts to develop new protocols that might apply to account for price ceiling units can propagate methods that generate global environmental benefits. Having reductions available before they are needed can also help protect the environmental integrity of the program. CARB could make

Independent Emissions Market Advisory Committee

recommendations to the Legislature or work with the Legislature to explore the role of each body in considering these opportunities.

F. Conclusion

These are complex decisions and CARB staff is under enormous pressure to maintain the most successful carbon market in the world. The IEMAC appreciates the opportunity to provide input that we are hopeful CARB staff as well as stakeholders will find helpful. While these recommendations are purely for consideration and not for adoption, we believe that the aforementioned criteria will ensure that the state's cap-and-trade program continues to function as the backstop for California's suite of climate policies. At the same time, the program can drive further climate ambition, deliver cleaner air for all Californians, and remain a viable market that attracts the technological innovation and investments that are good for the economy and good for the environment.

References

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