



December 15, 2023

Dr. Mark Sippola
Branch Chief, Cap-and-Trade Program
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Comments on the [Cap-and-Trade Program Workshop](#), November 16, 2023

Dear Dr. Sippola,

Thank you for the opportunity to comment on the November 16 workshop for the California-Québec Cap-and-Trade Program. We have a number of suggestions for program improvements in light of the Allowance Price Modeling results.

The UC Davis modeling suggests that the cost-containment mechanisms built into California's Cap-and-Trade system may not be able to hold allowances prices below the ceiling, and that the emission cap will consequently be breached. Nevertheless, we believe it would be advantageous to set an ambitious emissions reduction target, as suggested by the Governor, in order to maximize the emissions reductions that could potentially be achieved if compliance costs are lower than expected. In addition, a higher price ceiling should be considered to reflect the social cost of carbon. Auction revenue allocation can be targeted to mitigate the economic impact of a higher price ceiling, and price volatility can be mitigated by implementing the Allowance Price Containment Reserve (APCR) as an Emissions Containment Reserve (ECR).

We offer the following specific recommendations, which we believe will maximize the likelihood of achieving California's GHG reduction goals:

1. Adopt the Governor's proposed 55 percent reduction target.
2. Consider raising the price ceiling.
3. Evaluate auction revenue allocation options for cost containment.

4. Implement the Allowance Price Containment Reserve (APCR) as an Emissions Containment Reserve (ECR).

We elaborate below:

Adopt the Governor's proposed 55% reduction target.

The workshop considered three alternative scenarios: (1) 40 percent greenhouse gas (GHG) reduction by 2030 (the [statutory requirement](#) per SB 32), (2) 55 percent reduction by 2030 (the [Governor's recommended goal](#)), and (3) 48 percent by 2030 (the [2022 Scoping Plan Scenario](#)). A key finding of the UC Davis Allowance Price Modeling study is that "Most alternative scenarios yield prices that follow the price ceiling through at least 2035." ([Slide 35](#)) This implies that GHG reductions will be determined by the price ceiling, and not by the emissions cap, under most scenarios.¹ However, a higher reduction goal will increase the likelihood of achieving the maximum possible emission reductions within the constraint of the price ceiling. The target could be achieved in the event that decarbonization costs turn out to be significantly lower than expected.

Because the price ceiling guards against potential adverse economic impacts of an overly ambitious emissions target, there would be no harm in adopting the Governor's 55 percent target as a "stretch goal." Moreover, if the 48% target's "impacts to economic and job growth would be negligible" as [stated](#) in the Scoping Plan, that would be all the more reason to adopt a more ambitious target.

Consider raising the price ceiling.

The UC Davis model should be able to quantify, under various policy scenarios, the likelihood of achieving the 40, 48, and 55 percent reduction targets in 2030, as well as the net-zero target in 2045. The probability of success would likely be increased by raising the price ceiling. An increase in the price ceiling should be considered for three reasons:

First, the ceiling was initially set at \$61/MTCO₂e (real 2018 dollars) based on a conservative estimate of the social cost of carbon (SC-CO₂)², but the Interagency

¹ [CARB asserted](#) that inclusion of CCS in the model could bring prices down below the ceiling. However, the Scoping Plan's projected 25 MMTCO₂e CCS by 2045 ([Table 2-3](#)) does not appear to be sufficient to significantly impact the supply-demand graphs in [slide 30](#).

² See the [2018 Initial Statement of Reasons for its Cap-and-Trade Regulation, pages 38-39](#) ("At a 3 percent discount rate ...").

Working Group has since increased its SC-CO₂ estimate to \$190/MTCO₂ (in 2020, at a 2% discount rate).³

Second, staff believed that a higher price ceiling “would be excessive relative to prices needed to achieve the 2030 target” based on the [2017 Scoping Plan finding](#) that “there is 96 percent likelihood that the adopted Scoping Plan scenario with the existing Cap-and-Trade Program will achieve the 2030 emissions target.” But the UC Davis finding suggests that the probability could be much lower.

Third, in setting the price ceiling CARB did not consider any need to exceed the statutory [SB 32](#) 40 percent target in light of the [AB 1279](#) mandate to “achieve net zero greenhouse gas emissions as soon as possible.”

Evaluate auction revenue allocation options for cost containment.

The considerations favoring a higher price ceiling should be weighed against the “need to avoid adverse impacts on resident households, businesses, and the state’s economy” ([AB 398, HSC §38562\(c\)\(2\)\(A\)\(i\)](#)). The 2022 Scoping Plan projects that “Under the Scoping Plan scenario, impacts to economic and job growth would be negligible in both 2035 and 2045...” based on a 48 percent reduction target in 2030 and net-zero in 2045, in comparison to a Reference Scenario with a 40 percent target in 2030 and no post-2030 target.⁴ It can thus be inferred from the Scoping Plan that a higher price ceiling sufficient to raise the emissions reduction expectation value from 40 percent to at least 48 percent in 2030 would not significantly impact the economy.

Moreover, economic impacts are likely to be influenced more by how carbon pricing revenue is spent than by the carbon price itself. Such impacts can be mitigated with more targeted expenditure of allowance auction proceeds.

For example, according to [slide 24](#) in the workshop presentation (“Summary of Price Response Assumptions”), a carbon price of \$200/ton would translate to an electricity price increase of 3.7¢/kWh. However, electricity ratepayers currently do not pay the full cost of carbon pricing. Some Cap-and-Trade auction revenue is returned directly to utility ratepayers in the form of a [climate credit](#), which compensates for the compliance cost of the Cap-and-Trade Program on their electricity bills.

Another potential cost-containment mechanism is “output-based” allocation of allowance auction revenue, which would distribute auction proceeds from a particular industry

³ See the September 2022 EPA [“Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances”](#), page 3.

⁴ See the 2022 Scoping Plan, [page 4](#), and Appendix H, [Figure H-22](#).

sector to all entities in that sector—including zero-emission entities—in proportion to economic output (e.g., as a \$/kWh generation subsidy in electricity sectors).

Alternatively, auction revenue can be selectively allocated to renewable and low-carbon energy sources in order to create decarbonization incentives far in excess of allowance prices. Consider [Germany's Feed-in-Tariff](#) program, which subsidized renewables at an initial rate of about 45¢/kWh in the early 2000s. The subsidy, financed by a surcharge of 0.56¢/kWh on consumer electricity bills, created a marginal incentive of about \$450/MTCO_{2e} to substitute renewable power for coal.

These examples illustrate how allowance revenue allocation can have a much greater influence on economic costs than other cost-containment measures discussed in the workshop presentation (price floor and ceiling, APCR, banking, offsets). Revenue allocation should be a prime focus of CARB's Cap-and-Trade amendments.

Implement the Allowance Price Containment Reserve (APCR) as an Emissions Containment Reserve (ECR).

The APCR can further enhance market stability by implementing it as an ECR similar to that proposed by the [Independent Emissions Market Advisory Committee \(IEMAC\)](#) and [the Environmental Defense Fund's comments on the June 14 workshop](#). If allowance prices reach either of the two APCR price points or the price ceiling, then that price level should be maintained as a price floor until the previous APCR balance is restored. If the APCR is fully depleted at the price ceiling level, then the balance should be allowed to go negative and the price ceiling should be maintained as a floor until the balance is again positive and the original balance is restored.

Thank you for considering these comments. We are available to speak with staff about them at your convenience.

Sincerely,

Stephen S. Rosenblum, Ph.D.
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Climate Action California

Kenneth Johnson
Legislation and Public Policy Committee
The Climate Reality Project: Silicon Valley Chapter