October 24, 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, October 5, 2023

Dear Dr. Sippola,

Climate Action California and Climate Reality Project: Silicon Valley Chapter respectfully offer the following comments and recommendations pertaining to the Cap-and-Trade program, specifically regarding the interrelated issues of the price floor, early-action incentives, and the Allowance Price Containment Reserve (APCR).

We recommend that CARB's Cap-and-Trade regulations employ a price floor at or above the projected allowance market price, in order to incentivize early action and supplement the Allowance Price Containment Reserve (APCR).

A meaningful price floor can incentivize early action.

As CARB is no doubt aware, achieving carbon neutrality in California by 2045 will be vastly more challenging than was reducing emissions to the 1990 level by 2020. CARB should not rely entirely on an economy-wide emissions cap as the only "backstop" for achieving carbon neutrality; it is vitally important that CARB also create maximal incentives for early action and overcompliance, in order to ensure that industry is well-positioned to meet increasingly more stringent emission requirements in coming years.

CARB clearly recognizes this imperative. The 2022 Scoping Plan Update targets a 48 percent reduction in emissions by 2030, significantly over-complying with the 40 percent minimum statutory requirement. CARB is revisiting the Governor's proposed 55 percent

reduction target in the current Cap-and-Trade workshops. In a departure from CARB's past practice, the 2030 target will be determined not by statute, but rather by employing economic modeling to determine the limits of feasibility and cost-effectiveness.

CARB has broad discretion in adopting a standard of cost-effectiveness for the purpose of determining the emissions target. The only clear guidance given by the AB 32 statute is that "'Cost-effective' or 'cost-effectiveness' means the cost per unit of reduced emissions of greenhouse gases adjusted for its global warming potential." In determining the 2030 reduction target, CARB's modeling will need to estimate and take into consideration future allowance trading prices, i.e., the "cost per unit of reduced emissions of greenhouse gases" in $/MTCO2e units.

We urge CARB to use the projected allowance market price not only as a basis for setting the emissions cap, but also for establishing a price floor. CARB can create maximal incentives for early action, by both regulated entities and unregulated voluntary actors, by establishing a price floor no lower than the projected allowance trading price under the modeled scenario. If the emissions cap would be feasible and cost-effective under cost-conservative predictive assumptions, then a price floor at the projected market allowance price will be equally feasible and cost-effective under the same assumptions. Any lesser price floor would diminish the incentive for early action, putting industry in greater jeopardy of not being able to meet its more stringent compliance obligations in later years.

A price floor sufficient to incentivize significant early action and overcompliance would have statutory support in the AB 32 mandate requiring CARB to "design the regulations, including distribution of emissions allowances where appropriate, in a manner that ... encourages early action to reduce greenhouse gas emissions" (HSC §38562(b)(1)). AB 1279 (Muratsuchi 2022) further establishes a state policy to "Achieve net zero greenhouse gas emissions as soon as possible …" (HSC §38562.2(c)(1)).

CARB's economic modeling may be biased toward cost conservatism for the purpose of establishing a mandatory emissions cap, but a price floor would counterbalance this bias. Under more optimistic (and probably more realistic) predictive assumptions, compliance costs will be lower than expected, but the price floor will prevent price collapse and will induce overcompliance with the emissions cap. A 48 percent reduction target, for example, could potentially result in a 55 percent or greater reduction level if compliance costs turn out to be significantly below expectations.

A price floor can help ensure the environmental integrity of additional climate actions.

As long as market allowance prices are not trading at the price floor, actions by individuals, corporations, communities, and municipalities acting on their own volition to reduce climate change would have no effect on emissions from capped sectors; their actions would merely enable other entities to emit more. Emissions in capped sectors would be unaffected by such actions because aggregate emission levels are controlled and are predetermined by the cap. But with allowances trading at the price floor, the number of allowances released into the market would be determined not by the cap, but by market demand. When emission-reduction actions reduce the demand for emission allowances, fewer allowances will be sold, and emissions will consequently decrease.

With a price floor determined from projected allowance prices, allowances would be trading at the price floor under normal and expected circumstances, not only under exceptional circumstances. Additionality of voluntary climate actions would be ensured under the most likely—not the least likely—predictive scenarios. Only in the circumstance where compliance costs are higher than anticipated would the benefits of early action be channeled toward relieving industry's regulatory burden rather than further reducing emissions.

A price floor would supplement the Allowance Price Containment Reserve.

We propose that allowances that remain unsold as a result of the price floor be put into the Allowance Price Containment Reserve. Several tranches of reserve allowances would be offered for sale at predetermined price tiers, including the price ceiling (top tier). If the quarterly Cap-and-Trade auction settlement price is at or above a particular tier, then a tranche of reserve allowances will be made available for sale at the tier price, which will be maintained as a price floor until such time as the original reserve balance is restored. In the event that the price ceiling is breached, the reserve balance will be allowed to go negative if the reserve is fully depleted, and the ceiling will be maintained as a floor until the reserve balance is again positive and the original balance is restored.

This proposal differs from CARB's current reserve sale process in a couple of respects. First, reserve allowances would not become available for sale when the market price reaches 60 percent of the lowest tier price. In order to avoid depleting the reserve, the reserve allowances will only be sold if and when the market price breaches the reserve tier price. Second, allowance prices would not be allowed to subsequently drop until the reserve is replenished, because if the tier price is breached, it will be vitally important to maintain maximal early-action incentives and to ensure that any later price rise will be

mitigated by a restored allowance reserve. The reserve represents an accounting of market overcompliance with the cap, including overcompliance resulting from voluntary climate action, and restoration of the reserve will also restore additionality of such voluntary action.

CARB's current price floor was set to initially match that of the federal Waxman-Markey Cap-and-Trade legislation, which was introduced in the United States Senate in 2009, but was never enacted. California's AB 398 legislation (Garcia, 2017) introduced a number of price containment features in CARB's Cap-and-Trade regulation but left the price floor unchanged. This is a significant omission because a meaningful price floor is required to incentivize early action and provide supplemental APCR allowances, which could be critical to containing high price excursions.

Impact on the Greenhouse Gas Reduction Fund

A high price floor would provide two benefits for the Greenhouse Gas Reduction Fund (GGRF), which is financed by Cap-and-Trade revenue. First, it will result in a more stable revenue stream by mitigating market volatility. Second, it will increase the likelihood that GGRF-funded measures such as clean vehicle incentives will materially affect statewide emissions. The 2016 LAO report "Cap-and-Trade Revenues: Strategies to Promote Legislative Priorities" noted, under the topic heading "Spending on Capped Sources Likely Has No Net Effect on Overall Emissions," that "subsidizing an emission reduction from one capped source will simply free-up allowances for other emitters to use." But with a meaningful price floor in effect, GGRF-funded projects would, in fact, likely lower overall emissions.

Impact on the federal Inflation Reduction Act

A high price floor would also enhance the environmental integrity of the federal Inflation Reduction Act in California's carbon market. Currently, the GHG-reduction benefit of the IRA in California is nullified by Cap-and-Trade. This is discussed in the 2022 IEMAC report, which states: "IRA incentives...reduce demand for GHG abatement in the carbon market; and allowance prices will fall. A lower carbon price reduces the economy-wide incentives for GHG abatement at all sources covered by the cap… If the allowance price remains above the price floor, this shift in allowance use will displace emissions reductions that were induced by federal IRA incentives." The report further notes that "If the allowance price falls to the auction reserve price (i.e., the price floor), then any allowances that are not sold will be moved into the cost containment reserve [APCR] — leading to a delayed waterbed that would manifest when these allowances ultimately

re-enter the market." However, the waterbed effect would be neutralized if the reserve sale price is maintained as a new price floor until the initial reserve balance is restored.

Impact on additional climate actions

All voluntary early actions for emissions reduction in capped sectors would benefit from a high price floor. Cap-and-Trade normally disincentivizes early action, as explained in a 2017 report from Resources for the Future on the topic of Cap-and-Trade regulation of electricity in the Regional Greenhouse Gas Initiative:

> Additional actions may be taken by cities, states, companies, or individuals to reduce emissions associated with electricity consumption based not on the price of CO2 emissions but for other environmental reasons. These additional efforts lead to an economic benefit for all RGGI states in the form of lower allowance prices, but they do not yield additional emissions reduction benefits….

However, allowance prices would not be lower if they are constrained by a price floor; the effect of early action would instead be to lower emissions.

Many local governments in California have Climate Action Plans, such as The City of San Diego's, which targets net-zero GHG emissions by 2035. CARB's 2022 Scoping Plan Update "encourages local jurisdictions to take ambitious, coordinated climate action at the community scale," but provides no mechanism for such jurisdictions to influence statewide emissions in capped sectors. Without a meaningful price floor on Cap-and-Trade allowances, concerted climate action by local governments would result in carbon price erosion, diminishing the market value of their investments in decarbonization.

The Scoping Plan similarly "includes aggressive assumptions about consumer adoption of ZEVs, heat pumps, and other energy efficiency practices," all of which pertain to emissions in capped sectors. A high price floor would empower consumers to impact total statewide emissions by reducing their carbon footprint.

A strong guarantee of additionality for voluntary action could be provided by programs similar to CARB's Voluntary Renewable Electricity (VRE) Program. If allowances are trading at the price floor, then the allowance retirements associated with VRE purchases could be debited from the APCR, which would normally accrue the surplus allowances resulting from such action.

IEMAC recommendation

With allowances trading at the price floor, the market supply for allowances are determined by demand and are dynamically responsive to emissions-reduction actions that reduce demand. A high price floor, at or above the projected market equilibrium allowance price, would put into effect the following recommendation of the IEMAC, as stated in its comment letter to CARB for the June 14, 2023 Cap-and-Trade Workshop:

> Presently, the supply of emissions allowances is unresponsive to the success of regulations or the efforts of individuals and institutions to address their climate impact across a range of outcomes. As a result, the success of other efforts reduces allowance prices, compliance costs, and the relative importance of the carbon market in the state's policy portfolio. CARB has the opportunity in the upcoming rulemaking process to take important steps to remedy this dilemma and position the carbon market to amplify the accomplishments of regulatory programs. This can be done by adjusting the supply of allowances dynamically in response to the success of regulations and individual actions. While a one-time allowance supply adjustment could be justified on the basis of the accumulated allowance bank, the future balance of demand and supply and associated allowance bank will nonetheless remain uncertain, which makes the ideal supply adjustment difficult to anticipate in advance.

If allowances are selling at the price floor, the "ideal supply adjustment" would not need to be anticipated; market demand would effect the adjustment in response to the fixed price incentive.

The IEMAC is starting work on its 2023 Annual Report and will be soliciting CARB's and the legislature's input on topics of interest to be addressed in the report. **CARB should solicit IEMAC recommendations on the Cap-and-Trade price floor.** Specific issues that the IEMAC should address include (1) the extent to which a higher price floor can incentivize early action and overcompliance by both regulated entities and unregulated voluntary actors, (2) the extent to which a higher price floor can mitigate the risk of future allowance price spikes and market volatility, and (3) whether a price floor at or above the projected market allowance price (under cost-conservative predictive assumptions) would be feasible and warranted on policy grounds.

Quebec linkage

California's Cap-and-Trade program is linked with that of Quebec, which would need to approve any change in the price floor. There would be good reason for doing so, from Quebec's perspective, in order to harmonize its market with Canada's federal carbon price. (In late 2022 allowances in Quebec were selling for about 35 CAD while the federal price was 50 CAD.)

However, it may be more advantageous to decouple the Quebec and California markets, as California's agreement with Quebec disincentivizes and deters more ambitious climate action:

- In 2020, half of Quebec's GHG reduction balance relative to 1990 came from California credits (purchased allowances and offsets), with most of the remainder attributed to the pandemic. The approximately 170 million USD that Quebec spent on credits in 2020 (11 million credits at about 15 USD per credit) could have been better spent financing early action to reduce Quebec's own emissions, rather than subsidizing overcompliance in the California market, because the industries whose emissions were offset by those credits still need to be decarbonized to achieve Quebec's goal of carbon neutrality by 2050. The cost of decarbonizing those industries is deferred, not avoided, by offsetting their emissions.

- Quebec has a near-term goal of reducing emissions by 37.5 percent from the 1990 level by 2030. Quebec is not contemplating changes to their 2030 ambition as California is, and linkage with California creates a disincentive for them to do so because a more stringent cap would reduce Quebec's allotment of allowances. Any attempt to harmonize emission caps or floor prices, price containment thresholds, and price ceilings in a linked carbon trading market would need to be authorized by the linked jurisdiction with the least ambition; and with cross-jurisdictional trading, over-allocation in one market would effectively allow undercompliance in other markets.

California's statutory policy is to "achieve net zero greenhouse gas emissions as soon as possible" (HSC §38562.2), whereas our Cap-and-Trade linkage with Quebec operates to achieve a near-term emissions target as cheaply as possible while deferring to the future the longer-term costs of achieving net-zero emissions. California and Quebec are, in effect, pursuing a policy of procrastination with their linked trading system, in contravention of California's legislative policy.

In addition to soliciting IEMAC recommendations on the price floor, CARB should also request the committee's evaluation and analysis of linkage with Quebec. Specific topics of import include (1) whether such linkage has incentivized and resulted in greater ambition by Quebec and greater emissions reduction in the joint program, and (2) whether and how linkage might be expected to reduce the costs and increase the certainty, not of achieving near-term emissions reduction targets, but of achieving the longer-term objectives of carbon neutrality and climate stabilization.

Conclusion

There are innumerable possible future contingencies, some fortunate and some unfortunate, that cannot be anticipated in the economic modeling underlying CARB's 2030 emissions target. A price floor sufficient to incentivize significant early action and overcompliance would provide CARB's market-based regulations the flexibility and adaptability to exploit unforeseen opportunities for additional emissions reductions, while also providing increased resistance to future carbon price spikes and volatility. CARB cannot mandate an emissions cap based on overly optimistic predictive assumptions, but with the right incentives, market forces might drive emissions reductions well beyond CARB's most aspirational expectations.

Thank you for considering these comments. We look forward to continuing to participate in CARB's Cap-and-Trade planning process.

Sincerely,

Janet Cox, CEO
Climate Action California

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