



May 8, 2024

Cap-and-Trade Workshop  
California Air Resources Board  
1001 I Street  
Sacramento CA 95814

Re: Comments on the April 23, 2024 Cap-and-Trade Workshop and April 9, 2024 SRIA

We appreciate the opportunity to offer our perspectives and recommendations on the April 23, 2024 [Cap-and-Trade Workshop](#): Potential Amendments to the Cap-and-Trade Regulation, and the April 9, 2024 [Standardized Regulatory Impact Assessment](#).

The 2022 Final Scoping Plan states that “The path forward is informed by robust science” and cites the IPCC’s finding that “by the 2030s, and no later than 2040, the world will exceed 1.5°C warming unless there is drastic action. ... We are already seeing unprecedented climate change impacts, such as continued sea level rise, that are ‘irreversible’ for centuries to millennia, and we are dangerously close to hitting 1.5°C in the near term.” The 1.5°C annual average temperature threshold [was crossed](#) in January this year, in part due to the short-term influence of a strong El Niño event although the magnitude of the temperature excursion exceeded expectations based on the climate model forecasts. There is presently [no clear scientific consensus](#) on the projected trajectory of global warming and whether it will be possible to stay within the 1.5°C limit.

CARB’s proposed allowance budget scenarios are not “informed by robust science” or by the AB 1279 statutory policy requiring attainment of net-zero emissions “as soon as possible”, but are rather biased toward cost-conservatism due to the inherent cost unpredictability of cap-and-trade. A variety of cost-containment features, most notably a binding price ceiling, have been incorporated into cap-and-trade to mitigate the uncertainty, but the ceiling is insufficiently protective to allow CARB to adopt ambitious climate goals consistent with science and statutory policy.

We recommend that CARB (1) establish a price ceiling that is within limits of cost acceptability, and (2) establish emission limits for 2030 and 2045 – or earlier – that are consistent with climate science and statutory guidance. Although the price ceiling forfeits the certainty of emission targets, the past history of California’s cap-and-trade program shows that climate goals can be achieved at much less than anticipated cost;

and adopting ambitious climate goals will at least admit the possibility of achieving the goals under favorable economic conditions. *At a minimum, CARB's regulatory climate policies should seek to achieve the maximum possible GHG reductions within limitations of cost acceptability.*

### **The SRIA's rejection of Alternative 2 ignores the protection of AB 398.**

The Proposed Amendments set forth in the SRIA are based on a State GHG reduction target of 48% from 2030, in accordance with the 2022 Scoping Plan Update. Staff also considered two possible alternatives for revised allowance budgets: the SB-32 40% reduction target, and the Governor's proposed 55% reduction target.

Alternative 2 (55% reduction) was rejected by staff "because the pace of pre-2030 GHG emissions reductions may produce negative economic consequences that may be avoided while still meeting the State's climate targets." However, [AB 398](#) (Garcia 2017) established a price ceiling for the express purpose of avoiding such impacts. The statute required the state board to consider six criteria in setting the price ceiling, the first being "the need to avoid adverse impacts on resident households, businesses, and the state's economy." (HSC 38562(c)(2)(A)(i)(I)) To the extent that Alternative 2, or any other alternative, does not avoid such adverse impacts, CARB has failed to adequately consider the statutory criteria in setting the price ceiling.

The aforementioned six statutory criteria in AB 398 also included the "full social cost associated with emitting a metric ton of greenhouse gases." The ceiling was [initially set at \\$61/MTCO<sub>2</sub>e](#) (in real 2018 dollars and rising by 5% annually) based solely on a conservative estimate of the social cost of carbon (SC-CO<sub>2</sub>) at a 3% discount rate. That could be a gross underestimate based on the EPA's recent SC-CO<sub>2</sub> values (see [Table 9](#) in the SRIA), but in any case the SC-CO<sub>2</sub> is not a useful criterion for establishing the price ceiling because the assumed discount rate can be chosen to match the SC-CO<sub>2</sub> to any price ceiling.

CARB should reevaluate and, if necessary, revise the price ceiling, and also the 5% annual growth rate, to preclude negative economic consequences at the price ceiling. The price ceiling is a critical cost-containment mechanism, which would allow CARB to adopt the Governor's 55% reduction goal for 2030. There is no guarantee that the goal would be achieved, but setting a less ambitious goal would guarantee that the Governor's target is *not* achieved even if the cost of doing so turns out to be well below the price ceiling.

**In rejecting Alternative 2, the SRIA rejects the statutory policy established in AB 1279.**

Staff also rejected Alternative 2 on the grounds that “there is a pronounced inflection point for GHG emissions in sectors covered by the Cap-and-Trade Program in 2030, after which the pace of GHG emissions reductions in these sectors considerably slows as the State approaches the 2045 targets.” If the pace did not slow, then net zero would be achieved sooner than 2045, but staff deems this to be a drawback, not an advantage, of Alternative 2.

This rationale expressly contravenes and subverts the state policy established in [AB 1279](#) (Muratsuchi 2022) to achieve net zero greenhouse gas emissions “as soon as possible”. (HSC 38562.2(c)(1)) Contrary to statutory guidance, staff does not plan or intend to incentivize attainment of net zero any sooner than 2045.

CARB’s policy prioritizes cost minimization over minimizing emissions even with the protection of the price ceiling. According to this perverse policy rationale, California’s early attainment of its 2020 cap-and-trade target should be judged a failure because AB 32 did not require early compliance and the target could have been attained at less cost had it not been achieved ahead of schedule.

**The Annual Allowance Budgets under Option #1 defy logic.**

The Annual Allowance Budgets illustrated in the workshop presentation, [slide 11](#), not only exhibit a slower pace of GHG reductions after 2030, but they show an actual increase in allowances between 2030 and 2031 for the 48% scenario. The same is true for the 40% and 55% scenarios under Option #1; see the October 5, 2023 workshop presentation, [slide 35](#). This defies logic. If a 48% reduction target is feasible in 2030, then a 48% or greater reduction would surely be feasible in later years and could allow achievement of net zero sooner than 2045.

In the workshop Q&A [staff justified](#) selection of Option #1 on the grounds that a linear decline “would be more aggressive than actually respecting the targets and statute” and that “it’s already going to be ambitious enough without having to add additional ambition beyond what’s in statute.” The original AB 32 emission goal was similarly based on speculative expectations about economic feasibility, as stated in a [March 2006 report](#) from the California EPA’s Climate Action Team to Governor Schwarzenegger (page 18): “The 2010 and 2020 targets are based on an ambitious estimate of how much the state can reduce emissions with strong top-down leadership and a coordinated effort amongst various state agencies.” But the targets were far less ambitious than the team

could have imagined at the time. Allowance prices were trading at or near the floor price from the cap-and-trade program's inception through 2020, even as the industry acquired and held over 300 million banked allowances.

The Climate Action Team could not have known, based on the information they had in 2006, that a significantly more ambitious climate goal would have been economically feasible. But CARB is not now under any such constraint because the price ceiling should ensure that program goals will not exceed limits of economic feasibility. *History shows that economic costs cannot be predicted, but they can be contained and CARB should take full advantage of the price ceiling as a cost-containment mechanism.*

### Cost containment

In its 2011 [Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document](#), CARB considered cap-and-trade and carbon taxes as mutually exclusive policy alternatives, with the tax option being rejected. But the cap-and-trade program had by then already begun to evolve into a hybrid regulation incorporating tax-like features, and AB 398 (Garcia 2017) continued the evolution with the addition of new price-containment mechanisms. *This "hybridization" of the cap-and-trade program largely negates the policy arguments against carbon taxes (e.g. the guaranteed cap on emissions has been forfeited in favor of a guaranteed price ceiling).*

A [price floor was established](#) in the original program design, not in response to any statutory requirement, but based on CARB's recognition that the cap might be too lax and susceptible to allowance over-allocation. The floor was set at \$10/MTCO<sub>2e</sub> in 2012 with a 5%-plus-inflation annual growth rate following the precedent of the Waxman-Markey cap-and-trade legislation introduced in the United States Senate in 2009.

During the 2014-2020 time frame the cap-and-trade program operated effectively as a carbon tax with [allowances selling](#) at or near the pre-established price floor, except that there would have been no need for banking with a carbon tax. Banking is intended to allow regulated entities to hedge against price volatility, but when prices are low and stable, they use banking as a hedge against more stringent future regulations. Had a carbon tax been employed without banking, regulated firms would have hedged against future regulations by preemptively reducing their GHG emissions, without trading near-term emission reductions for increased long-term emission rights. The price floor failed to adequately curtail allowance over-allocation, and banking, in effect, [extended the over-allocation beyond 2020](#).

The IEMAC and several stakeholders have recommended establishment of an Emissions Containment Reserve (ECR) to limit the allowance supply when prices are low, although the same objective could be achieved by raising the price floor. This would not address the underlying cause of allowance oversupply and low prices, which is insufficiently stringent emission targets. Emission targets are overly lax because they are necessarily biased toward cost conservatism to accommodate predictive uncertainty. *However, a sufficiently conservative price ceiling would remove this uncertainty and allow CARB to set ambitious emission goals consistent with climate science and statutory guidance, making it very unlikely that a price floor will need to be imposed.*

The allowance price modeling results presented by UC Davis at the November 16, 2023 workshop indicated that prices could be [at the ceiling](#) between 2030 and 2040 under most modeling scenarios. The projections are uncertain, but the combination of a conservative price ceiling and ambitious cap would increase the likelihood of prices being at the ceiling. This would not be a negative outcome; it would indicate that prices are staying close to but within the limit of cost acceptability. If prices are expected to stay at the ceiling for an extended period of time, the predictability and stability of carbon prices would create an economic environment conducive to long-term investment in decarbonization technologies without the financing risk premium associated with volatile prices. The waterbed effect of cap-and-trade, whereby additional emissions reductions in one sector of the economy free up surplus allowances allowing equally greater emissions in other sectors, would be inoperative under a fixed-price allowance sale because the allowance supply would not be predetermined; it would respond to market demand. To the extent that economic modeling projections are uncertain and biased toward cost conservatism, the uncertainty could lead to much lower emissions rather than much lower allowance prices.

In summary, we encourage CARB to review and revise the cap-and-trade price ceiling to ensure cost acceptability, and we further encourage CARB to adopt allowance budgets and policies that comport with climate science and follow statutory guidance to achieve net zero greenhouse gas emissions as soon as possible.

Sincerely,

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