Dr. Liane Randolph
Chair, California Air Resource Board
1001 I Street
Sacramento, CA 95814

July 31, 2024

RE: Comments on July 10 workshop regarding potential amendments to the cap-and-trade regulation

Dear Chair Randolph:

We greatly appreciate the opportunity to provide feedback in response to the July 10 public workshop on potential amendments to the cap-and-trade regulation.

Lombard Odier Investment Mangers (LOIM) is the asset management arm of the Lombard Odier Swiss banking group, founded in 1796, with a core investment conviction in the net zero transition, including through investments in carbon markets. The authors of these comments constitute Lombard Odier's carbon team, based in London and New York. The views expressed here are those of the authors alone and do not necessarily reflect those of others at our organization.

Thank you very much for your time and consideration.

Sincerely yours,

Ruben Lubowski
Chief Carbon & Environmental Markets Strategist, Lombard Odier Investment Managers
Adjunct Professor, School of International and Public Affairs, Columbia University
ruben.lubowski@lombardodier.com

Lorenzo Bernasconi
Head of Carbon Solutions, Lombard Odier Investment Managers
lorenzo.bernasconi@lombardodier.com

Callum Lee
Portfolio Manager, Lombard Odier Investment Managers
callum.lee@lombardodier.com

Support or concerns with Option 1 and 2

In general terms, the newly introduced "Smoothed" Options 1 and 2 represent significant improvements on the SRIA Scenario B, which would only remove half of the allowances from the general budgets for auction and allocations, and the SRIA Scenario C which would remove all allowances from the APCR. We strongly a CARB's proposal to implement the allowance cuts entirely from the auction and allocation budgets. We also support CARB's effort to develop an allowance budget trajectory that achieves a smooth transition from 2030 and onwards, although we have a concern with the flat cap trajectory in Option 2 from 2031-2037. We discuss this further below in our comments regarding the "need for a smoother transition."

In terms of the relative merits of Option 1 versus 2, we have a concern with the proposal in Option 1 to defer 85 million of the 265 million allowance cuts to the 2031-2045 period. Given the current bank of allowances, the proposal to cut 180 million from the allowance budgets pre-2030 is unlikely to achieve a cumulative net deficit prior to 2031 (where a net deficit would imply cumulative allowance supply, including the bank, below the cumulative total of projected covered emissions). This is the case even with the median business-as-usual emissions pathway presented by UC Davis at the November 16, 2023 cap-and-trade program workshop, which is conservative in terms of the abatement options considered.

The extent to which market participants will look ahead to future tightness is imperfect given inevitable uncertainties with markets and policies that will affect the program over the next decade, including on potential legislative action to extend or modify the cap-and-trade program past 2030. Imperfect foresight will mean prices will likely be lower than socially desirable, deterring investment.

As a result, to provide greater assurance regarding the goals of the 2022 Scoping Plan Update, we recommend that CARB remove sufficient allowances to fully account for the current bank and ensure the supply/demand balances, including allowable offsets, are net negative on a cumulative basis by 2030 across the joint cap-and-trade program. According to our analyses, this would require cuts of at least 200 million allowances prior to 2030, rather than the proposed 180 million under Option 1.

As a complementary approach, we further recommend an increase in the auction reserve price to ensure a sufficient price signal to achieve climate goals on a near and medium term horizon, rather than assuming participants will look towards future allowance scarcity past 2030. We also reiterate our recommendation from our May 8 letter on the April 23 workshop that CARB should require all entities that receive free allocation to consign their allowances for sale during the auctions. In the context of declining auction volumes, this would bolster the ability of the auction reserve price to assure a predictable price signal in line with California's climate. This measure would also increase liquidity and price transparency and correspondingly reduce potential for market manipulation in the context of smaller overall allowance budgets.

Interaction with LCFS

In determining allowance budgets aligned with California's climate goals, we also encourage CARB to consider the risk of potentially perverse interactions with the LCFS program resulting from the misaligned accounting methodologies in the two programs. The potential cross-program interaction has been largely overlooked in discussions regarding potential amendments to both programs and merits attention in the context of adjusting allowance budgets to safeguard the ambition of both cap and trade and LCFS as central tools in California's portfolio of climate policies.

In this regard, we underscore the importance of the recommendations to CARB in the letter from June 22, 2024 from Environmental Defense Fund (EDF), Nextgen California, and The Climate Center to align the treatment of biogenic emissions, which are currently exempted under the cap-and-trade program, to account for the full lifecycle impacts of bioenergy production and use.[1] Covering the fossil component of some biogenic fuels as CARB has proposed in the workshop of May 31 with respect to fuel ethanol denaturant is just an incremental step in this direction. This does not yet align the accounting of the biogenic fuel-related emissions across the cap-and-trade and LCFS programs.

If the LCFS incentivizes substitution of conventional gasoline for biogenic fuel, for example, the combustion of the biogenic share of these emissions will fully drop out of the coverage of the cap-and-trade program given the current full exemption. If the supply of allowances is unchanged but covered emissions thus decline as a result, this allows the remaining covered emissions to rise by an additional amount X under cap-and-trade, while the actual net emission reductions due to the LCFS could well be just a fraction of this (for example, on the order 10-50% in the case of ethanol). If the allowance budget is not adjusted accordingly, this represents a form of cross-program leakage or "waterbed" effect that allows overall emissions to increase across the two programs when the emissions that fall out of the coverage of the cap-and-trade program are accompanied by less than one-for-one ton of emissions actually reduced on net (e.g. if emissions rise by X under cap-and-trade while falling by 0.5X or less due to LCFS). As a result, the estimated climate benefit of an increase in biogenic fuels under an enhanced LCFS stand to be negated and overall net emissions actually stand to increase. Moreover, the full increase in net emissions is likely to occur within California while the emission reductions due to the production of many biogenic feedstocks may well occur outside the state.

This potential waterbed effect is a threat to California's climate ambition given the important projected impact of the amended LCFS on the biogenic share of the fuel mix through the end of the decade (as shown in CARB's preliminary modeling at its February 22, 2023 public workshop on LCFS potential regulation amendment concepts) as well as the dominant share of transportation emissions under the coverage of the cap-and-trade program. To protect the state's climate goals and the expected benefits under the two programs, the most direct way to address this issue would be for CARB to align the accounting system in cap-and-trade with that of LCFS. An alternative fix would be to cut the allowance budgets under the cap-and-trade program, as the quantity of fuel-related biogenic emissions grows, to compensate for the fraction of biogenic emissions that drop out of the program's coverage that is not paired with an estimated decrease in net lifecycle emissions under the LCFS.

Concern with 2026 implementation date

During the July 10 workshop, CARB indicated that a new adjusted timeline to complete the rulemaking by early 2025 would imply that the revised allowance budgets would begin with the 2026 rather than 2025 allowance year. While CARB's proposal would maintain the same cumulative emissions budgets over the longer term, the delay of one year is not insignificant in terms of the signals that it sends to market participants and other program stakeholders to channel investments supporting the state's

[1] Available from: https://ww2.arb.ca.gov/form/public-comments/submissions/15231

climate targets. Cap-and-trade markets are sensitive to near-term allowance supplies in addition to longer term cumulative budgets. These markets are not as forward looking as simple economic theory would predict given they are policy constructs subject to uncertainty. Specifically, there are substantial political uncertainties in the coming months which sentiment in California may not be immune to, including with the federal elections and the ballot initiative 2117 in Washington state. Within California, there are also uncertainties over future legislative action, including regarding the potential formal extension of the cap and trade program. At the same time, the urgency of the climate crisis is ever more apparent, underscoring the importance of California continuing to demonstrate resolute leadership to drive climate action.

As a result, we encourage CARB accelerate the implementation of its potential amendments as much as possible. For example, even if there would be challenges with implementing changes to the allowance budgets for free allocations in 2025, we urge CARB to move ahead to apply other allowance budget cuts within the 2025 vintage year. In particular, the allowance budgets for the auction could still be adjusted at the quarterly auctions following the law going into effect in 2025 while still maintaining the same cumulative budgets through 2030 and beyond.

Similarly, we urge CARB to proceed with the implementation of other proposed program updates in 2025, including with revisions to the offset program, emissions coverage, and MRR requirements. Also, if CARB decides to move forward with potential changes to corporate association group (CAG) triggers, having a drawn out implementation period would create lingering risk and uncertainty about when potential volumes would come to market. We recommend CARB balance administrative practicality with timely implementation to support effective price discovery and market signals for investment.

Supplementing the cost containment accounts

The auction reserve price along with APCR tiers are important program designs that help provide predictability to the market and avoid excessive variability in terms the evolution of prices. As a result, we support CARB's leaning to maintain all current allowances in the cost containment accounts and to remove the entire 265 million allowances out of the auction, including removal of at least 180 million through 2030. In addition, we recommend that CARB consider the possibility of supplementing the allowance budgets contributed to the APCRs after 2030.

The importance of the price containment mechanisms will only increase with the tighter allowance budgets and program continuation beyond 2030. In addition to simply maintaining the cost containment accounts, it would be appropriate to supplement these accounts as of 2031 with allowances from the post-2030 budgets. For example, using the same proportion as for 2021-2030, it would be reasonable for the program to contribute a similar fraction (about 2.88%) of the 2031-2045 allowance budget into the APCR accounts, split across the two tiers. This would help to provide greater price predictability and stability into the coming decade while reducing the chances of prices suddenly rising to the price ceiling. We recommend that CARB consider this issue as part of the current rulemaking to maximize predictability and support a smooth transition beyond 2030.

Need for a smooth transition from 2030 to 2031

We support CARB's efforts to develop a set of pathways with a smoother allowance budget trajectory to avoid a discontinuous jump between 2030 and 2031 as contemplated under the SRIA proposed Scenario

A shown in the workshop slides. Such a jump risks potential disruptions to the market and the environmental performance of the program and it would be prudent to mitigate this risk to the extent possible.

In particular, a smoother trajectory into the next decade would help ensure that the program is providing signals for steadily increasing decarbonization over time. While the smoothed Option 2 does avoid a discontinuous jump in the allowance budgets, the proposed flat cap over 2030-2036 is likely suboptimal. In contrast to a trajectory with continuous declines in the cap, this scenario would rely on market participants having the foresight to predict the future scarcity after the proverbial "seven years of plenty" in order to provide signals for continued progress on decarbonization investments. In theory, given a sufficient bank of allowances, market participants will look ahead and only the cumulative budgets should matter for the price signals today, depending on the relevant cost of capital. In reality, time horizons will be more limited for many entities and the market as a whole due to the limited number of long-term investors and the inevitable market and policy uncertainties. This risks depressing carbon prices, while requiring higher prices and faster appreciation in the future. In the absence of appropriate hedging tools, this exposes firms to the risk of a sudden and disruptive future price spike if there is a "mitigation short squeeze" forcing firms to catch up on delayed mitigation efforts (Golub, Lubowski, and Piris-Cabezas 2020).[2] In this way, rational behavior under uncertainty risks eroding the effectiveness of the market and raising costs for firms and consumers.

A preferred option would be to ensure a cap that continuously declines year on year both before and after 2030. This could be done while still maintaining the same cumulative allowance budgets both pre- and post-2030. The steadily increasing scarcity of allowances as a result from a declining cap would help provide continuous signals to regulated entities and the overall market of the need to ratchet up decarbonization investments, rather than relying on market expectations of future cap declines. Such a scenario is illustrated in the figure 1 below.

The alternative Smoothed Option 2 pathway shown by the green dotted line is a modified version of the pathway recommended in our comments on the April 23 workshop.[3] This avoids the flat cap, while starting from the same 2030 value and maintaining the same cumulative budget over 2031-2045 as the Smoothed Option 2 pathway presented in the workshop (the dotted red line).[4] Potential concerns regarding the costs relative to the flat cap of a steeper cap decline at the start of the next decade could be managed by adding to the APCR accounts in 2031, as noted above. This would be preferable to a flat cap that could risk dampening signals for continued investments to limit and reduce emissions

[2] Golub, Alexander, Ruben Lubowski, and Pedro Piris-Cabezas. 2020. "Business responses to climate policy uncertainty: Theoretical analysis of a twin deferral strategy and the risk-adjusted price of carbon." *Energy* 205: 1-9.

[3] Available from: https://ww2.arb.ca.gov/form/public-comments/submissions/10956

[4] This illustrative pathway modifies the Smoothed Option 2 pathway starting in 2031. begins with 1.215% rate of cap decline in 2031, which increases by 21% per year through 2045. Other alternative formulas could achieve the same objective of a steadily declining cap that maintains the same cumulative emissions over 2031-2045.

Figure 1. Alternative 2031-2045 Allowance Budget Trajectory under "Smoothed Option 2"