

June 24, 2022

Ms. Liane Randolph
Chair, California Air Resources Board
1001 I Street
Sacramento, CA 95814

**Re: Independent Emissions Market Advisory Committee comments on the
Draft 2022 Climate Change Scoping Plan**

Dear Chair Randolph and Members of the Board,

On behalf of the Independent Emissions Market Advisory Committee (IEMAC),¹ thank you for the opportunity to comment on the draft 2022 Climate Change Scoping Plan.² We commend the staff of the California Air Resources Board for the significant time and expertise that has gone into developing this draft, and we look forward to continuing to work with them in refining this Plan for California to achieve its 2030 greenhouse gas reduction goal and net-zero greenhouse gas emissions no later than 2045.

The IEMAC was established in 2017 with the adoption of AB 398 and produces an annual report to CARB and the Legislature on the environmental and economic performance of California's cap-and-trade program. The IEMAC's 2021 report made a series of recommendations regarding the ambition and stringency of the cap-and-trade program, the program's role in achieving the state's statutory greenhouse gas reduction goal, and the role of the Scoping Plan in clearly defining that role.³ The draft Scoping Plan describes the cap-and-trade program as a measure to "fill the gap"⁴ between expected emission reductions from non-cap-and-trade policies and the statewide emission limits. California's cap-and-trade program should serve as an important backstop and a means of cost containment. However, important questions remain as to the ability of the cap-and-trade program as currently designed to effectively serve in these roles.

¹ This letter is sent on behalf of the IEMAC, rather than its individual committee members. Pursuant to IEMAC policy, this letter does not represent the views of the Legislative Analyst's Office nor those of the IEMAC's non-voting committee member, Dr. Ross Brown.

² California Air Resources Board (2022), Draft 2022 Scoping Plan, <https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf>

³ 2021 Report of the Independent Emissions Market Advisory Committee: <https://calepa.ca.gov/wp-content/uploads/sites/6/2022/01/2021-IEMAC-Annual-Report.a.pdf>

⁴ Draft 2022 Scoping Plan, pages 89-90.

The comments below build upon the recommendations of the 2021 IEMAC report and probe the role of cap-and-trade as the mechanism to ensure California meets its emission reduction goals. Specifically, these comments address needed clarifications regarding the reference scenario, the importance of considering cost-effectiveness in meeting ambitious climate goals, design considerations to ensure the cap-and-trade program can “fill the [emissions] gap,” and the urgency of regulatory action by CARB to provide clear guidance to the market.

Two overarching points must be made that are relevant to the full draft Scoping Plan and the analysis included in these comments. First, the lack of transparency in this draft Plan has made the task of evaluating its efficacy challenging. It is often unclear in the draft Plan and its supporting documentation what assumptions are being made and on what basis. Second, this draft Scoping Plan focuses more than previous Scoping Plans on technological, rather than policy, pathways to achieving climate goals. The IEMAC recognizes that it is inherently challenging to do ambitious scenario planning that identifies the set of technological possibilities while also describing a policy pathway that could actually achieve those outcomes. However, policy pathways are just as important as technological ones, and the IEMAC hopes that these comments will support progress along these parallel pathways toward California’s climate goals.

1. Clarification of the reference scenario

The draft Scoping Plan briefly discusses the important role of the cap-and-trade program in helping California achieve its 2030 greenhouse gas emissions limit.⁵ As part of this discussion, CARB provides an update to what it calls its “reference scenario” — a description of the expected outlook for greenhouse gas emissions that accounts for expected macroeconomic conditions and the anticipated effect of all non-cap-and-trade policies.

From a technical perspective, the reference scenario plays a critical role in CARB’s estimate of how much work the cap-and-trade program needs to do to help California achieve its 2030 climate goal. As in previous Scoping Plans, CARB expects the cap-and-trade program to “fill” or “close the gap” between the reference scenario and the 2030 emissions limit.⁶

⁵ Draft 2022 Scoping Plan, pages 86-91.

⁶ Draft 2022 Scoping Plan, page 89 (indicating the cap-and-trade program will “fill the gap”); 2017 Scoping Plan, page 30 (see Figure 9) (where what the draft 2022 scoping plan calls the “reference scenario” is called the “Scoping Plan Scenario” and is intended to “close the gap”).

Thus, the total reductions the cap-and-trade program must deliver to satisfy SB 32's 2030 emissions limit is based on the level of emissions projected in the reference scenario.⁷

In the 2017 Scoping Plan, CARB projected that reference scenario emissions would fall to about 320 million tCO_{2e} by 2030, or about 60 million tCO_{2e} above the 2030 statewide emissions limit. The draft 2022 Scoping Plan projects that emissions will fall to about 304 million tCO_{2e} by 2030, or about 44 million tCO_{2e} above the 2030 statewide emissions limit.⁸ Based on a projection of the 2030 reference scenario that is about 16 million tCO_{2e} lower in the draft 2022 Scoping Plan than it was projected to be in the 2017 Scoping Plan, CARB suggests the state will need to rely less on the cap-and-trade program than it had previously anticipated.⁹

Because the reference scenario effectively defines the amount of mitigation needed from the cap-and-trade program and is likely to be used as a technical input to any future cap-and-trade rulemaking processes, it is important to understand how this scenario is constructed and what any changes to its outlook represent. Unfortunately, the draft Scoping Plan does not provide adequate information about how the scenario was constructed from a technical perspective nor why CARB now expects substantially lower emissions by 2030 than it did in the 2017 Scoping Plan. There may be good reasons to expect lower emissions, such as the falling costs of renewable energy and electric vehicles or new policy measures, but it is reasonable to expect a more complete technical explanation as part of CARB's public engagement process. The information provided in the draft Scoping Plan is not sufficient to inform a robust public discussion.

Although the IEMAC does not want to prejudge what a reasonable reference scenario might show, the lack of a more complete and transparent analysis is notable because there is a significant discrepancy between the reference scenario and CARB's own greenhouse gas inventory data. CARB's technical modeling work includes reference scenario emissions that go back to the year 2015. These data can be compared against CARB's official greenhouse gas emissions inventory data,¹⁰ which are available through 2019, as well as against CARB's provisional estimates of 2020 and 2021 emissions.¹¹ The reference scenario emissions are

⁷ The 2017 Scoping Plan generally preferred to report the cumulative emission reductions needed from 2021 through 2030 (identified as 236 million tCO_{2e} in Figure 7), whereas the draft 2022 Scoping Plan prefers to report annual emission reductions needs in 2030 (identified as 60 million tCO_{2e} in Table 2-4).

⁸ Draft 2022 Scoping Plan, page 91 (Table 2-4).

⁹ Draft 2022 Scoping Plan, page 89.

¹⁰ CARB, California Greenhouse Gas 2000-2019 Emissions Trends and Indicators Report (2021 Edition), <https://ww2.arb.ca.gov/ghg-inventory-data>.

¹¹ CARB, Supplemental Report of the 2021-2022 Budget Act, Item 3900-001-3237 (2022), <https://ww2.arb.ca.gov/resources/documents/supplemental-report-2021-2022-budget-act-item-3900-001-3237>.

consistently lower than CARB's own emissions inventory data, with a gap of nearly 16 million tCO_{2e} in 2019 that grows to 27.3 (±24.4) million tCO_{2e} by 2021.¹² This discrepancy is potentially as big as or even significantly larger than the change in 2030 emissions projected in the reference scenario (a difference of about 16 million tCO_{2e} in 2030), on which basis the draft 2022 Scoping Plan suggests the cap-and-trade program will need to do less work.¹³ To the extent that using lower historic emissions estimates results in lower forward-looking projections, the size of the discrepancy indicates that any potential shortcomings with the reference scenario may be very consequential to CARB's bottom-line analysis.

A detailed breakdown of the sector-by-sector differences indicates that the largest discrepancies are found in the buildings and industrial sectors.¹⁴ Because emissions from these sectors generally result from capital-intensive infrastructure investments that tend to change slowly over time, a persistent discrepancy in these sectors is not readily explained by reasonable differences in assumptions, such as different views about how persistent the shift in commute-related transportation following the global pandemic will be. It would be very helpful to provide background on the assumptions that guide these estimates.

Again, the IEMAC does not want to prescribe what a robust technical discussion of these issues should look like, but the size and pattern of the discrepancies identified here call for additional analysis and explanation. As the IEMAC has been unable to discuss these matters with CARB thus far, we respectfully request a more complete explanation in the next iteration of the Scoping Plan.

- **Recommendation 1:** We urge CARB to provide a detailed explanation of its new reference scenario that addresses, with reasonable supporting technical information, why the final reference scenario might be different from projections made in the 2017 Scoping Plan. If the reference scenario continues to exhibit any significant discrepancies with the state's official inventory data, either on an aggregate or sectoral basis, then CARB should also explain the likely cause(s) and possible implications of such a discrepancy with respect to its forward-looking projections for the reference scenario.

¹² Danny Cullenward, California's draft climate change scoping plan is incomplete, CarbonPlan (May 17, 2022), at Table 3, <https://carbonplan.org/blog/scoping-plan-comments>.

¹³ Draft 2022 Scoping Plan, page 91 (see Table 2-4) (showing projected reference scenario 2030 emissions falling from 320 to 304 million tCO_{2e} in 2030, for a difference of about 16 million tCO_{2e}).

¹⁴ Cullenward (2022) at Table 3.

- **Recommendation 2:** To facilitate comparison with analysis published in the 2017 Scoping Plan, CARB should report the expected contribution of the cap-and-trade program both on a cumulative basis over the period 2021 through 2030 (as was done in 2017) as well as on an annual basis in 2030 (as is indicated in the draft 2022 document).

2. Cost-Effectiveness

The Scoping Plan process is designed to assess the technical feasibility of the state’s climate goals vis-a-vis a business-as-usual trajectory. Although the Scoping Plan does not set out to amend the cap-and-trade or any other program regulations, it does set the stage for the subsequent policy discussion. Policy preferences and directions articulated in the Scoping Plan should therefore be taken seriously because they will ultimately frame and constrain policy choices and outcomes.

The draft Scoping Plan concludes that it is technologically feasible to achieve our ambitious climate goals via prescriptive regulations, direct investments, and mandates. However, just because there is a feasible path to California’s GHG reduction goals does not mean it should be mandated. This approach risks locking in expensive mitigation investments while leaving relatively cost-effective mitigation potential untapped. As we transition from a scoping process to a more challenging rulemaking process, it will be important to think not only about technical feasibility, but also affordability, cost containment, equity, and exportability.

AB 197 requires CARB to estimate the cost-effectiveness of the measures identified in the Scoping Plan process. The draft Scoping Plan reports the cost per metric ton of several measures. Some of these cost estimates are high. For example, the costs per ton of CO_{2e} avoided via the decarbonization of industrial energy supply building decarbonization and are \$240 and \$754, respectively over the period 2022-2035.¹⁵

The *average* cost per ton estimates reported in the draft Scoping Plan can be compared against the *marginal* GHG abatement costs that we currently observe in some of California’s more flexible, market-based policy regimes. In California’s cap-and-trade program, allowances are currently valued in the range of \$30 - \$35/ton. The relatively low carbon prices suggest that there are GHG abatement opportunities that cost less than measures identified in the draft Scoping Plan.¹⁶

¹⁵ Draft 2022 Scoping Plan, page 125 (see Table 3-10).

¹⁶ Legislative Analyst’s Office (2018), Assessing California’s Climate Policies — An Overview, pages 14-16, <https://lao.ca.gov/Publications/Report/3911>.

There are, of course, other benefits that vary across abatement options, but are not captured in cost/ton numbers. For example, sector-specific policies may drive innovation that makes it possible to achieve the state’s long-run goals. That said, if policymakers are going to ask Californians to pay for relatively expensive GHG mitigation measures, they should make a plausible case that additional benefits justify the higher price.

California’s cap-and-trade program has the potential to play two critical roles as we transition from a scoping process to a rulemaking process that is oriented around multiple objectives including cost containment and affordability. At a minimum, it should provide a backstop that can be relied upon to pick up slack that is created if mandated measures and/or more prescriptive policies fail to deliver GHG reductions as expected. In addition, it should serve as an essential fall back if measures identified in the Scoping Plan are found to be relatively or unexpectedly expensive, in which case policy makers should ask more of the carbon market.

To serve effectively in these roles, reforms will be needed to bring long term compliance instrument supply in line with the state’s GHG reduction goals. This will require confronting difficult questions about the program’s post-2030 future sooner rather than later.

- **Recommendation 3:** We urge CARB to elevate affordability, cost containment, and equity objectives when identifying policy options going forward. If GHG mitigation measures are mandated or prescribed and are significantly more expensive than existing market-based mitigation policies, CARB should identify plausible additional benefits (beyond GHG reductions) that justify a higher per-ton price.

3. The cap-and-trade program’s strategic role and design

As discussed above, the draft Plan suggests that cap and trade will “fill” or “close the gap” between the reference scenario and California’s 2030 greenhouse gas emissions limit. From a strategic perspective, this means that the cap-and-trade program is meant to absorb uncertainty about the performance of other policy measures and macroeconomic conditions. In order for the cap-and-trade program to achieve this role, the supply of allowances and carbon offsets needs to be carefully calibrated in the face of significant uncertainty about future conditions. The draft Scoping Plan does not contain any discussion of how this might be done, however, nor a robust evaluation of the evidence observed to date.¹⁷

¹⁷ See the Allowance Banking chapter in the 2021 IEMAC report for a discussion. See also CARB’s staff report responding to Board Resolution 18-51, https://ww2.arb.ca.gov/sites/default/files/cap-and-trade/Allowance%20Report_Reso18_51.pdf.

Some of the draft Plan’s observations of current and potential future program conditions arguments are also in tension and deserve to be more fully explored in the final Plan. For example, the draft Plan suggests that the existing bank of allowances will be “exhausted by the end of the decade,”¹⁸ which would be consistent with reference scenario emissions being relatively high in the years ahead. Nevertheless, the draft Plan suggests reference scenario emissions will be relatively low and thus the program “will likely play a reduced role”¹⁹ relative to what was envisioned in the 2017 Scoping Plan. To the extent that CARB is more optimistic about future reference scenario emissions, that implies that there will be *less* pressure to reduce the current bank of allowances, not more.

The IEMAC appreciates that any long-term projection of the supply-demand balance in the cap-and-trade program is subject to significant uncertainty. This is precisely why market design is so important: any single projection of the forward outlook for supply-demand balance is unlikely to be accurate, especially in light of the interaction between covered emissions and other regulatory policies. We encourage CARB to reflect on the history of environmental policy planning, in which some of the greatest successes have involved unanticipated innovations that are enabled by flexible policy designs that are designed to achieve concrete environmental outcomes.

Finally, the Environmental Justice Advisory Committee released draft recommendations on the full Scoping Plan to prioritize greater environmental and equity outcomes, including from the cap-and-trade program.²⁰ The IEMAC recognizes that these recommendations were only available in draft form during previous phases of the Scoping Plan development process and that some were specifically considered in the draft report, but there is no discussion of the EJAC’s cap-and-trade recommendations. We respectfully suggest that CARB should prioritize addressing the final EJAC recommendations on cap and trade in its published plan.

- **Recommendation 4:** We urge the Board to review its past projections for allowance banking outcomes, recent evidence about the observed outcomes, and specific strategies for how to ensure that future allowance budgets are aligned with the statewide 2030 emissions limit.

¹⁸ Draft 2022 Scoping Plan, page 87.

¹⁹ Draft 2022 Scoping Plan, page 89.

²⁰ Environmental Justice Advisory Committee, Preliminary Draft of EJAC Scoping Plan Recommendations (April 1, 2022), pages 18-20, https://ww2.arb.ca.gov/sites/default/files/2022-04/EJAC%20Workgroup%20DRAFT%20Recommendations_4_1_22.pdf.

- **Recommendation 5:** The final 2022 Scoping Plan should discuss and respond to the Environmental Justice Advisory Committee’s recommendations on cap and trade.

4. CARB must act with urgency and start a cap-and-trade rulemaking in early 2023

If California is planning to rely on the cap-and-trade program to close the emissions gap and provide greater certainty of meeting the 2030 greenhouse gas reduction goal, then it needs to act with urgency to ensure the program is fit for this purpose. This means that a cap-and-trade rulemaking needs to commence as soon as possible, and no later than the first quarter of 2023 for potential changes to the program to take effect in 2024.

The draft Plan indicates that California Environmental Protection Agency Secretary Jared Blumenfeld is expected to report to the legislature by the end of 2023 with an update on allowance supply and legislative proposals.²¹ However, this timeline suggests that any corrective measures will not yet have been fully described, let alone implemented. This leaves a strikingly small amount of time to ensure California can meet its 2030 goal. A more ambitious and aggressive timeline is necessary: the 2022 Scoping Plan process sets the stage for understanding the role of the program for the balance of this decade and 2023 is the time to determine what changes are necessary to ensure the program can play that role. Any changes must then take effect as soon as possible, and no later than the first quarter of 2024, to ensure ample time for regulated entities to take any potentially necessary steps to ensure program compliance, and for the state to take full advantage of the shrinking window to meet the 2030 goal.

It is imperative that California meet its statutory 2030 greenhouse gas reduction goal, and that it swiftly moves onto a path to achieve net-zero greenhouse gas emissions no later than 2045. While the latter target is not in statute, CARB and other agencies are already planning for a 2045 time horizon, so it is reasonable to expect the policies California is relying on to also begin aligning with this timeline. Even as the draft Scoping Plan charts a path to achieving net-zero emissions no later than 2045, it is surprisingly silent on a post-2030 cap-and-trade program. With 2030 only eight years away, regulatory certainty for the next decade would enable entities covered by the cap-and-trade program to more confidently plan for a decarbonized future.

²¹ Ibid., page 87.

- **Recommendation 6:** CARB should begin a rulemaking process to evaluate the cap-and-trade program design and consider whether any changes might be necessary to achieve the 2030 emissions limit while promoting cost-effective climate mitigation. In order to provide adequate time for involved stakeholder engagement, this process should begin in the first quarter of 2023.

The IEMAC appreciates the ongoing work of CARB in developing the 2022 Climate Change Scoping Plan, and looks forward to further discussions and iterations of the draft Plan.

Respectfully Submitted,

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cc: Assemblymember Al Muratsuchi
Chair, Joint Legislative Committee on Climate Change Policies

Senator Josh Becker
Vice Chair, Joint Legislative Committee on Climate Change Policies