

April 4, 2022

Rajinder Sahota
Deputy Executive Officer for Climate Change and Research
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: 2022 Scoping Plan – comments

Dear Ms. Sahota,

We are writing on behalf of the Union of Concerned Scientists to provide comments in response to CARB's 2022 Scoping Plan Update public workshop on initial modeling results.

We have several comments on some of the sector specific modeling results:

Carbon Free Electricity Grid:

- *Electric sector decarbonization targets:*

UCS is concerned about the electric sector decarbonization assumptions used in the initial modeling. Alternatives 2, 3, and 4 are all designed to meet the 100% zero-carbon retail sales goal established in SB 100, but these scenarios do not decarbonize the electric sector beyond that requirement. As a result, all three scenarios still involve approximately 30 million metric tons (MMT) of emissions in 2045,¹ and the electric sector makes a substantial contribution to economy-wide unmitigated emissions in 2045.² These remaining emissions must be offset by carbon dioxide removal ("CDR") in order to achieve carbon neutrality. Instead of relying so heavily on CDR strategies, UCS encourages CARB to study more aggressive decarbonization of the electric sector, which may prove to be a more feasible and economic alternative.

- *Electric sector gas retirements and new build*

We also observed gas power plant retirement assumptions that deserve further scrutiny. For example, in Alternative 1, which supposedly "excludes combustion-based generation resources regardless of fuel" in the electric sector,³ a significant amount of gas capacity remains on the system. While the results state that these gas plants provide capacity and that their capacity factor is 0% (indicating that they never actually operate), surely gas plants that are needed to meet reliability requirements would operate at least occasionally. On the other hand, in the "No Combustion" study scenario in the CEC's SB 100 report, all combustion resources are retired by

¹ E3, *CARB Draft Scoping Plan: AB 32 Source Emissions Initial Modeling Results* (March 15, 2022), slide 23. <https://ww2.arb.ca.gov/sites/default/files/2022-03/SP22-Model-Results-E3-ppt.pdf> ("Scoping Plan Initial Modeling Results").

² Ibid, slide 9.

³ CARB, *PATHWAYS Scenario Modeling: 2022 Scoping Plan Update* (December 15, 2021), p. 8.

https://ww2.arb.ca.gov/sites/default/files/2021-12/Revised_2022SP_ScenarioAssumptions_15Dec.pdf

2045.⁴ UCS encourages CARB to use a similar approach in its modeling for Alternative 1: all combustion-based resources should be retired to ensure that they do not operate in this scenario.

- Last, we were surprised to see 10 gigawatts of new gas power plant capacity built in Alternatives 2, 3, and 4 by 2045.⁵ This large buildout of new gas capacity is inconsistent with previous studies examining electric sector decarbonization,⁶ and it is not clear what assumptions have been changed to lead to this result. It does not seem sensible or prudent to build additional gas capacity to meet California’s carbon neutrality goals, and UCS looks forward to more closely examining the modeling inputs and assumptions to discern exactly which factors are driving this counter-intuitive and likely inappropriate buildout of gas capacity.

Oil Refinery Phaseout:

- We appreciate that the modeling included “Petroleum Refining Remaining” as a key metric describing the scoping plan scenarios. It is important to be explicit about the implications of California’s climate goals for the refining sector to give stakeholders and policy makers an opportunity to plan for what is a major transition. As the scenarios show, the scoping plan implies that at least 60% of refinery capacity should be phased out by 2035 and at least 80% and up to 100% by 2045. The closure of most oil refineries in the next 22 years will be a major change for communities and workers, and the more time and clear guidance these stakeholders have, the better they can prepare. Toward that end we strongly support the specific recommendations of the Environmental Justice Advisory Committee on oil refineries (section F2 of Preliminary Draft of EJAC Scoping Plan Recommendations March 10, 2022).

Thank you for the consideration of these comments. We look forward to continuing to work with you as this planning process continues.

Sincerely,

Jeremy Martin
Director of Fuels Policy & Senior Scientists

Mark Specht
Senior Energy Analyst

Erin Rodriguez
CA Policy Advocate

⁴ Joint Agencies, *2021 SB 100 Joint Agency Report: Achieving 100 Percent Clean Electricity in California: An Initial Assessment* (March 2021) pp. 93-94. (“Joint Agencies SB 100 Report”)

<https://efiling.energy.ca.gov/EFiling/GetFile.aspx?tn=237167&DocumentContentId=70349>

⁵ Scoping Plan Initial Modeling Results, slide 26.

⁶ See, for example: Joint Agencies SB 100 Report; E3, *Long-Run Resource Adequacy under Deep Decarbonization Pathways for California* (June 2019). https://www.ethree.com/wp-content/uploads/2019/06/E3_Long_Run_Resource_Adequacy_CA_Deep-Decarbonization_Final.pdf