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December 15, 2022

(Submitted via the Draft 2022 Climate Change Scoping Plan and by email to Rajinder.Sahota@arb.ca.gov.)

Ms. Rajinder Sahota
California Air Resources Board
1001 I Street,
Sacramento, CA 95814

Re: Comments on the Final 2022 Scoping Plan Update and Appendices

Dear Ms. Sahota:

The Western States Petroleum Association (WSPA) appreciates the opportunity to present these comments on the Final 2022 Scoping Plan[1] released by the California Air Resources Board (CARB) on November 16, 2022. WSPA is a non-profit trade association that represents companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas, and other energy supplies in California and four other western states. It has been an active participant in air quality planning issues for over 30 years.

Our members form the backbone of California's economy, providing jobs, fueling air, road, and marine transport, and supplying necessary energy to the manufacturing and agriculture sectors. Our industry generates more than $152 billion in total economic output and make significant fiscal contributions to California's state and local governments, including more than $21 billion in state and local tax revenues, $11 billion in sales taxes, $7 billion in property taxes, and $1 billion in income taxes.

While the economic impact numbers are compelling, our industry's greatest asset and contribution to the state's economy are the more than 366,000 hard-working women and men with careers providing affordable, reliable energy in California. We produce 42 million gallons of gasoline and 10 million gallons a day of diesel to support the State's 35 million registered vehicles. All these contributions to the state occur while our members continue to lower the carbon intensity (CI) of their fuels consistent with the low carbon fuel standard (LCFS) program and spur investment in emission reduction technologies and renewable fuels.

WSPA understands the large technical challenges and uncertainties associated with developing and modeling a sector-by-sector roadmap over the next 20+ years that outlines a path for the State achieve carbon neutrality by 2045 and commends CARB's efforts in developing such a roadmap under the Final 2022 Scoping Plan. We are supportive of CARB's acknowledgement of the infeasibility of a complete phase-out of oil and gas refining, and the need for permitting

[1] CARB. 2022. 2022 Scoping Plan for Achieving Carbon Nuetrality. November 16. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp.pdf. Accessed: December 2022.

reforms to implement the necessary technology options (such as carbon capture and storage (CCS), carbon dioxide removal (CDR), and hydrogen) to achieve the State's decarbonization objectives. We do however continue to have significant concerns about the feasibility of implementing the proposed sector-specific technology-forcing mandates on the timelines suggested in the Final 2022 Scoping Plan, and urge CARB to consider fuel and technology neutral maket based mechanisms that would be more technologically and economically feasible in accordance with Assembly Bill 32.

Our comments with some additional details are provided below:

1. **The Final 2022 Scoping Plan made significant changes to the draft plan without providing stakeholders with sufficient technical documentation or time for review or input.**

   Since the issuance of the draft Scoping Plan and closure of the public comment period, CARB has made major revisions to the modeling assumptions and actions, in part responding to the Governor's directives and legislation passed at the end of the 2022 session. These resulted in significant differences in the modeling results when compared with the Draft 2022 Scoping Plan. While CARB presented an overview of the final modeling results in a public workshop on October 28, 2022, the technical documentation that was released along with the Final 2022 Scoping Plan on November 16, 2022 does not provide stakeholders with the supporting information necessary to understand the new strategy. CARB claims that they developed this Scoping Plan "…with open and transparent opportunities for stakeholders and the public to engage...".[2] However, they **did not** provide sufficient opportunity for stakeholders to submit written comments on the major technical revisions in the Final 2022 Scoping Plan. Furthermore, the Final Environmental Assessment (EA) of the 2022 Scoping Plan was not even released until December 13, giving stakeholders **less than two (2) days** to review and comment before the December 15th Board Meeting to Consider adoption of the Final 2022 Scoping Plan.

   Some of the major revisions made in the Final 2022 Scoping Plan[3] (as compared to the Draft 2022 Scoping Plan[4]) include:

   - Greenhouse gas (GHG) reduction targets have been accelerated from 40% to 48% below 1990 levels by 2030 and include an 85% reduction of anthropogenic emissions below 1990 levels by 2045.
   - Vehicle miles traveled (VMT) per capita reduction targets have been accelerated from 12% to 25% below 1990 levels by 2030 and from 22% to 30% below 1990 levels by 2045. This is despite the fact that the State has failed to meet any prior VMT reduction target.
   - 2045 targets to meet aviation fuel demand with electricity and hydrogen have been accelerated from 10% to 20% without any demonstration of technical feasibility.

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2 Ibid.

3 Ibid.

4 CARB. 2022. Draft 2022 Scoping Plan Update. May 10. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf. Accessed: December 2022.

- A new target has been established for 20 million metric tons (MMT) of carbon dioxide removal (CDR) by 2030 and 100 MMT by 2045.
- A new target has been established for 20 gigawatts (GW) of offshore wind power by 2045 and avoidance of new natural gas capacity in the electric sector.
- GHG emissions from electricity generation in the baseline scenario decreased by 9.0% in 2032 and 20.8% in 2045. For the proposed scenario, GHG emissions from electricity generation decreased by 6.1% in 2032 and 72.4% in 2045.
- 2045 resource build for solar generation was reduced from 90 GW to 72 GW for utility solar and from 41 GW to 10 GW for hydrogen production. The technical basis for these reductions was not provided.
- The average annual cost per metric ton of reduced carbon dioxide equivalent (CO_2e) to generate clean electricity from 2022-2045 decreased from $497/ton to $161/ton for electricity generation. There were also significant reductions in the annual average cost per metric ton of reduced CO_2e to decarbonize the industrial energy supply (reduced from $356/ton to $274/ton) and decarbonize buildings (reduced from $598/ton to $213/ton). The financial rationale and assumptions for these dramatic downward revisions has not been explained.
- The number of battery electric vehicles (BEVs) in the light-duty vehicle (LDV) sector increase by 5 million in 2045, while the number of fuel cell electric vehicles decrease by 2.4 million. We again note that CARB has failed to consider the significant out of state lifecycle GHG emissions which would be directly caused by this mandate.
- Targets were added to install 6 million heat pumps in homes by 2030, retrofit 3 million homes to be all-electric by 2030 and 7 million homes by 2035.

While CARB presented an overview of the final modeling results in a public workshop on October 28, 2022, the technical documentation that was released along with the Final 2022 Scoping Plan on November 16, 2022 fails to provide stakeholders with the supporting information necessary to meaningfully review the updated scenario. Pursuant to CARB's Certified Regulatory Program implementing the California Environmental Quality Act, CARB is required to prepare and keep an administrative record that includes "external studies and any internal communications that were actually relied upon for decision-making by the state board, information submitted to CARB, and any other information required by law to be considered by the state board in making its decision."[5] This requirement ensures that members of the public are able to meaningfully engage with CARB's analysis of environmental impacts. CARB has failed to transparently disclose, as required, the technical information underlying the Final 2022 Scoping Plan Scenario.

Further, CARB did not provide sufficient opportunity for stakeholders to meaningfully engage with the major technical revisions in the Final 2022 Scoping Plan. Given the major revisions in CARB's Final 2022 Scoping Plan Update, and accompanying Final EA, the resulting rushed and incomplete process for the Final 2022 Scoping Plan and the Final EA

[5] 17 C.C.R. § 60005.

has unfortunately denied stakeholders the opportunity to understand or provide meaningful comments on proposed final Plan.

2. There is large uncertainty in the selected pathway's ability to meet California's climate targets and the 85% reduction target for anthropogenic GHG emissions by 2045.

WSPA understands CARB's efforts to update the Scoping Plan to accommodate new climate legislation and executive orders. However, as noted in our previous comment letters, WSPA remains concerned about the feasibility of the following key assumptions:

- Oil and Gas and Refining: WSPA agrees with CARB that a complete phaseout of oil and gas extraction and/or refining by 2045 is not feasible and appreciates CARB's recognition of California's role as a net exporter of fuels to neighboring states. Given that California refineries have responded to regulations that result in the provision of lower-emission fuels, this benefit is exported to these jurisdictions and will only grow as greater emission reductions ensue with in-State activities. Premising a phase down of California refining operations in line with in-State demand reductions would limit the potential to provide low-CI fuels to other regions **and would result in a net increase to global GHG emissions**. In order to meet remaining demand, neighboring states would be required to either utilize higher-CI fuels from jurisdictions with weaker regulations or import additional fuel that would increase associated transport emissions. CARB should study the significant risk of GHG emissions leakage that could result from potential policies to limit future in-State oil and gas development.
- CCS and CDR: WSPA appreciates CARB's recognition that the use of CCS and CDR are necessary to achieve the State's climate goals. Implementation of CDR/CCS at scale will be pivotal to the overall success of the Scoping Plan to achieve carbon neutrality by 2045. WSPA also strongly agrees with CARB that significant improvements are needed to streamline and speed up permitting for all low-carbon technologies including CCS. However, as stated in our previous comment letter,[6] in order to ensure the success of future CCS/CDR programs, CARB must also take the following steps: (a) establish and clarify the roles of state agencies to accelerate CCS/CDR programs; (b) develop an improved project environmental review under the California Environmental Quality Act (CEQA); (c) allow for enhanced oil recovery; and (d) improve the CCS Protocol under the Low Carbon Fuel Standard (LCFS) and establish a similar methodology under the Cap-and-Trade program. Additionally, the provision of SB 905 that prohibits the use of pipelines to transport CO_2 must also be removed.
- Vehicle Miles Travelled (VMT): The Final 2022 Scoping Plan sets VMT reduction targets for passenger vehicles that are more aggressive than the Draft Scoping Plan. As WSPA has stated in its previous comment letter dated October 24, 2022,[7] it is highly uncertain that CARB could achieve such aggressive targets. The 2022 Draft SB 150 Progress

[6] WSPA. 2022. Comments on the Recirculated Draft Environmental Analysis for the Draft 2022 Scoping Plan Update. October 24. Available at: https://www.arb.ca.gov/lists/com-attach/35-sp22-recirc-ea-ws-UzICZlcJAmIKPlAP.pdf. Accessed: December 2022.

[7] WSPA. 2022. Comments on the Recirculated Draft Environmental Analysis for the Draft 2022 Scoping Plan Update. October 24. Available at: https://www.arb.ca.gov/lists/com-attach/35-sp22-recirc-ea-ws-UzICZlcJAmIKPlAP.pdf. Accessed: December 2022.

Report[8] highlighted that VMT reductions are largely dependent on factors outside CARB's purview such as gas prices, employment, availability of affordable housing, and the rebound from the COVID pandemic. Given that historical VMT trends have shown continuous increases since the 2018 SB 150 Progress report,[9] CARB should consider the implementation of technology-neutral vehicle/fuel pathways to achieve the GHG reductions needed.

- Solar Growth: The Final 2022 Scoping Plan actions would require unprecedented levels of growth within the utility-scale solar (4.3 gigawatt (GW) year-over-year from now through 2035) and battery energy storage (2.5 GW year-over-year from now through 2035) sectors to accommodate increased penetration of battery electric vehicles under the Scoping Plan Scenario. As noted in our previous comment letters,[10,11] the development of solar panel and battery production facilities would occur both within and outside the State. GHG emissions associated with these out of State activities that will be driven by California's policies should be considered in the Scoping Plan analyses. CARB has a responsibility under AB 32 to minimize the leakage potential of the actions and policies outlined in the 2022 Scoping Plan Update. CARB and other state agencies must develop comprehensive analyses to estimate the emissions increases outside of California and the feasibility of building out the electric grid infrastructure within the state to meet the timelines of the Final 2022 Scoping Plan.

3. WSPA continues to maintain that a technology and fuel neutral, market-based approach would be a more technologically and economically feasible manner to achieving California's GHG reduction goals as opposed to the proposed strategy of technology-forcing mandates.

WSPA has repeatedly brought to CARB's attention concerns regarding the Scoping Plan's overreliance on electrification and ZEV technology for projected emissions reductions, yet CARB has not considered or developed an alternative scenario that employs low-carbon technology to mitigate the economic impacts of increased electricity cost, increased costs of passenger vehicles, and job losses. CARB's prescriptive approach will result in significant economic impacts that will disproportionately impact low- and middle-income communities. Table 3-2 of the Final 2022 Scoping Plan[12] clearly shows that in 2045, the total income of households that make less than $50,000 will decline by $3.9 billion whereas households

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8 CARB. 2022. Draft 2022 Progress Report: California's Sustainable Communities and Climate Protection Act. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-07/2022_SB_150_Main_Report_Draft_ADA.pdf. Accessed December 2022.

9 CARB. 2018. 2018 Progress Report: California's Sustainable Communities and Climate Protection Act. Available at: https://ww2.arb.ca.gov/sites/default/files/2018-11/Final2018Report_SB150_112618_02_Report.pdf. Accessed December 2022.

10 WSPA. 2022. Comments on California Air Resources Board's (CARB) 2022 Scoping Plan Update – Initial Modeling Results Workshop. April 4. Available at: https://www.arb.ca.gov/lists/com-attach/41-sp22-modelresults-ws-AWBUMF0DUjIGMgVa.pdf. Accessed: December 2022.

11 WSPA. 2022. Comments on the Recirculated Draft Environmental Analysis for the Draft 2022 Scoping Plan Update. October 24. Available at: https://www.arb.ca.gov/lists/com-attach/35-sp22-recirc-ea-ws-UzICZlcJAmIKPlAP.pdf. Accessed: December 2022.

12 CARB. 2022. 2022 Scoping Plan for Achieving Carbon Neutrality. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf. Accessed December 2022.

that make between $100,000 and $200,000, who make up a similar portion of the population, are projected to experience a net increase in total income of $4 billion.

As we have commented during the Scoping Plan's development and through the development of the 2020 Mobile Source Strategy (MSS),[13] and the Advanced Clean Fleets (ACF)[14] and Advanced Clean Cars II (ACC II)[15] rulemakings, CARB's analyses fail to evaluate other technology options that could deliver similar if not greater air quality and GHG benefits as compared to the proposed strategy. Ramboll's case studies of the statewide heavy-heavy duty truck (HHDT)[16] and the light duty automobile (LDA)[17] fleets demonstrate that there are alternative pathways using renewables/ low carbon fuels that can dramatically reduce transportation sector carbon emissions without ZEV mandates.

Similarly, the study conducted by NERA Economic Consulting,[18] shows that market-based mechanisms are more cost-effective than sector-specific mandates in helping the State achieve carbon neutrality by 2045. In fact sector-specific mandates similar to those referenced in the May 2022 Proposed Scenario, resulted in over twice the adverse economic impacts as compared to the market-based scenario. Perhaps even more notably, the market-based scenario actually resulted in a greater volume of early GHG emission reductions in its trajectory to reach carbon neutrality.

CARB has been successful in the development of market driven performance-based programs like Cap-and-Trade and LCFS, which have been central to previous efforts to reduce GHG emissions in the State. WSPA believes that a continued focus on such performance-based programs to allow low-CI fuels would allow the State to meet its GHG reduction goals in a manner that minimizes adverse economic impacts to Californians.

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[13] CARB. 2020 Mobile Source Strategy. Available at: https://ww2.arb.ca.gov/resources/documents/2020-mobile-source-strategy. Accessed: December 2022.

[14] CARB. Advanced Clean Fleets. Available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets. Accessed: December 2022.

[15] CARB. Advanced Clean Cars II. Available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii. Accessed: December 2022.

[16] Ramboll. 2021. Multi-Technology Pathways To Achieve California's Greenhouse Gas Goals: Heavy-Heavy-Duty Truck Case Study. Available at: https://www.arb.ca.gov/lists/com-attach/78-sp22-kickoff-ws-B2oFdgBtUnUAbwAt.pdf. Accessed: October 2022.

[17] Ramboll. 2022. Multi-Technology Pathways To Achieve California's Greenhouse Gas Goals: Light-Duty Auto Case Study. Available as Attachment D at: https://www.arb.ca.gov/lists/com-attach/477-accii2022-AHcAdQBxBDZSeVc2.pdf. Accessed: September 2022.

[18] NERA Economic Consulting. 2022. Economic Impacts of Achieving California's 2022 Draft Scoping Plan's "Proposed Scenario". June. Available as Attachment D at: https://www.arb.ca.gov/lists/com-attach/4416-scopingplan2022-BnEAdVQlBTdRCAZn.pdf. Accessed: December 2022

4. **WSPA concurs with CARB's acknowledgement of the criticality of streamlining the permitting of projects in California to achieve the state's climate goals. Without such action, achievement of the State's climate goals as outlined in this Scoping Plan will not be possible.**

   CARB correctly notes that "…almost every economic sector will have the need for permitting to enable at least a 40 percent reduction below 1990 levels."[19] WSPA strongly concurs with this assessment, and further notes that permitting is a key challenge because, as CARB notes, "...refineries in California are large and complex. The actual deployment of CCS at these facilities as modeled in the Scoping Plan is uncertain."[20] WSPA shares this concern and further notes that since the complexity of these facilities can lead to protracted permitting timelines for any proposed projects, like CCS, under California's existing permitting systems.

   Further, permitting challenges will impact implementation of new technologies that CARB relies on to implement this 2022 Final Scoping Plan Update. CARB's analysis indicates that "…about 1,700 times the amount of current hydrogen supply."[21] would be required for a successful transition. Such a daunting increase will require a different permitting approach in the State. Even the relatively straightforward expectation to replace the Diablo Canyon facility with renewable resource generation proved so difficult to implement on a timely basis that Senate Bill (SB) 846[22] was passed to keep the facility operational (at least) five years beyond its originally intended closure date. Implementing the Scoping Plan will involve even more significant challenges.

Closing

Thank you for the consideration of our comments. WSPA would welcome the opportunity to discuss these comments and recommendations in more detail with you. Please feel free to contact us at tderivi@wspa.org, jverburg@wspa.org, and sellinghouse@wspa.org, with any questions or concerns.

Sincerely,

Tanya DeRivi
Vice President, Climate Policy
WSPA

cc: Jim Verburg – Director Fuels – WSPA
Sophie Ellinghouse – Vice President, General Counsel and Corporate Secretary – WSPA

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[19] CARB. 2022. 2022 Scoping Plan for Achieving Carbon Neutrality. November 16. Available at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf. Accessed: December 2022.

[20] Ibid.

[21] Ibid.

[22] California Legislative Information. SB-846 Diablo Canyon powerplant: extension of operations. Available at: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB846. Accessed: December 2022.