



October 22, 2021

Ms. Rajinder Sahota
Industrial Strategies Division
2022 Scoping Plan Update
1001 I St.
Sacramento, CA 95814

RE: World Energy Comments on the September 30, 2021, Scoping Plan Scenario Inputs Technical Workshop

World Energy appreciates the opportunity to engage and participate in the development of the 2022 Scoping Plan. In response to the September 30 Scenario Inputs Technical Workshop, World Energy wishes to provide the following comments.

World Energy is a global supplier of biofuels, with seven biodiesel production facilities and one sustainable aviation (SAF)/renewable diesel (RD) facility, totaling over 300 million gallons of annual renewable fuel production capacity among its assets. Our SAF/RD facility is located in Paramount, California and is currently being retrofitted to produce approximately 350 million gallons of low carbon fuels per year with completion anticipated in 2023. We have achieved this production in accordance with California's strict environmental permitting and while paying a living wage to our local workforce. This achievement is due in part to the Low Carbon Fuel Standard and the success of the California Air Resources Board's (CARB) programs.

Among the other fuels World Energy produces, our SAF is fully approved by ASTM and is widely used in commercial aircraft today, most recently at Los Angeles International Airport. Compared to conventional fossil jet fuel, SAF provides an immediate opportunity to decarbonize aircraft, a sector that will be incredibly difficult to electrify by California's mid-century climate goals.

World Energy's SAF is a drop-in fuel providing near-term opportunities for reducing harmful air pollution in communities adjacent to airports. SAF has verified significant emission reductions of particulate matter (PM) and sulfur oxides (SOx), moderate reductions of carbon monoxide (CO) and unburned hydrocarbons (UHC), as well as reductions in emissions of oxides of nitrogen (NOx). SAF yields significant reductions in the net life-cycle carbon dioxide (CO₂) emissions from aviation operations.¹

¹ "Sustainable Aviation Fuel: Greenhouse Gas Reductions from Bay Area Commercial Aircraft", Bay Area AQMD, October 2020. <https://www.baaqmd.gov/~/media/files/planning-and-research/research-and-modeling/saf-report-final-for-distribution-to-baaqmd-pdf.pdf?la=en>

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Based on the scenarios in slide 18 that CARB staff proposed during the workshop, World Energy believes that Alternative 1 is the least attainable option out of the four scenarios. Airplane manufacturing companies have announced that any hydrogen-based aircrafts are unlikely before 2035, and perhaps not until 2050.² Only one company is developing an e-aircraft, which is still many years away from carrying commercial passengers or cargo.^{3,4} Based on the safety and testing timelines that would predate any e-aircraft availability to the marketplace, it is difficult to justify 25% of the aviation sector's fuel being met with electricity or hydrogen by 2035. Whether this goal could be met in 2045 as Scenario 2 imagines is still also speculative, but could be used as the most aggressive technology development timeline. For these reasons, **SAF must be seriously considered as an option to decarbonize the sector within the Scoping Plan.**

Furthermore, World Energy believes that **Alternative 1 runs counter to California's environmental and economic interests** and seems to implicitly propose the rationing of aviation fuel in California to 50% of demand. Therefore, World Energy urges CARB to instead focus the Scoping Plan analysis of Alternative 1 on the availability of sustainable feedstocks to meet the current and future demand of SAF.

We believe that California can and should lead the world in demonstrating how the energy transition can deliver jobs in traditional sectors, support progress on environmental and economic equity challenges, and deliver decarbonization. We are committed to doing all we can to support CARB's work to that end.

Thank you for the consideration of our comments and we look forward to working with CARB staff on this issue.

Sincerely,

A handwritten signature in cursive script that reads "Leor Alpern".

Leor Alpern
Director of Government and Community Relations

² <https://www.wsj.com/articles/as-airbus-bets-on-hydrogen-boeing-opts-for-pragmatism-11626264000>

³ <https://www.greenbiz.com/article/flying-100-sustainable-fuel-2030-boeing-announces-development-plans>

⁴ <https://www.reuters.com/business/sustainable-business/boeing-showcases-eco-friendly-tech-industry-faces-pressure-2021-09-27/>

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