

# PROMETHEUS

November 5, 2020

Via Electronic Submission

Arpit Soni  
Manager, Alternative Fuels Section (LCFS)  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95812

Subject: Prometheus Fuels Comments re LCFS Amendments Workshops

Dear Mr. Soni:

Prometheus Fuels thanks the California Air Resources Board (CARB) for the opportunity to comment on updates to the Low Carbon Fuel Standard (LCFS). Prometheus appreciates the LCFS program and the role it has played in innovation for the industry. We understand that CARB is considering ways to amend the LCFS to spur additional innovation, and we fully support that important work. Below, we describe Prometheus and our products, summarize our engagement with California policymakers to date, and offer a recommendation for CARB to consider in its updates to the LCFS.

## Background

Prometheus removes carbon dioxide (CO<sub>2</sub>) from the air and turns it into drop-in, zero net carbon CARB gasoline, diesel, jet fuel, and hydrogen. The only inputs to this process are air and electricity from solar and wind power, and the only outputs are fuel and oxygen. Every gallon of Prometheus fuel used on the road or in the air leaves a gallon of fossil fuel in the ground. Put another way, replacing all fuels that are now made from oil and gas with zero net carbon fuels made from renewable electricity can reduce global emissions by more than 10 gigatons of CO<sub>2</sub> per year, equivalent to approximately 25% of current annual global emissions.

Importantly, this reduction in emissions can happen quickly. No modifications are needed in any of the existing car, truck, and aircraft fleets, and no modifications are needed in any of the existing infrastructure used to fuel them. Replacing fossil fuels with zero net carbon fuels will give us time to expand electrification and hydrogen use in transportation, approaches that by themselves are not fast enough to keep global warming below 1.5° C before 2030.<sup>1</sup>

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<sup>1</sup> United Nations Environment Programme, *Emissions Gap Report 2019*, November 26, 2019.

Prometheus was founded in December 2018 in California, and we have found early support for our mission. We launched from the highly selective Y Combinator incubator in early 2019, receiving investments from high profile angel investors. Earlier this year, BMW invested in Prometheus, sharing our excitement for a zero-carbon transportation future. Our company and technology have also been featured in such publications as Science magazine,<sup>2</sup> Joule,<sup>3</sup> and Motor Trend.<sup>4</sup>

## Discussion

Prometheus first introduced itself to CARB staff in Fall 2019, and provided an update to the CARB team on our progress just recently. In addition, Prometheus is preparing its applications to CARB both for fuel certification and LCFS pathway approval. We also participated in the CEC's Integrated Energy Policy Report (IEPR) workshop on near-zero vehicles and low-carbon fuels in July and submitted comments for the 2020 IEPR Update. As we told the CEC in July, we anticipate filing those applications early in 2021, with a goal to offer our gasoline at \$3.50 per gallon by summer 2021 and our jet fuel the following year.

Prometheus recognizes that California's policy focus is on electrification. Governor Newsom's September 23, 2020 executive order directs California to require that, by 2035, all new cars and passenger trucks sold in the state be zero-emission vehicles.<sup>5</sup> Meanwhile, Senate Bill 100 requires renewable energy and zero-carbon resources to supply 100% of electric retail sales to end-use customers by 2045.<sup>6</sup> While Prometheus agrees that electrification is a critical mitigation strategy to reduce carbon emissions and reverse the devastating impacts California has already suffered from global warming, it is not, by itself, sufficient to achieve these goals in the time we have left to prevent catastrophic changes to the climate.

Between now and 2035 (and 2045), tens of millions of vehicles on the road will require liquid fuels. According to the U.S. Department of Transportation, the lifespan of passenger vehicles is getting longer, with the average car spending nearly 12 years on the road as of 2019.<sup>7</sup> The economic challenges brought on by the COVID-19 pandemic promise to extend vehicle lives even further as consumers postpone new vehicle purchases in the face of an uncertain economy.

To bridge the gap between the liquid-fuels present and the electric future, policymakers cannot lose sight of innovations that deliver immediate health and environmental benefits to the state and its residents. Prometheus's fuel provides that bridge. Our fuels will be cost-competitive with petroleum gasoline and jet fuel. Our fuels require no modifications to existing engines and have no blend limits. Our fuels require no new vehicle purchases. Thus our fuels

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<sup>2</sup> Robert F. Service, *This former playwright aims to turn solar and wind power into gasoline*, July 3, 2019.

<sup>3</sup> Rob McGinnis, *CO<sub>2</sub>-to-Fuels Renewable Gasoline and Jet Fuel Can Soon Be Price Competitive with Fossil Fuels*, March 18, 2020.

<sup>4</sup> Frank Marcus, *Recycling Combustion: Creating Fuel From Carbon Dioxide: Might we soon be able to buy gasoline made from CO<sub>2</sub>?*, August 4, 2020.

<sup>5</sup> Executive Order N-79-020.

<sup>6</sup> <https://www.energy.ca.gov/sb100>.

<sup>7</sup> <https://www.bts.gov/content/average-age-automobiles-and-trucks-operation-united-states>.

can offer every community that utilizes transportation today an immediate carbon neutral solution.

## **Recommendation**

Based on the above discussion, Prometheus submits the following recommendation for CARB's consideration in the updates to the LCFS. Prometheus respectfully requests CARB to consider that renewable fuels like ours do provide immediate, near- and long-term carbon reductions. As such, when evaluated as a companion strategy to electrification (per SB 100 and EO N-79-020), our products can be seen as a critical addition, buying precious time to achieve the overall, shared mission to reduce climate change.

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Prometheus reiterates its appreciation for CARB's undertaking this review of the LCFS and seeking comment on ways to update it. We would welcome additional discussion with the team working on these important issues. Thank you for your consideration.

Very truly yours,

Rob McGinnis, PhD  
Founder, CEO  
[prometheusfuels.com](http://prometheusfuels.com)

cc: Richard Corey, Executive Officer  
Rajinder Sahota, Industrial Strategies Division Chief  
LCFS Staff