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December 2, 2022

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

RE: California Air Resources Board's Low Carbon Fuel Standard (LCFS) Public Workshop: Concepts and Tools for Compliance Target Modeling. November 9, 2022 public workshop.

Dear Chair Randolph,

FuelCell Energy (FCE) submits this comment letter in response to the Low Carbon Fuel Standard (LCFS) Public Workshop: Concepts and Tools for Compliance Target Modeling, held on November 9, 2022. FCE looks forward to working with the California Air Resources Board (Board) as changes to the LCFS are contemplated.

FCE is a global leader in the stationary fuel cell market, providing affordable and clean onsite energy, 24/7 at sites including wastewater treatment plants, hospitals, universities, industrial facilities and serving utilities including at substations. FCE has been a participant for many years in California's clean energy programs, and has made meaningful contributions to assist in meeting California's goals with respect to emissions reductions, microgrids, and biofuels. FCE fuel cells are a clean, reliable "energy platform" that produce power and can deliver solutions with additional features such as biogas clean-up, heat recovery for combined heat and power (CHP) and vehicle quality hydrogen for zero-emissions fuel. FCE fuel cell platforms are currently deployed throughout the state of California, including at sites located within disadvantaged communities.

Because FCE fuel cell systems generate continuous power without combustion, eliminate criteria pollutant and air toxics emissions, and maintain the resiliency and reliability of local grid operation, these fuel cells could be a critical and preferred resource for California to address power shutoffs and grid unreliability both in front of and behind the meter. Additionally, given the disproportionate negative impact power shutoffs using diesel generators have on disadvantaged communities in this state, our fuel cells are a technology that directly mitigates those significant harms posed by increased criteria air pollution.

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COMMENTS:

In the presentation given during the public workshop, Slide 9 describes the LCFS as a "Critical Part of California's Climate Portfolio" and states that significant reductions in transportation emissions are needed to achieve state's air quality and climate goals. One of the key strategies the LCFS supports is providing long-term price signals needed to support the transition to zero-emission vehicles (ZEVs) and to decarbonize remaining liquid fuel demand. However, Slide 8 (Figure 1 below) of the presentation describes the "Growing credit generation from electricity, renewable diesel, and biomethane." The use of renewable diesel and biomethane for vehicles is not a zero-emission use and is not necessarily used in ZEVs. In fact, the combustion of biomethane and renewable diesel, which is the use represented in Slide 8, produces air emissions like NOx, SOx, and PM2.5 which the state needs to dramatically reduce to achieve the state's clean air goals. FuelCell Energy urges the Board to begin moving away from the combustion of low carbon fuels as an eligible end use pathway for renewable fuels.

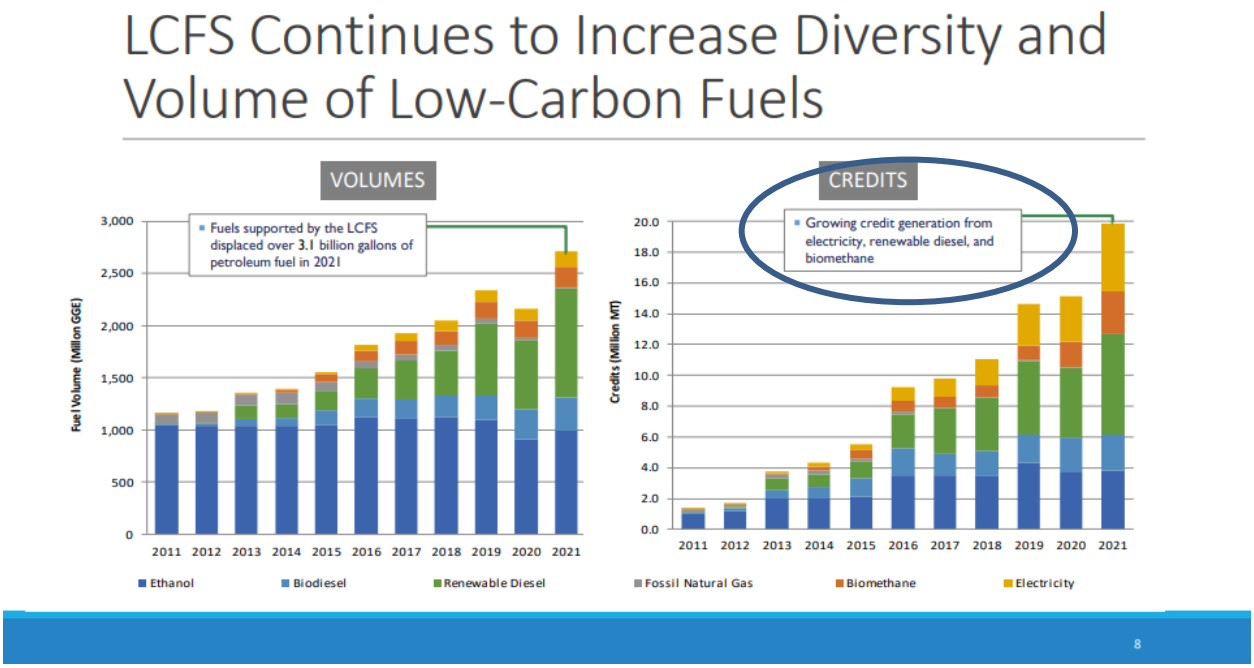

Figure 1: Slide 8, Public Workshop: Concepts and Tools for Compliance Target Modeling, California Air Resources Board, November 9, 2022

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On Slide 30 of the presentation in the Public Workshop, Board staff presented the "Biomethane Crediting Context." FCE agrees with the Board's stated goals:

- *Continue to incentivize deployment of methane reduction strategies to support meeting California's near-term SB 1383 targets and 2030 climate target*
- *Support Scoping Plan policy direction for long-term deployment/use of biomethane for hydrogen and expanding use of biomethane in non-transportation sectors*
- *Provide appropriate transition time to ensure alternative options are available – we understand investment, need to avoid stranded assets, and continued project operation depends on continued market and policy support.*

FCE believes that the Board should avoid phasing down the avoided methane crediting in the LCFS, and instead continue its current avoided methane crediting system as proposed under Alternative C. Biomethane and biogas feedstocks can be efficiently converted into electricity and hydrogen. The Board should incentivize through the crediting system biomethane-to-electricity and biomethane-to-hydrogen pathways to support the ZEV rules, as stated in the goals laid out by the Board. Fuel cells can convert biomethane into electricity and hydrogen without any combustion. This means that to make the electricity to charge ZEVs no particulate or toxic air emissions are created when a noncombustion technology is used. Currently, the Board has approved many Tier 2 pathways where burning biogas in turbines is deemed an acceptable method of generating electricity to charge ZEVs. While the carbon intensity (CI) score of the power is considered clean or negative, the overall impact is an inefficient conversion of biogas to electricity that increases localized air pollution. Additionally, renewable natural gas that is combusted in medium and heavy duty vehicles is also permissible under the LCFS and is also a source of localized pollution. When biogas and biomethane are converted using noncombustion fuel cells into electricity and hydrogen, the state both avoids unnecessary emissions and can make great strides in achieving both air quality and climate goals. As the state continues to tighten emissions standards, the Board should focus incentives on ensuring the electricity for ZEVs and the hydrogen for fuel cell vehicles are created without combustion technologies in order to truly strive for a zero-emission transportation sector.

FCE suggests that if the Board decides to add deliverability requirements to biomethane, the Board should provide a multi-year time period for deliverability requirements to be adopted to allow a smooth transition to the tracking and reporting of the biomethane delivery.

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FCE strongly encourages the Board to incentivize electricity and hydrogen generation using biomethane as an option in the Infrastructure Crediting provision. Given the organic waste diversion targets created by Senate Bill 1383, there will be an increased supply of biomethane available in the state needing a productive and beneficial way to use or dispose of it. Instead of limiting the methods of using biomethane without reconciling what to do with this increased supply, FCE suggests biomethane become a prioritized resource for the production of hydrogen and electricity through noncombustion technology. Facilities that gather or process biomethane should be allowed to become centers for hydrogen and electricity production onsite. Additionally, FCE encourages the Board to allow medium duty and heavy duty ZEV refueling stations to have the option to generate low CI electricity, low CI hydrogen, or a combination of both low CI electricity and low CI hydrogen onsite using tracked biomethane converted by technologies like fuel cells, which create no additional combustion related emissions. Distributing biomethane to fueling infrastructure for conversion into power or hydrogen will reduce emissions associated with trucking hydrogen or combusting the gas for electricity. Using existing gas infrastructure will reduce the cost of hydrogen and electricity to consumers and will allow the end ZEV fuel to be created closer to the point of consumption. If the Board does not take advantage of the growing biomethane supply to fuel ZEVs via the cleanest fuel production method possible, by fuel cells or other noncombustion technologies, this biogas and biomethane could be wasted or even worse, flared in a local community.

We thank you for the opportunity to submit these comments and appreciate your willingness to consider our recommendations.

Respectfully,

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