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FuelCell Energy, Inc Comments on 2023 Draft Integrated Energy Policy Report

Additional submitted attachment is included below.

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December 1, 2023

Docket No. 23-IEPR-01
California Energy Commission
715 P Street
Sacramento, CA 95814

RE: COMMENTS OF FUELCELL ENERGY, INC. ON 2023 DRAFT INTEGRATED ENERGY POLICY REPORT

Dear Energy Commission Staff,

FuelCell Energy (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 offer both molten carbonate and solid oxide fuel cells, which function as a clean, reliable "energy platform" that can support power generation and combined heat and power applications, CO2 capture, and hydrogen generation from a variety of fuels, including natural gas, renewable biogas, or hydrogen. Our fuel cells react with fuel electrochemically, without combusting the fuel, which avoids emissions produced by fuel combustion such as oxides of nitrogen, oxides of sulfur, and particulate emissions. FCE fuel cell platforms are currently deployed throughout the state of California, including at sites located within disadvantaged communities. In 2023, FuelCell Energy and Toyota Motor North America announced the completion of the world's first deployed "tri-gen" facility, using biofuel to produce hydrogen, electricity and water, at the Port of Long Beach.

FCE appreciates this opportunity to provide comments on Chapter 2 (Potential Growth of Clean and Renewable Hydrogen) of the Draft 2023 Integrated Energy Policy Report (IEPR). FCE looks forward to the planned multi-agency analysis and anticipated June 1, 2024 report pursuant to SB 1075 addressing what actions California can take to increase production, deployment, and use of low-carbon intensity hydrogen. FCE appreciates that this planned examination will include "a broad range of technical, market, and policy analyses that will support hydrogen production and use across many sectors of the economy, including those that are most difficult to decarbonize" and that it will support achievement of "other priorities, including air quality benefits and workforce development." (Draft IEPR at 61)

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FCE agrees with the direction the California Energy Commission (CEC) is heading in recognizing the usefulness of hydrogen for both electric and transportation decarbonization. In order for California to meet its climate goals, hydrogen must be part of the solution. The Draft IEPR correctly observes that widespread deployment of renewable hydrogen solutions is at an early stage, particularly for some emerging applications. But hydrogen technologies are available now and new approaches and applications are evolving rapidly to meet the needs and demands of utilities and commercial/industrial customers. California regulators can help accelerate this process and optimize the environment for investment in clean hydrogen and fuel cell technologies by creating and funding supportive programs, and by ensuring that the unique benefits of hydrogen technologies are identified and appropriately valued.

With respect to the latter point, FCE recommends that both lifecycle carbon intensity and lifecycle criteria air emissions always be included in the evaluation and ranking of decarbonization solutions. Given the science and well-known facts of the health impacts of criteria air pollution, especially in pollution burdened disadvantaged communities, the State's emission targets should include not only the reduction of CO2e emissions but also the significant reduction of criteria air pollutant emissions from all sources.

The CEC has the relevant historic energy data, and with the assistance of the California Air Resources Board (CARB), California Independent System Operator and California Public Utilities Commission, can benchmark the progress needed to reduce both CO2e and criteria pollutants in the specific time-of-day frames that are generating the highest emissions. Without identifying the need and measuring performance, it is difficult for industry to develop the solutions. For instance, hydrogen generated from excess wind and solar and negative carbon intensity biogas can be stored, then deployed in ultra-low air emission generation to assist in the time frames in which solar, wind, and batteries are not able to operate. That is, hydrogen can be complementary to these renewable and current technology energy storage technologies.

If the IEPR provides the guidance for targeted time of day carbon intensity in CO2e/MWh and targeted criteria air emissions, in lb/MWh (or other emissions intensity measurement), then progress to the goal can be tracked and documented. This approach has proven successful in the CARB Low Carbon Fuel Standard (LCFS) program for reducing the carbon intensity for transportation fuels. In general, these target periods are in the 4 pm to 7 am range, as these are the times each day where the CA energy mix is needed to support the energy that wind, solar and batteries may not be able to supply.

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Published performance based criteria would yield a technology-neutral market signal encouraging and enabling investment in hybrid solutions, incremental innovation and breakthroughs to help California meet its 100% clean energy goal, filling in where the current renewable mix has issues. The performance based criteria should be set to meet annual goals and can be driven down to adhere to the final future goal of 100% clean, again emphasizing that 100% clean includes significant reductions in criteria air pollution emissions and CO2e emissions. This step down approach allows for integration of these different solutions into the grid mix while maintaining energy reliability.

California has been successful in meeting its renewable energy goals, significantly decreasing carbon intensity (CI) in many sectors, and lowering carbon emissions in transportation fuels via CARB's LCFS program. The LFCS is a good model, as it is structured with step down annual targets that allow for a reliable transition, industry continuation and growth, while maintaining the required aggressive end goal setting. The LCFS has demonstrated that using published performance criteria provides consistent public policy direction, which then drives private investment and establishes a public-private partnership environment that benefits all.

To conclude, FCE is advocating that California build on successful performance based programs, such as LCFS, in development recommendations for encouraging and enabling development of hydrogen technologies and applications. Criteria air pollution reduction requirements must be included in establishing program requirements and ranking criteria, to help the pollution burdened disadvantaged communities to achieve and live the success of both clean air and clean energy. Without these performance based targets, existing polluting resources such as diesel generators will continue to be used as onsite generation sources, and delay the transition to cleaner energy which includes hydrogen.

We look forward to the forthcoming multi-agency Assembly Bill 1075 process, and are available to provide technical information and support as may be needed.

Sincerely,

/s/ *Paul Fukumoto*
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