NATIONAL FUEL CELL RESEARCH CENTER
Comments July 8, 2019 Public Workshop to Discuss the
Fuel Cell NEM GHG Emission Standard Calculation Methodology

July 22, 2019

The National Fuel Cell Research Center (NFCRC) submits these comments to the California Air Resources Board (CARB) on the materials presented at the July 8, 2019 public workshop to discuss the methodology for calculating the Fuel Cell Net Energy Metering (NEM) greenhouse gas (GHG) emission standards. The NFCRC supports both the recommended methodology and the acknowledgement that fuel cell systems are critical to meet California energy and environmental policy objectives.

I. Background Information

Enabling Legislation Direction:

Assembly Bill 1637 (Low, 2016), effective January 1, 2017, extended the CPUC's Fuel Cell Net Energy Metering (FC-NEM) program through 2021.[1] This legislation directed CARB (California Air Resources Board) to:

1. Establish annual GHG emission reduction standards for customer-generators participating in the Fuel Cell NEM program; and
2. Do so by accounting for both procurement and operation of the electrical grid, including renewable resources.

The relevant statute language is:

(b) (1) Not later than March 31, 2017, the State Air Resources Board, in consultation with the Energy Commission, shall establish a schedule of annual greenhouse gas emissions reduction standards for a fuel cell electrical generation resource for purposes of clause (iii) of subparagraph (A) of paragraph (3) of subdivision (a) and shall update the schedule every three years with applicable standards for each intervening year.

(2) The greenhouse gas emissions reduction standards shall ensure that each fuel cell electrical generation resource, for purposes of clause (iii) of subparagraph (A) of paragraph (3) of subdivision (a), reduces greenhouse gas emissions compared to the electrical grid resources, including renewable resources, that the fuel cell electrical generation resource displaces, accounting for both procurement and operation of the electrical grid.

AB 1637 directed CARB to establish a schedule of annual GHG emission standards for the Fuel Cell NEM program in consultation with the California Energy Commission (CEC). Over the past two years, CARB staff has held workshops to solicit stakeholder input on what metric(s) should be used to determine the fuel cell NEM GHG annual emission standards.

[1] California Assembly Bill No. 1637, Chapter 658, September 26, 2016.

II. Comments

A. The Proposed Fuel Cell NEM Emission Standards Presented by CARB is Data-Driven and Technically Validated.

The NFCRC supports the GHG Emission Standard for Fuel Cell NEM that was proposed by CARB in the July 8 workshop and meeting materials. To reiterate, the AB 1637 statute calls for fuel cell generators to reduce GHG emissions compared to grid-supplied electricity accounting for the actual resource mix used for grid electricity and specifically calls out renewables to be included in the comparison between the grid and the fuel cell generation. The statute calls for this comparison between customer-generation and the grid to be established and updated in annual standards. The methodology detailed in the discussion draft now uses third-party resources and reports from CARB, the California Energy Commission (CEC) and the California Independent System Operator (CAISO) to set and update the GHG standard. We strongly support the use of this public data to tie the base year to actual emission rates.

The current proposed standard follows the legislative intent of AB 1637, as described above, which calls for an annual standard to be applied to a project each year. Because eligibility is not automatic for the lifetime of a project, an annual view of marginal emissions is appropriate for this standard. By decreasing the annual fuel cell NEM standard every year based upon actual marginal emissions rates, the standard now accounts for the evolving dispatch profiles of load-following combined cycle and simple cycle power plants operating in concert with renewables for each year.

B. Fuel Cell NEM is Critical to Achieving the State's Goals of SB 100, AB 617 and Increased Resiliency.

As recognized at the July 8 workshop, finalizing this fuel cell NEM standard is important to enabling the further deployment of fuel cell systems. Because of their non-combustion operation and high capacity factor, fuel cell systems decrease GHG emissions more than the grid and other renewable resources. In order to achieve the objectives in SB 100, California needs multiple resources that can balance intermittent renewables while also reducing GHG emissions.

As non-combustion distributed energy resources, fuel cell systems also greatly improve air quality in local communities and are critical to meet the goals of AB 617. Consistent with CARB's objective in the workshop presentation, fuel cells displace traditional emergency backup generators that emit criteria air pollutants and GHG, including diesel generators. The generation of always-on, zero criteria pollutant emission power is especially critical given that the majority of California currently suffers from poor air quality and faces major challenges in achieving clean air for the many citizens that live and work within these areas, including in economically disadvantaged communities that are often disproportionately burdened by air pollution.

The establishment of California policy needed to address resiliency, public safety power shutoffs and wildfire mitigation is accelerating, and fuel cell systems are uniquely designed to help meet these challenges. Non-combustion fuel cells address multiple resiliency needs related to electricity production and backup power. These distributed onsite resources can be used in microgrids, at the utility-scale or for both onsite continuous and backup power in the event of a grid outage or de-energization event. The finalization of the fuel cell NEM standard, and implementation of fuel cell NEM at the CPUC is critical to proceed quickly with projects providing:

- Baseload power in communities with constrained transmission and distribution, including disadvantaged communities or rural locations;
- Continuous and long-duration backup (longer than 48 hours) generation for all sites, including critical services such as hospitals, telecommunications, gas stations, and grocery stores;
- Underground fuel lines that eliminate the vulnerability to weather and risk of sparks from traditional poles and wires infrastructure;
- Time to build, uptime, and recovery time that are all faster than the electric utility grid network can achieve;
- Leading power density: fuel cells produce the largest quantity of zero emissions electricity in proportion to their equipment footprint compared to any technology currently on the market.

III. Conclusion

Establishing an accurate GHG standard for the net energy metering of fuel cell systems in the near-term is critically important for a clean and resilient grid today, and to accelerate the improvement of air quality and reduction of carbon emissions in California. The NFCRC appreciates CARB's recognition of this important function of fuel cells, and we appreciate the opportunity to comment on the proposed methodology for a Fuel Cell Net Metering GHG Standard to enable meeting these objectives. We look forward to finalizing the standard in the coming months.

Sincerely,

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