



December 22, 2017

Dave Mehl
California Air Resources Board
1001 I Street
Sacramento, CA 95814
VIA Online submission

Dear Dave,

Bloom Energy (Bloom) thanks ARB staff for their work in developing the greenhouse gas (GHG) emissions reduction standard for the fuel cell net energy metering (FC NEM) tariff. We appreciate the reliance on hourly marginal emissions factors that reflect grid operations in a granular way and the inclusion of GHGs beyond CO₂ in the standard. Below we request two adjustments to the current proposal and more information on how non-CO₂ GHGs are incorporated.

Limit to a three-year outlook

Bloom requests that the proposed regulation be amended to include only GHG emissions reduction standards for three years, as stipulated in statute, rather than providing five years of standards through 2021. The statute that established the process for setting the GHG reduction standards that fuel cells must meet in order to interconnect under the fuel cell net energy metering tariff requires that *"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 ... and shall update the schedule every three years with applicable standards for each intervening year."*¹ Additionally, statute states that *"[a] fuel cell customer-generator shall be eligible for the tariff established pursuant to this section only for the operating life of the eligible fuel cell electrical generating facility."*²

This means that, while the tariff availability to newly installed projects currently expires on December 31, 2021, projects already on the tariff will remain on the tariff for their full operating lifetime. Bloom's projects operate for at least 10 years, therefore standards must be set beyond 2021 (in three year increments) in order to provide clear direction on continued tariff eligibility. Having regular and frequent updates ensures that fuel cells will continue to reduce GHGs as the grid changes and also allows the ARB to provide accurate values based on near term information, rather than heavily relying on long term forecasts in a rapidly changing energy market.

Remove Renewable Portfolio Standard (RPS) adjustment

Bloom expressly disagrees with the use of an adjustment to the marginal generation resource assessment that scales with the RPS because it makes the

¹ Public Utilities Code 2827.10 (b) (1)

² Public Utilities Code 2827.10 (g)

GHG emissions reduction standard more speculative and less accurate and is inconsistent with the statutory direction to set annual standards. The recently published methodology in the avoided cost calculator incorporates an RPS adjustment in what is labeled as a “Long Run Marginal Emissions Factor”. The FC NEM tariff requires an annual standard that a project must meet each year to ensure that project continues to reduce GHGs every year as grid operations change and California’s policies drive further adoption of low carbon energy sources. Because this standard will be applied to each project each year and is updated over the lifetime of a project, speculation about the grid emissions over the full project lifetime is not needed. The process of regular and frequent updates will ensure that the effects of the RPS will be taken into account in each update. Because of the very nature of an annual standard, taking a long run view of emissions effects is incorrect in this case and this RPS adjustment should not be included. In addition, incorporating current information into the GHG standards is another key benefit of the frequent short run updates, and it should be a priority to closely examine assumptions for accuracy as the standards are updated every three years rather than relying on long term assumptions.

The RPS adjustment currently included in the marginal emissions factor calculation in the avoided cost calculator is not accurate for calculating either a short-run or long-run marginal emissions factor. The documentation accompanying the avoided cost calculator states that “when a distributed resource saves a kWh of electricity, the utility consequently procures 0.5 kWh less renewable energy (under a 50% RPS).”³ This is not only an overly simplistic view of year-to-year RPS compliance, but also contradicts available information. The PUC recently authorized the investor-owned utilities (IOUs) to not issue solicitations for RPS resources. The PUC’s Decision clearly outlines that the IOUs “forecast exceeding RPS requirements through at least the 2017-2020 compliance period”⁴ and that “Based on PG&E’s, SCE’s, and SDG&E’s current stated RPS compliance positions, it is reasonable to approve of PG&E’s, SCE’s, and SDG&E’s requests not to hold 2017 RPS solicitations.”⁵ Therefore it is incorrect to assume that future projects in IOU territories under the FC NEM tariff would drive reduced procurement of RPS resources.

Further, as the California Energy Commission observed in a March 2016 Staff Report, “Future construction of renewables may not just be driven by legislative mandate, but also by cost competition. In this environment, generation procurement and the mix of grid resources will change dramatically and alter the process of estimating grid displacement”.⁶ This likelihood is further demonstrated by market prices for wholesale power purchases and the price of renewable energy purchases. Intercontinental Exchange (ICE) data for NP-15 CAISO future prices indicates the average day-ahead price for 2018-2022 to range between \$35 and \$40/MWh⁷ while a recent NREL report indicates utility scale solar levelized cost of

³ Avoided Costs 2017 Interim Update, September 11, 2017, page 39.

⁴ D.17-12-007, Finding of Fact #2, page 65.

⁵ D.17-12-007, Conclusion of Law #2, page 67.

⁶ “Estimating Near-Term Grid Operation and Marginal Resource Efficiency for California Electricity,” California Energy Commission Staff Report, March 2016, CEC-200-2016-003, page 4.

⁷ Derived from Intercontinental Exchange daily settlement prices for CAISO NP-15 Day-Ahead Peak and Off-Peak Fixed Price Future contracts on November 8, 2017 through November 30, 2017. See

energy to range from \$30 to \$40/MWh in 2017 with expected reductions into the future.⁸

In addition, in its Integrated Resource Planning process, the PUC has undertaken a study of future energy portfolios in the context of ensuring the state meets its GHG reduction goals. Current modeling indicates that energy procurement to meet proscribed GHG reduction targets results in renewable procurement percentages within the State's energy portfolio that are higher than the RPS mandate, while the natural gas generation would continue to contribute a significant portion of State's energy portfolio.⁹ The evolving market dynamics in California suggest that it is possible, or even likely, that future renewable procurement will be driven through economic competition and/or efforts to meet GHG reduction goals rather than primarily through the current RPS mandate. Therefore, because ARB need only publish standards for three years and does not need to speculate what will happen beyond 2019, and because future procurement decisions will be impacted by factors beyond RPS requirements, an RPS adjustment is not needed nor warranted in the annual emissions factors for the FC NEM tariff.

Provide CO₂e methodology

Bloom's understanding is that non-CO₂ GHGs are included in the proposed GHG standards, as is appropriate based on statutory direction to develop a GHG reduction standard rather than a CO₂ reduction standard. We request detail as to how these are calculated and incorporated into the proposed GHG standards to ensure these benefits are accurately incorporated into the methodology.

Bloom thanks the Board for the opportunity to submit these comments in response to the second FC NEM workshop and will continue to engage and provide resources that will lead to the development of an accurate, data-driven GHG standard for the FC NEM tariff to ensure that the GHG-reducing contributions of fuel cell installations in California continue to be accurately accounted for as they help the state meet its GHG reduction goals.

Respectfully,



Erin Grizard
Senior Director, Regulatory and Government Affairs

<https://www.theice.com/products/6590362/CAISO-NP-15-Day-Ahead-Peak-Fixed-Price-Future> and
<https://www.theice.com/products/6590423/CAISO-NP-15-Day-Ahead-Off-Peak-Fixed-Price-Future>
for product descriptions.

⁸ U.S. Solar Photovoltaic System Cost Benchmark: Q1 2017, page 43,
<https://www.nrel.gov/docs/fy17osti/68925.pdf>

⁹ Proposed Reference System Plan, CPUC Energy Division, September 18, 2017, slide 58.
http://cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/UtilitiesIndustries/Energy/Programs/ElectPowerProcurementGeneration/irp/AttachmentA.CPUC_IRP_Proposed_Ref_System_Plan_2017_09_18.pdf