Bloomenergy™

July 29, 2019

Keith Roderic
Industrial Strategies Division
California Air Resources Board
1001 “I” Street
Sacramento, CA 95814

Dear Mr. Roderic,

Thank you for the opportunity to comment on the California Air Resource Board’s (CARB) proposed methodology to determine the greenhouse gas (GHG) emissions standard for fuel cell net metering.

Bloom would like to address a few key points to clarify some points other parties raised in their comments:

- Program comparison: The Self Generation Incentive Program (SGIP) is fundamentally different from FCNEM, and consequently it not an appropriate reference. Specifically:
    - SGIP is an incentive program; FCNEM is a tariff.
    - SGIP is available to all technologies, including intermittent resources that are not baseload generators and consequently do not displace dirtier marginal generators (e.g. the combined and simple cycle natural gas plants).
    - The SGIP number is set once, cemented in the program handbook, and does not have a regular update schedule. In contrast, as this FCNEM methodology clearly states, ARB will update it every three years to reflect changing grid and market conditions. The “living” standard that ARB has developed is innovative and reflective of operations, thus making it more accurate and superior to a “fixed time” SGIP model.
    - By 2020, SGIP is only available to fuel cells operating on 100% renewable fuel; in contrast, the FCNEM GHG standard is being developed for natural gas fired generators.

- RPS accounting: The methodology clearly accounts for RPS procurement by using CAISO data to accurately track when renewables are on the margin. Bloom commends ARB for evaluating multiple proposals and eventually selecting a technical, data-driven approach to set the standard. Using 5 minute curtailment data is not appropriate for this purpose, for a variety of reasons:

    - CAISO includes a proviso to anyone seeking to use this data: "These files contain raw data, and while the ISO has reviewed for accuracy, the data is provided as is, and is not considered operational or settlement quality data [emphasis added]." AB 1637 requires ARB to set the standard based upon operation of the grid; as such, this is not an appropriately robust or vetted data set.

    - Doing so may capture curtailments caused by forecasting error. It is well-established that actual supply or demand varies significantly from forecasted for the day-ahead market, and as such, this data set reflects instances where the weather was hotter or colder than expected—not marginal resources displacement caused by behind-the-meter fuel cells.

    - In addition, it may capture curtailments that occur due to an inadequacy of integration resources (e.g. lack of ability to accommodate ramps in renewable generation) or unexpected transmission constraints that prevent delivery of renewable energy—again, curtailments due to congestion and not caused by behind-the-meter fuel cells.

    - Even if ARB still chose to use this dataset, it is not clear how the joint environmental groups reached the conclusion that "California Independent System Operator ("CAISO") data indicates over 100,000 5-minute intervals, or approximately 1,750 hours of annual renewable curtailment."[1] The 2017 CAISO annual data show 26,960 curtailment intervals; the 2018 data show 32,431 intervals.[2]

- Methane leaks: As the ARB methodology clearly states, fuel cells displace combined and simple cycle natural gas plants, which also experience methane leaks. As such, this issue is already accounted for correctly; suggestions to adjust the number based upon methane leaks are baseless.

- Diesel displacement: As power shutoffs and grid outages become more prominent due to climate change, diesel generators will run more frequently. Indeed, demand for diesel

[1] https://www.arb.ca.gov/lists/com-attach/5-fuelcellnemmethod-ws-BWtSJl04BzcEXQBz.pdf
[2] http://www.caiso.com/informed/Pages/ManagingOversupply.aspx

generators has spiked 1,400% in the wake of the new policy to proactively depower electricity lines (Public Safety Power Shutoffs).[3] Given that, according to the California Air Resources Board, operating an uncontrolled 1MW diesel engine for only 250 hours per year would result in a 50% increase in cancer risk to residents within one city block, this technology is fundamental to California's public health and clean energy goals.[4]

Fuel cells are critical to reducing GHGs and criteria air pollutants, displacing dirty diesel generators, and complying with California legislative mandates such as AB 617. Bloom reiterates our appreciation and support for the rigorous, data-driven methodology ARB has laid out for the FCNEM GHG NEM Standard to accomplish these goals.

Sincerely,

Erin Grizard

[3] https://www.sfchronicle.com/business/article/Demand-for-generators-lights-up-as-PG-E-power-14054242.php#
[4] http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.441.1007&rep=rep1&type=pdf