December 20, 2017

Via online filing

Dave Mehl
Manager, Energy Section
California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

Subject: Comments on Greenhouse Gas Emission Standards for the Fuel Cell Net Energy Metering Program

Dear Mr. Mehl:

Sierra Club and Earthjustice write to express our serious concerns with ARB's proposed greenhouse gas ("GHG") emissions standard for Fuel Cell Net Energy Metering ("FC-NEM"). Assembly Bill ("AB") 1637 tasked ARB with establishing a GHG emissions standard that would ensure GHG reductions from qualifying fuel cells. The bill analysis for AB 1637 states that the new FC-NEM GHG standard would improve on the existing GHG standard in the Self-Generation Incentive Program ("SGIP") and "is expected to be lower than the existing [SGIP] standard at the outset."[1] Yet in contravention of AB 1637's legislative intent, the FC-NEM GHG standard proposed by ARB is significantly higher than the SGIP standard. The 2017 first-year emissions rate for SGIP-eligible fuel cells is 332 kg CO_2/MWh; for FC-NEM, by contrast, the proposed limit is only 375 kg CO_2/MWh.[2] Additionally, all SGIP resources consuming natural gas must use a minimum of 25 percent biomethane in 2018, increasing rapidly to 50 percent by 2019 and to 100 percent by 2020.[3] ARB's proposed standard contains no renewable natural gas requirements.

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[1] Bill Analysis Before the Assembly Committee on Natural Resources, p. 2 (Aug. 30, 2016), available at https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=201520160AB1637.

[2] *Compare* Decision ("D.")15-11-027, Decision Revising the Greenhouse Gas Emission Factor to Determine Eligibility to Participate in the Self-Generation Incentive Program Pursuant to Public Utilities Code Section 379.6(b)(2) as Amended by Senate Bill 861, Appendix B (Nov. 23, 2015), available at http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M156/K044/156044151.PDF *with* ARB Draft Regulation Order § 95411 (Nov. 15, 2017), available at https://arb.ca.gov/energy/nem/draft_regulation_order_11-28-17.pdf.

[3] D.16-06-055, Decision Revising the Self-Generation Incentive Program Pursuant to Senate Bill 861, Assembly Bill 1478, and Implementing Other Changes, p. 21 (June 23, 2016), available at http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M163/K928/163928075.PDF.

Given that the California Public Utilities Commission ("CPUC") had a similar mandate to ensure SGIP resources would "achieve reductions in emissions of greenhouse gases,"[4] there is no legitimate justification for ARB to propose a substantially more permissive GHG standard for FC-NEM. Indeed, by providing retail rates for energy production from natural gas, ARB estimates that program incentives will amount to approximately $200,000 per megawatt, or $100 million for FC-NEM as a whole.[5] In exchange for this significant subsidy, eligible projects should provide meaningful environmental value and facilitate achievement of California's aggressive GHG reduction requirements. Unfortunately, as currently proposed, the FC-NEM GHG standard amounts to a counterproductive subsidization of fossil fuels that will increase GHG pollution.

To ensure the FC-NEM program achieves meaningful GHG reductions, Sierra Club and Earthjustice recommend ARB make the following changes to the proposed GHG standard:

1) Require Annual Emissions Verification and Testing to Maintain Eligibility for FC-NEM.

Verification and testing are critical to the integrity of the FC-NEM program. The electrical conversion efficiency of fuel cells degrades over time. Annual verification and re-certification are fundamental to ensuring that resources that remain in the program continue to provide GHG reductions as the grid becomes increasingly decarbonized. Accordingly, the GHG standard should be revised to include a requirement that ARB will annually verify the emissions rate of fuel cells that wish to remain eligible for FC-NEM to ensure the resource qualifies for the upcoming year's emission standard. ARB can then communicate the results of emissions testing to the CPUC to ensure resources that no longer meet the GHG standard do not receive retail rate payments for exported energy.

2) Account for Actual Renewable Penetration in Setting GHG Threshold.

The proposed GHG standard was derived from the E3 Avoided Cost Model. The model assumes that renewable penetration increases in accordance with minimum Renewables Portfolio Standard ("RPS") requirements, with a 27 percent RPS assumed in 2017, a 29 percent RPS in 2018, a 31 percent RPS in 2019, a 33 percent RPS in 2020, and a 35 percent RPS in 2021.[6] The reality is much different. California's Investor-Owned Utilities ("IOUs") are well ahead of minimum RPS procurement requirements. The CPUC now forecasts that average actual IOU RPS compliance will be 38 percent in 2017, 42 percent in 2018, 47 percent in 2019 and 50 percent in 2020.[7]

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[4] Cal. Pub. Util. Code § 379.6(b)(1).
[5] ARB Presentation, *Fuel Cell Net Energy Metering GHG Emissions Standards,* slide 3 ("Fuel Cell NEM Background") (Nov. 28, 2017), available at https://arb.ca.gov/energy/nem/fc_nem_presentation_11-28-17.pdf.
[6] 2017 Avoided Cost Model, Emissions Tab, Row 36, available at http://www.cpuc.ca.gov/General.aspx?id=5267.
[7] CPUC RPS Homepage, available at http://www.cpuc.ca.gov/RPS_Homepage/.

The failure to account for actual RPS deployment violates the requirements of the FC-NEM statute. California Public Utilities Code Section 2827.10(b)(2) provides that "[t]he greenhouse gas emissions reduction standards shall ensure that each fuel cell electrical generation resource … 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."[8] In neglecting to account for actual IOU procurement of renewable resources, the proposed GHG standard is inconsistent with this requirement. Because the proposed threshold is premised on a much lower level of RPS procurement than is actually deployed, application of the current standard will result in significant increases in GHG emissions. The proposed GHG standard for FC-NEM must be revised to account for the higher existing and forecast percentages of IOU RPS procurement to ensure FC-NEM resources actually result in GHG emissions reductions.

3) Account for Renewable Curtailment in Setting GHG Threshold.

FC-NEM would facilitate the addition of 500 MW of baseload fossil fuel resources onto the grid. Yet the E3 avoided cost calculator used to derive the GHG eligibility threshold assumes that "natural gas is the marginal fuel in all hours."[9] This assumption improperly ignores the reality of increases in renewable curtailment, curtailment that baseload resources like fuel cells would exacerbate. The California Independent System Operator ("CAISO") reported in May 2017 that renewable curtailment rose from 187,000 MWh in 2015 to over 308,000 MWh in 2016 and that, "during certain times of the year, it's not unusual to curtail 20 to 30 percent of solar capacity."[10] Reliance on a model that ignores renewable curtailment serves to artificially inflate the proposed GHG standard. This standard must be revised downward to account for renewable curtailment that is both currently projected to occur, and that would be exacerbated by the potential addition of 500 MW of baseload fuel cells.

4) Require FC-NEM Resources to Increasingly Utilize Renewable Natural Gas.

While legislation requiring the CPUC to update its GHG eligibility threshold for SGIP did not require fuel cells to utilize renewable natural gas, the CPUC nonetheless phased-in a renewable natural gas requirement because "California's long term GHG reduction goals require actions that will push natural gas fueled technologies further in their GHG reductions. The need to support market transformation of zero emission fuels argues for adopting a zero emission fuel blending requirement in SGIP."[11] The SGIP biogas requirements phase-in renewable natural gas as follows:

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[8] Cal. Pub. Util. Code § 2827.10(b)(2).
[9] E3 Avoided Costs 2017 Interim Update, p. 34 (Sept. 11, 2017), available at http://www.cpuc.ca.gov/General.aspx?id=5267 (2017 Avoided Cost Interim Update Documentation).
[10] CAISO, Fast Facts, Impacts of Renewable Energy on Grid Operations, available at https://www.caiso.com/Documents/CurtailmentFastFacts.pdf.
[11] D.16-06-055, p. 20 (June 23, 2016).
[12] D. 16-06-055, p. 21 (June 23, 2016).

Table 3: Biogas Fuel Blending Requirement

Program Application Year	% Biogas Requirement
2016	0%
2017	10%
2018	25%
2019	50%
2020	100%

ARB should apply the same requirements here. Indeed, the need for renewable natural gas requirements applies with greater force today than when the CPUC issued its SGIP Decision. Since then, California passed Senate Bill ("SB") 32, which set the aggressive requirement of reducing GHG pollution to 40 percent below 1990 levels by 2030.[13] ARB's recently adopted 2017 Climate Change Scoping Plan also recognized that "[r]educing demand for natural gas, and moving toward renewable natural gas, will help California achieve its 2030 climate target."[14] Yet by failing to require renewable gas, the proposed GHG standard would *increase* natural gas demand by incentivizing deployment of 500 MW of natural gas-reliant distributed resources. Adding renewable natural gas requirements similar to the CPUC's SGIP is needed to ensure FC-NEM reduces the demand for fossil gas and thereby facilitates achievement of California's aggressive 2030 GHG reduction requirement.

Thank you for your consideration of these comments. We look forward to working with ARB to develop a more robust GHG emissions standard.

Respectfully,

/s/ *Alison Seel*

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[13] SB 32, The California Global Warming Solutions Act of 2006: emissions limit (Sept. 08, 2016).
[14] ARB, California's 2017 Climate Change Scoping Plan, p. ES-11 (Nov. 2017).