Pacific Gas and Electric Company

Linus Farias
Climate Policy Principal
State Agency Relations

77 Beale Street, Rm 2977B
San Francisco, CA 94105
(415) 973-1415
ljfb@pge.com

September 5, 2017

Mr. Samuel Wade
Branch Chief, Transportation Fuels Branch
Industrial Strategies Division
California Air Resources Board
1001 I Street
Sacramento, California 95812

RE: Comments on Low Carbon Fuel Standard 2018 Amendments: Pre-Rulemaking Concept Paper (LCFS Concept Paper), dated July 24, 2017

Dear Mr. Wade:

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide comments on the Air Resources Board's (ARB) Low Carbon Fuel Standard (LCFS) 2018 Amendments – Pre-Rulemaking Concept Paper (LCFS Concept Paper), dated July 24, 2017, presented during the August 7, 2017 workgroup meeting. We agree that low-carbon fuels will play a key role in achieving the state's 2030 greenhouse gas emissions reduction targets and believe that an effective program to promote the use of conventional and renewable natural gas (RNG) as well as electricity is critical to the success of the LCFS program.

As a provider of natural gas and electricity to almost 15 million Californians, PG&E is well suited to meet the needs of transportation customers who use either electricity or conventional and renewable natural gas as a transportation fuel. Below, we offer our informal comments on the LCFS Concept Paper for your consideration.

1. Establishing Appropriate Average Carbon Intensity Requirements Through 2030: PG&E recommends that staff undertake further examination of potential 2030 carbon intensity reduction targets under the LCFS. We are concerned that the proposed 18% reduction target is too aggressive and the underlying feedstock and biofuel growth assumptions included in the Biofuel Supply Module (BSM) are overly optimistic.[1] In

[1] For example, the BSM assumes a future annual growth rate for some biofuels of 41%, based on the average growth rate of biodiesel and ethanol during periods that had particularly favorable conditions, such as tax and production incentives. An "s-curve" concept should be applied to the growth of biofuel feedstocks and biofuels. It is unrealistic to assume that aggressive annual growth rates can be replicated over the long term.

addition to this target, an LCFS credit price much higher than $80 would likely be needed to drive the low carbon fuel uptake necessary to meet the 18% carbon intensity target in 2030. PG&E suggests conducting additional analysis of more sustainable post-2020 options for the LCFS, such as a 2030 carbon intensity reduction target in the range of 15%.

2. Remove Opt-in Status of Fossil Compressed Natural Gas (CNG): As a CNG fuel provider, PG&E recognizes ARB's desire to remove the opt-in status of this fuel and recommends that ARB build regulatory flexibility for providers with a limited number of fuel customers as robust programs are built to support mandatory reporting as a Regulated Party.

3. Section 3 - Addition of Third-Party Verification: PG&E supports a verification program that will build integrity into the LCFS credit market. We are interested to learn more about the LCFS certification requirements and process for verifiers and when the verification will become effective. We look forward to ARB providing further details on the content of the Annual Fuel Pathway Reports.

4. Section 4 - Pathway Application and Carbon Intensity (CI) Determination: PG&E supports ARB's proposed changes to the Lookup Table and particularly the proposal for an annual update of the California grid electricity pathway that recognizes the decarbonization of the statewide grid. Although PG&E's electricity mix is likely cleaner than other regulated parties, we agree that in the near-term, establishing a single statewide CI value is preferable to sub-grid or individual source-type CIs and will support sufficient incentives for statewide adoption of electric vehicles.

5. Section 5 - Fuel Amount Reporting Improvements: Subsection b - Natural Gas Provision of Section 5 proposes "…a time limit for the book and claim accounting system for RNG use as a feedstock whereby RNG injected to the pipeline in one quarter would have to be attached to natural gas sold as a vehicle fuel in California as RNG by the end of the following quarter. After that period is over, any unmatched RNG would expire for the purposes of LCFS reporting."

   PG&E proposes that ARB extend the time limit to two quarters or consider a mechanism for reporters to reconcile errors beyond one quarter as routine reconciliation may be required from multiple suppliers and will allow sufficient time to reconcile data aggregation issues such as human error from manual meter reading.

   Subsection b -Natural Gas Provision" of Section 5 also proposes, "In addition to the amount of CNG fuel dispensed at the fueling facility per FPC [fuel pathway code] reported quarterly, staff is suggesting that the total amount of CNG dispensed (both fossil and renewable natural gas) at the fueling facility per quarter also be reported, as measured by the utility meter and reported on the utility bills."

PG&E currently reports the CNG dispensed at the fueling station in one FPC. RNG that is introduced into the system will not be parsed by individual fueling stations and although the aggregate of conventional and renewable natural gas can be obtained, apportioning that to individual locations will not improve accuracy. We propose that ARB allow reporting of conventional and renewable CNG in aggregate.

In Subsection b - Natural Gas Provision of Section 5, staff proposes that CNG and LNG stations amend the regulation "to clarify what document reporting parties should provide to substantiate use of the more advantageous EER of 1." Staff also provides an example of a 15 gasoline gallon equivalent (GGE) threshold for light/medium-duty spark-ignition engine vehicles for which a reporter could use an Energy Efficiency Ratio (EER) of 1. We support this approach, but would like to reiterate prior comments that recommended that ARB use a 30 GGE cutoff for light/medium-duty vehicles instead of 15 GGE.

Regarding the use of the appropriate EER for vehicles being filled at public CNG and LNG stations, PG&E supports the use of a vehicle class-specific EER for reporting fuel supplied to vehicles of different classes. PG&E proposed that ARB use a 30 GGE as a cutoff for light duty vehicles/medium duty vehicles and heavy duty vehicles, based on an ICF International, Inc. threshold assessment conducted in 2014 and illustrated in the table below:

Duty	**Class**	**Truck / Model**	**Fuel Tank Size (GGE)**
Medium Duty (8,501 to 14,000 lbs GVWR)	3	F-250	17—23
		F-350	17—23
Heavy Duty (≥ 14,001 lbs GVWR)	4	Isuzu NPR series	30—45
	5	Navistar, Terristar series	40
	6	Freightliner, M2 series	45+
	7	Freightliner, M2 series	50+
	8	Freightliner, Cascadia series	50+

Regarding the electricity provisions, PG&E supports ARB's desire to develop more specific EER values for various vehicle classes as a means of avoiding stranded credits. As such, ARB should consider offering credits for electric vehicles such as electric motorcycles and

off-road vehicles and electricity used by transportation refrigeration units (TRUs). The latter would serve as an incentive to reduce the CI of fossil fuels from on-board generators.

Within the past year, the California Public Utilities Commission has approved Investor Owned Utilities (IOU) proposal to implement a LCFS credit sales revenue return program, where IOUs return all generated revenues to their residential customers. This nascent program has served as a benefit to all EV customers to date. Utilities serve a unique role as an agnostic provider of credits to all EV owners. This role will be important as the number of EV models increase and will support California's goal of 1.5 million ZEVs by 2025. We are concerned that the proposal to subtract the EV charging for residential vehicles from other parties will reduce the total quantity of revenues returned to customers, and substantially increase the administrative cost and complexity of the program.

6. Section 6 – Enhancement to Credit Transaction Reporting: PG&E supports accurate and timely reporting of credit transactions, but we would like to ensure that adequate time is given to allow entities to complete the transactions accurately and expeditiously, particularly if additional classifications may be required. Currently, the transactions take approximately 10 business days to ensure appropriate transaction validations and approvals are performed. We recommend that entities be permitted to retain the 10-day period to report each credit transaction in the LRT-CBTS.

7. Appendix A - Development of Illustrative Compliance Scenarios and Evaluation of Potential Compliance Curves: Regarding feedstock supply projections, PG&E recommends ARB consider additional sources of information if it hasn't reviewed them already, such as:
    - Renewable Energy Resource: Technology and Economic Assessments, CEC Publication Number CEC-500-2017-007, January 2017
    - Alternative Fuels Data Center, US DOE
    - Biogas Opportunities Roadmap Progress Report, USDA, EPA and DOE, 2015
    - An Overview of the Feedstock Capacity, Economics, and GHG Emission Reduction Benefits of RNG as a Low Carbon Fuel, National Petroleum Council, March 2012
    - The Potential for Renewable Natural Gas: Biogas Derived from Biomass Feedstocks and Upgraded to Pipeline Quality, American Gas Foundation, September 2011

Regarding the Biofuel Supply Module and the California Biofuel Allocation Model, PG&E appreciates ARB's commitment to improving these models and supports ARB's efforts to expand its modeling capabilities. PG&E encourages ARB to take a conservative approach with its assumptions to moderate the amount of biomass and biomass-derived fuels that are deliverable to California, and recommends ARB assume that a smaller percentage of these resources will be available to California over time as markets in other geographic areas develop and expand. With regard to the Scenario Calculator, PG&E requests that users be able to specify renewable natural gas volume along with the other resources listed.

Finally, given the potential challenge of meeting a sustainable LCFS carbon intensity reduction target for 2030,[2] PG&E encourages ARB to explore additional credit generation options to the fullest extent.

We support the LCFS program and look forward to working with you to develop regulatory language that advances the LCFS program.

Sincerely,

/s/

Linus Farias
Climate & Transportation Policy Principal
Pacific Gas and Electric Company

Cc: Jim Aguila, ARB
Renee Lawver, ARB
Mark Krausse, PG&E

[2] ICF, Post-2020 Carbon Constraints: Modeling LCFS and Cap-and-Trade, Feb. 16, 2017, https://www.icf.com/resources/reports-and-research/2017/post-2020-carbon