



**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

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Order Instituting Rulemaking to Address Utility
Cost and Revenue Issues Associated with
Greenhouse Gas Emissions.

Rulemaking 11-03-012
(Filed March 24, 2011)

**PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E)
FILING OF INFORMATION IN RESPONSE TO
ADMINISTRATIVE LAW JUDGE'S RULING**

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Dated: May 8, 2012

Attorneys for
PACIFIC GAS AND ELECTRIC COMPANY

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Pacific Gas and Electric Company (PG&E) hereby provides its information on Low Carbon Fuel Standard (LCFS) credit issues in response to the Administrative Law Judge's Ruling (ALJ Ruling) dated May 1, 2012 in this proceeding. The information is provided in Attachment A to this pleading.

Respectfully Submitted,
CHRISTOPHER J. WARNER

By: _____ /s/

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ATTACHMENT A

1) What procedures does your utility use to identify customers that own electric or other alternative fuel vehicles?

PG&E currently relies on three primary sources of notification to identify electric vehicle (EV) customers in its service territory:

- *Original Equipment Manufacturers (OEMs)*: General Motors and Nissan, the first two major OEMs to launch their EV models in California have shared notification data with PG&E. GM's regional manager for California prepares and communicates notification data to PG&E on a biweekly basis. Nissan uses a different process and shares data through a third-party analytics firm, Oceanus, on a quarterly basis.
- *ECOtality*: Provides PG&E weekly reports on its LV2 charger installations.
- *Individual Customer Notification*: Individual customers also contact PG&E. Customers have the opportunity to contact PG&E by phone or via its on-line EV reporting tool to schedule a service appointment or discuss rate options for their EVs.

PG&E does not have a method to identify general public customers who own natural gas vehicles (NGVs).

2) How does your utility track data on customers that own alternative fuel vehicles? Is this information kept in utility computer systems? If so, please describe what relevant data is collected and how it is associated with the customer's account.

PG&E currently updates its billing systems to identify customers that have had service planning checks when they purchase an EV and for EV customers who choose service under PG&E's E-9 EV rate.

3) How, if at all, does your utility ensure that information on customers' electric and other alternative fuel vehicle ownership remains current?

In this early phase of EV deployment, PG&E does not track electric and alternative vehicle ownership over time except to the extent the customer requires service planning support or chooses an EV rate. Currently, the IOUs are investigating how the California Department of Motor Vehicles (DMV) may enable EV ownership tracking over the lifetime of the vehicle consistent with DMV privacy requirements.

4) How many customers in your service territory have you identified that own electric vehicles? Other alternative fuel vehicles? Please break this data down by the type of fuel used, if known.

As of March 31st, 2012, PG&E estimated that there were 3,096 EVs owned or operated by customers in its service territory. PG&E does not track general public NGVs.

5) How many customers in your service territory are on electric vehicle tariffs? Please report data for each relevant tariff separately, and summarize the terms of each tariff.

PG&E offers two EV rates, E9-A and E9-B. E9-A is a whole house rate option serving the house and EV load through a single meter. E9-B is a separately metered rate option that utilizes a second meter and dedicated breaker that serves only the EV load. E9-B maintains the existing rate schedule for the house load while providing a separate meter for charging an EV. Both EV rates are Time of Use (TOU) rates structures that incentivize “off peak” charging.

The number of customers on the two EV rates are as follows:

E9-A: 1,218

E9-B: 120

PG&E filed a new EV rate proposal on September 26, 2011. The CPUC allowed PG&E an extension to file a modified EV rate proposal by June 1, 2012. The proposed new EV rates are non-tiered, TOU rates that incentive “off peak” charging. For a full description the existing EV rate schedules, please see table below.

Existing EV RATES

		Current Rate
E-9A	Peak time	2 p.m.- 9 p.m.
	Peak rate ¢/kWh	¢30.4 - ¢53.3
	Partial-peak time	7 a.m. - 2 p.m. 9 p.m. - 12 a.m.
	Partial-peak rate ¢/kWh	¢11.1 - ¢34.0
	Off-peak time	12 a.m. - 7 a.m.

	Off-peak rate ¢/kWh	¢5.3 - ¢20.2
E-9B	Peak time	2 p.m. - 9 p.m.
	Peak rate ¢/kWh	¢30.4 - ¢52.9
	Partial-peak time	7 a.m. - 2 p.m. 9 p.m. - 12 a.m.
	Partial-peak rate ¢/kWh	¢10.7 - ¢33.6
	Off-peak time	12 a.m. - 7 a.m.
	Off-peak rate ¢/kWh	¢5.9 - ¢28.9

6) If known, how many customers with electric vehicles are on non-electric vehicle-specific tariffs? Please report both total data and data separately by tariff.

PG&E estimates that as of March 31, 2012, 1,758 customers in its service territory were not on electric vehicle specific rates.

7) Please provide and explain the estimation method your utility expects to use to estimate electric usage from electric vehicle charging for use in calculating LCFS credits. Has this method been approved by the CARB?

The California Electric Transportation Coalition (CaETC) submitted a letter on behalf of PG&E and its participating members to the California Air Resources Board (CARB) that was approved in April 2012 detailing the method for estimating electricity used as a transportation fuel for customers that do not have separately metered EV data.¹ The CaETC proposed using the electricity consumption of separately metered EV customers as a proxy for estimating non-separately metered PEV electricity consumption. The proxy could take the form of a statistical measure of central tendency (for example the median) of kWh usage per PEV, based upon separately metered PEV customer's usage. The estimation method recommended converting the separately-metered EV customer kWh usage to the median, or other central tendency, use per billing day, which can be used to create annual estimates. Please see appendix A for further detail. Depending on final development of the CARB Low Carbon Fuel Standard

¹ Appendix B

(LCFS) rule and reporting requirements, PG&E may use the CalETC method for allocating LCFS credits for ratemaking purposes as well.

8) Approximately what range of credits does your utility expect to receive under the LCFS regulation each year 2013-2020? Please explain the assumptions (e.g., number of vehicles, efficiency, etc.) that you use in estimating this range.

PG&E EV customers who are on a separately metered rate for their EVs currently generate approximately 1.7 credits per year, utilizing the existing LCFS values for the amount of avoided carbon from electricity (customers would generate approximately 1.9 credits per year if the “marginal” electricity mix carbon intensity was utilized). There are several factors that could affect the amount of credits generated per customer going forward, including, but not limited to:

- The amount of miles driven, with the associated increase or decrease in the electricity utilized;
- The “average” or “marginal” electricity mix carbon intensity going forward;
- The amount of miles that an average PEV can achieve per kWh going forward; and
- The decrease in the carbon intensity of CARBOB gasoline.

PG&E does not currently have a reasonable estimate of all of these factors, which can result in more or fewer credits generated per EV per year. Under these circumstances, PG&E believes that it is reasonable to utilize the current estimated 1.7 credits per EV per year for the purpose of this data request 2013-2020 forecast. Below is PG&E’s preliminary and illustrative forecast for LCFS credits based on the current California Energy Commission (CEC) Integrated Energy Policy Report’s (IEPR) medium adoption case for EVs in PG&E’s service territory, assuming that approximately 1.7 LCFS credits per EV per year was generated and that all EV electricity usage was able to be counted for LCFS credits. Actual credits will depend upon actual market results and may vary significantly from this illustrative forecast.

Year	2013	2014	2015	2016	2017	2018	2019	2020
Estimated LCFS Credits	74,102	143,996	216,633	288,474	369,544	453,549	548,722	646,683

If the number of EVs sold were larger or smaller than the medium case, then the potential LCFS credits would increase or decrease as well.

9) What range of credit revenue does your utility expect to receive under the LCFS regulation by year from 2013-2020? Please explain the assumptions (e.g., number of credits, credit value) you use in estimating this range.

PG&E believes that there is insufficient market data to provide a reasonable assessment of the potential trading values for a LCFS credit. A wide variety of forecasts have been provided by different sources, including the CARB. The only existing market transaction of LCFS credits was estimated to value a LCFS credit between \$20 to \$40 per credit.²

If the illustrative forecast of LCFS credits from the answer to Question 8 were used and the LCFS credits were valued at \$15, \$30, or \$45, then the associated revenues would be:

Year	2013	2014	2015	2016	2017	2018	2019	2020
Estimated LCFS Revenues (\$15/credit)	\$1,111,530	\$2,159,945	\$3,249,494	\$4,327,112	\$5,543,165	\$6,803,232	\$8,230,828	\$9,700,249
Estimated LCFS Revenues (\$30/credit)	\$2,223,060	\$4,319,891	\$6,498,988	\$8,654,224	\$11,086,330	\$13,606,465	\$16,461,656	\$19,400,499
Estimated LCFS Revenues (\$45/credit)	\$3,334,590	\$6,479,836	\$9,748,482	\$12,981,336	\$16,629,494	\$20,409,697	\$24,692,484	\$29,100,748

As with the answer to Question 8, the amount of LCFS credits would vary if fewer or more EV vehicles were purchased than the values used, or the amount of driving increased or decreased versus expected. In addition, the values given here assume a steady monetary amount per LCFS, which could significantly vary each year.

10) What range of costs does your utility expect to incur from participation in the LCFS credit program from 2013-2020? Please explain the assumptions that you use in estimating this range.

² <http://www.argusmedia.com/pages/NewsBody.aspx?id=791459&menu=yes>

Given the numerous uncertainties surrounding the LCFS program, and the need for further discussions with the ARB, the Commission, and stakeholders, PG&E has not developed a range of administrative costs at this point.

11) If possible, please estimate the range of administrative costs you anticipate incurring while administering a program to return credit revenues to EV customers. Please provide separate estimates for the different return options suggested by parties to this proceeding. Please note any fixed and variable cost assumptions (e.g., information technology upgrades, personnel, direct mail to customers) you use in estimating this range.

PG&E is currently in the early phase of investigating the costs for administering the LCFS program due to the uncertainty surrounding the method that would be used to return the credits and therefore cost forecasts are preliminary.

Parties suggested three broad categories of credit revenue return; checks, rebates, and bill credits. Based on preliminary estimates, PG&E offers the following:

1. Check Return:

At this point in time, PG&E has not determined if its systems will require upgrades or if manual treatment will be more appropriate for LCFS credit distribution. There are many uncertainties surrounding the quantity of LCFS credits and future EV adoption levels, rendering it difficult to determine the most prudent path in this early stage of the LCFS program.

However, printing, mailing, and bank processing for a check include:

- An estimate of ~\$0.50 per check printed and mailed
- An estimate of ~\$0.14 for per check processed by the bank.

The total cost for printing, mailing, and bank processing for a check annually is roughly \$0.64 per check. However, this cost does not include manual or additional system work or the costly complexities associated with un-cashed and escheated checks (if the checks are not cashed and the unclaimed money is turned over to the state). If the check is cashed within 90 days, PG&E's costs are contained; however un-cashed checks can trigger a lengthy and costly process. To help provide an understanding of the breadth of operational complexities and additional costs associated with un-cashed checks, some of the following steps may be required of

PG&E after 90 days, each with its associated additional cost above and beyond the initial printing, mailing, and bank processing associated with the original check:

1. Send customer a letter;
2. Call center engages customer;
3. Potential check re-issuance (including costs associated with bank fees, initial check stop, the cost to re-issue the check, etc.); and
4. Checks still outstanding after a 1-year waiting period (CPUC mandated refund), move into the escheatment process. This process requires due diligence, including re-contacting the customer, which can conclude in the finalization of escheatment process or check re-issuance

Depending on the outcome, PG&E may be required to track the check for over 1 year and engage with the customer on multiple occasions. Therefore, a check potentially can cost approximately up to \$35.00 to finalize. Since the value of the LCFS credit may be lower than this amount, this process may not be cost effective. In addition, if the value of the LCFS credit is relatively low, the possibility of uncashed checks may increase due to the customer disinterest in cashing a check for a small amount, which would increase the costs and operational complexities.

2. Up-front Rebates:

Up-front rebates are also costly and pose operational problems. Up-front rebates require financing by utility customers (not program participants). Since there are such a wide range of future credit values, there is substantial risk to non-participating customers. In addition, it is unclear how rebates will be returned to customers and coordinated with various entities.

3. Bill Credit

Based on its preliminary investigation, PG&E believes that bill credits appear to be the more administratively simple method to implement and therefore the least costly as well. First, a bill credit does not require the costly administrative complexities associated with uncashed checks. Second, PG&E billing system is equipped to handle a bill credit arrangement. Third, PG&E may be able to leverage the system updates proposed in Track One of the Greenhouse Gas Order Instituting Rulemaking in order to more cost effectively implement the LCFS program.

12) What data or research is available on customer responses to up-front and ongoing monetary incentives to electric vehicle owners? Please summarize and provide citations to available sources of relevant information.

PG&E knows of no current data or research on the specific effect of electric rate financial incentives on electric vehicle owners.



January 31, 2012

To: James Goldstene, Executive Officer
California Air Resources Board

From: Eileen Wenger Tutt, Executive Director
California Electric Transportation Coalition

Re: Request for EO approval of Estimation Methodology

CalEETC supports CARB’s Low Carbon Fuel Standard (LCFS) program, as detailed in our December 12, 2011, letter to the Board on the proposed amendments to the LCFS.¹ CalEETC members include Los Angeles Department of Water & Power, Pacific Gas & Electric, Sacramento Municipal Utility District, San Diego Gas & Electric, and Southern California Edison Company. In recognition of the fact that not all plug-in electric vehicles (PEVs) will charge using equipment that includes a separate meter (tracking PEV consumption of electricity), the LCFS regulation allows estimation (in kWhs) of residential PEV charging until 2015, if approved by the Executive Officer under California Code of Regulations section 95484 (b) (3) (C) (1). After considerable discussion with its members and CARB staff, CalEETC developed the following proposal to support the LCFS program and program goals of simplicity, transparency, ease of administration, and maximizing credit availability that CARB outlined in its 2011 Staff Report².

CalEETC and its members believe estimation is vital. Many PEV owners are not choosing separately metered or submetered PEV rates, and are instead electing to include their PEV charging within their current residential rate, or are opting for whole-house time-of-use rates. As PEV adoption increases and utilities learn more about customer charging behavior and metering preferences, the proposal would allow the utilities to amend the methodology to incorporate such insights. CalEETC respectfully requests approval of the estimation method described below.

Registered PEVS without Residential Separate Meters	X	Average Separately Metered Electricity Usage per PEV per day	X	Days Per Time Period	=	ESTIMATED non-metered PEV Electricity Usage per time period
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CalEETC proposes using electricity consumption data from separately metered, including data from sub meters, residential PEV chargers, in kWhs, as a proxy for estimating non-separately metered PEV electricity consumption (e.g., those on whole house time-of-use or traditional

¹ <http://www.arb.ca.gov/lists/lcfs2011/132-eileen.pdf>

² Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Low Carbon Fuel Standard, October 2011 (<http://www.arb.ca.gov/regact/2011/lcfs2011/lcfsisor.pdf>)



domestic rates).³ The proxy could take the form of a statistical measure of central tendency (we recommend the median) of kWh usage per PEV, based upon separately metered PEV customers. Based on data thus far, CalEETC recommends converting the separately-metered PEV customer kWh usage to the median use per billing day. For estimation, the median (or desired measure of central tendency) would be applied to the number of billing days the customer is known to have owned the PEV in a given year and is updated annually. This is recommended as PEV electricity usage can vary per day and per month.

To ensure that such estimations properly reflect market and regional trends, CalEETC proposes that separately-metered PEV electricity consumption data be reported quarterly and that each utility provide such data specific to its service territory. If a utility does not have this capability, as may be the case for some publicly-owned utilities, then CalEETC proposes the utility use a statewide average of separately-metered PEV electricity consumption data.

To ensure robust estimates of the number of PEV customers and that credits are allocated to the correct utility, CalEETC proposes obtaining zip+4 PEV registration data from a data management firm that has access to DMV data or a similar source. Using this information, utilities will be able to determine the number of PEVs within their service territory, and from that number, determine the number of non-separately metered PEVs.

Each utility would submit the total PEV electricity consumption for their service territory (the aggregate of actual electricity consumed by separately-metered PEVs and the estimated electricity consumed by non-separately metered PEVs), in kWhs, to CARB through the LCFS Reporting Tool. Each utility would submit any other supporting calculations in their annual LCFS reports, as required by the LCFS regulation. The utilities also support an annual meeting with CARB staff to discuss the status of the methodology, data collection, and recommended improvements or modifications.

³ Note that if the distribution of PEV kWh usage is technically “not normal”, then the mean is not an appropriate proxy, and instead, the median can be considered to be a more appropriate representation of usage. The median is a robust measure of central tendency given that when the distribution is normal, the median approximates the mean.



CalEtc thanks you for considering our proposal and we respectfully request your approval. CalEtc also thanks CARB staff for their willingness to work through these complex issues with stakeholders. We look forward to continuing to work with you and your staff.

Sincerely,

Eileen Wenger Tutt
Executive Director

EWT/kmg

cc: Richard Corey
Mike Waugh
Manisha Singh
Carolyn Lozo