BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Address Utility Cost and Revenue Issues Associated with Greenhouse Gas Emissions.	Rulemaking 11-03-012 (Filed March 21, 2011)

RECOMMENDATIONS OF THE INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION RE: ELECTRIC DISTRIBUTION UTILITY LOW CARBON FUEL STANDARD CREDIT REVENUE ALLOCATION

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March 30, 2012

I. INTRODUCTION

The International Council on Clean Transportation (ICCT) appreciates the opportunity to submit these comments on Electric Distribution Utility Low Carbon Fuel Standard (LCFS) credit revenue allocation options. We are providing these comments in response to the February 8, 2012 "Administrative Law Judges' Ruling Providing Guidance on Track 2 Activities" (Guidance). The Guidance requests comments on the allocation of Electric Distribution Utility LCFS credits, assuming LCFS litigation is resolved. The ICCT appreciates the CPUC's efforts to develop policies to promote the adoption of Electric Vehicles (EVs) and the goals of the LCFS while continuing to assure reliable electric utility service.

II. REGULATORY REQUIREMENTS AND POLICY OBJECTIVES

CARB's LCFS regulation (Title 17 California Code of Regulations Section 95484(a)(6)) requires that Electric Distribution Utilities must "use all credit proceeds as direct benefits for current EV customers" in order to opt-in to the LCFS as a credit recipient. This requirement is appropriate since the LCFS is designed to incentivize lower carbon-intensity transportation fuels such as electricity. In addition, returning the credit value to EV customers improves the economics of vehicle electrification at this critical stage in the market's development.

In addition, the CPUC February 8, 2012 guidance proposes three policy objectives for proposed LCFS credit uses and requests comments on these and other potential objectives:

- Be simple to administer
- Minimize the grid impacts of EV adoption; and
- Facilitate and increase the adoption of electric vehicles

We agree that the CPUC's proposed policy objectives should be considered when evaluating options that meet CARB's regulatory requirement. We also encourage the CPUC to consider the goals established in Decision 11-07-044 including the following[1]:

- Ensure that consumer experiences with Electric Vehicles are overwhelmingly positive;

[1] Phase 2 Decision Establishing Policies to Overcome Barriers to Electric Vehicle Deployment and Complying with Public Utilities Code Section 740.2, 2011. July 25. p. 5-6.

- Promote Electric Vehicle cost reductions such that they are cost competitive with conventional vehicles;
- Advance energy security, air quality, climate change, and public health goals; and
- Facilitate mainstream adoption of Electric Vehicles

We provide comments below on three options that we recommend for further evaluation based on the regulatory requirement and policy objectives. First is an upfront rebate identified in our prior comments[2], followed by the annual rebate and EV rate reduction options identified by CPUC staff.[3]

III. LOW CARBON FUEL STANDARD CREDIT REVENUE ALLOCATION RECOMMENDATIONS

A. Upfront Rebates

Description:

The ICCT strongly encourages the CPUC to consider EV rebates to reduce upfront costs, a major barrier to EV adoption. Under this option, EV buyers would receive the rebate at the time that they become EV customers. The rebate would monetize, and provide to the customer up front, the projected value of future LCFS credit generation for a fixed period such as five years.

Rebates could be set based on expected LCFS credit values by basic vehicle type (pure battery electric, plug-in hybrid), and potentially also estimated mileage bin.[4] For instance, Table 1 provides an example of potential LCFS credit quantities over a five year period for an EV with the same energy consumption rate as the Nissan Leaf. The total revenue available from these credits would depend on the total quantity available times the price of LCFS credits per ton.

[2] Pike, E. 2011. Prehearing Conference Statement of the International Council on Clear Transportation. April 21.
[3] We note that the CPUC staff have raised uncertainties about whether the allocation of LCFS credit value for transmission and distribution infrastructure or for electric vehicle service providers can meet CARB's regulatory requirement and we do not provide comments on these options at this time.
[4] Credit quantities for a given model of EV can be estimated based on LCFS electricity values per KWhr, charge-at-home share of total electricity usage, and expected vehicle model mileage and efficiency. We note that EVs with lower efficiency may actually generate more usage-based LCFS credits. We do not recommend increasing rebates for vehicles with higher energy consumption, however, for administrative simplicity and to avoid conflicting with energy security and environmental goals.

Initial Idaho National Lab/Ecotality reports sponsored by US Department of Energy indicate annual Leaf mileage in the 7,000-8,000 mile bracket, with 96 percent of electricity supplied by home charging and thus potentially available for Electric Distribution Utilities.[5] Plug-in hybrid electric vehicle (PHEV) mileage can be estimated based on electric range. For instance CARB estimates a 40 percent annual electric fraction for PHEVs with a 20 mile range entirely on stored grid electricity,[6] which would result in about 5,360 electric miles driven per year over the initial five years of ownership.[7] (ICCT is currently finalizing a white paper on calculating EV upstream emissions, which will provide additional discussion on these topics.)

Table 1: Potential Electric Distribution Utility LCFS Credit Quantities Over a Five Year Period (sources: www.fueleconomy.gov, CARB LCFS regulation, US Department of Energy[8])

	Potential LCFS Credit Quantities (Tons GHG)	
Projected EV usage (annual electric miles per vehicle)	Credits per vehicle - average electricity GHG intensity value	Credits per vehicle - marginal electricity GHG intensity value
5000	6.1	6.7
6000	7.3	8.0
7000	8.5	9.4
8000	9.7	10.7
9000	11.0	12.0
10000	12.2	13.4

[5] For reports on 2011 fourth quarter Leaf and Volt deployments see: US Department of Energy. 2012. "Chevy Volt Vehicle Demonstration". February 22. and US Department of Energy. 2012. "EV Project Nissan Leaf Vehicle Summary". January 26.

[6] CARB used SAE J2841 utility factors, which index the fraction of electric miles to the electric range of a PHEV California Air Resources Board (CARB). 2011. "Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider the LEV III Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards and Test Procedures and to the on-Board Diagnostic System Requirements for Passenger Car, Light-Duty Trucks, and Medium-Duty Vehicles, and to the Evaporative Emission Requirements for Heavy-Duty Vehicles." December 7, 2011. p136. Available at www.arb.ca.gov, last accessed 1-11-2012.

[7] ICCT calculated passenger car annual miles at 13,400 over the first three years. See chapter 4 of US Environmental Protection Agency. 2011. "Draft Regulatory Impact Analysis: Proposed Rulemaking for 2017-2025 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards." November.

[8] ICCT used an LCFS target GHG intensity value of 95 g GHG/MJ for purposes of this example. Actual targets will vary by year, reducing the quantity of credits available for electricity though likely increasing the value of each credit. Electricity GHG intensity, Energy Economy ratio, and calculation equations are taken from CARB's LCFS regulation resulting in LCFS credit values of 716 g GHG per KWhr electricity, using average electricity LCFS GHG intensity scores, and 786 g GHG per KWhr electricity, using marginal electricity LCFS GHG intensity scores. Leaf energy consumption is rated at 0.34 kwhr/100 miles

Evaluation Criteria

Direct Benefits to Current EV Customers and Increased EV Adoption: Reducing up-front costs would best promote EV adoption and cost reduction compared to reducing annual energy costs, as consumers value only about 2-4 years of future cost-savings for conventional vehicles[9]. This option would directly benefit current EV owners entering the market once this incentive becomes effective. Customers who purchased vehicles prior to program establishment would not qualify, which is a common applicability rule for incentive programs. It will also meet the additional program goals from Decision 11-07-044 as noted earlier.

Grid Benefits: Upfront rebates could be coupled with outreach and education about the benefits of Time-of-Use (TOU) rates to EV customers who otherwise may not have been aware of this option, as noted at the March 14 Plug in Electric Vehicle Collaborative meeting. Consumers could be defaulted to a TOU rate to minimize grid impacts and facilitate off-peak renewables integration unless they wish to opt-out. They could also be educated about controlled charging programs when available to best match charging to renewable resource availability. In addition, rebate applications would help provide utilities with notification of any EV placements that were missed by other notification processes.

Administrative Simplicity: Providing up-front rebates would require estimating the quantity and future value of LCFS credits accrued from at home charging and monetizing that value into an up-front payment, which would add administrative complexity. If a functioning market for LCFS credits existed, utilities could contract for future credit sales at fixed prices per ton. A potential administrative option is an Investor Owned Utility internal financing mechanism based on estimated future LCFS credit values. Administrative costs would be reduced to the extent that the rebates could be package with AB118 incentives and/or other incentives (at least for the duration of the AB118 program).

[9] David Green. 2010. "Why the Market for New Passenger Cars Generally Undervalues Fuel Economy". January. http://www.internationaltransportforum.org/jtrc/DiscussionPapers/DP201006.pdf

Jurisdictional issues: In response to CPUC's request to discuss any jurisdictional constraints, we are not aware of any issues for the three options addressed in our comments although we have not performed a legal analysis of this question.

B. Annual Rebates

Description

As suggested by CPUC staff, LCFS credit value could be rebated to EV customers annually.

Evaluation

Direct Benefits to Current EV Customers and Increased EV Adoption: This option will directly benefit current EV owners to the extent that they become aware of the program and choose to sign up. Annual rebates will create an EV ownership incentive and further many of the goals addressed earlier by reducing annual costs, although annual incentives are a less effective EV purchase incentive than an upfront rebate as noted earlier. In addition consumers may be uncertain about future rebate levels. Annual rebates are less visible than a larger up-front check, though likely more visible than rate reductions.

Administrative Simplicity: Annually determining and capturing the value of LCFS credits could be administratively simple, assuming a liquid LCFS credit market based on past year LCFS credit sales. Overall administrative efficiency would depend on program administration costs to track EV owners and distribute checks or a bill refund annually.

Grid Benefits: This option has potentially higher grid reliability benefits than Option A through after-the-fact education to consumers about TOU and/or controlled charging, as well as potential notification to utilities about EV placements, such as when EV owners move.

C. EV Electricity Rate Reduction

Description

As suggested by CPUC staff, LCFS credit value could be used to reduce EV electricity rates. Rate reductions could apply across all EV rates, or focus on TOU/controlled charging as noted by CPUC staff.

Evaluation

Grid Benefits: Encouraging TOU rates and/or controlled charging is highly desirable for grid reliability and intermittent or off-peak renewables integration (though these programs can be established on their own merits rather than hinging on LCFS program revenues).

Direct Benefits to Current EV Customers and Increased EV Adoption: EV electricity rate reductions will benefit EV owners who opt-in. EV owners who are not aware of EV TOU rates, or for whom EV electricity usage metering is not cost-effective, are not likely to participate.[10] Rate reductions could encourage EV adoption and thus further many of the goals identified earlier, although effectiveness for increasing EV adoption would hinge on consumers understanding and valuing future electricity rate savings when deciding whether to purchase an EV. If the CPUC adopts this option, we encourage a visible separate line item in EV owner electric bills to help educate customers about the benefits of LCFS credits for electric rate reductions.

Administrative Simplicity: The administrative simplicity of this option would depend on the resources needed to revise EV rate structures based on past and/or future LCFS credit revenue.

IV. CONCLUSION

ICCT appreciates the opportunity to submit these comments. We believe that all of these options have significant benefits to EV customers, can encourage EV adoption and potentially enhance grid reliability, and are administratively feasible. We believe that Option A provides the greatest potential benefits for EV adoption, although certain administrative challenges

[10] We note that metering solutions could encourage wider opt-in to electric vehicle metering and EV rate adoption, as addressed by the CPUC's metering track.

would need to be addressed. We look forward to working with staff and other stakeholders to promote policies that meet the goals and requirements of the LCFS and the policy objectives discussed in these comments.

Dated: March 30, 2012

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