BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Programs, Tariffs, and Policies.	Rulemaking 13-11-007 (Filed November 14, 2013)

COMMENTS OF CALSTART ON SCOPING MEMO AND RULING TO CONSIDER ALTERNATIVE-FUELED VEHICLE PROGRAMS, TARIFFS, AND POLICIES

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I. INTRODUCTION

Pursuant to the *Assigned Commissioner's Scoping Memo and Ruling* of July 16th, 2014, CALSTART respectfully files these comments to the California Public Utilities Commission (Commission).

CALSTART appreciates the opportunity to provide comments. The potential economic and environmental benefits of plug-in electric vehicles (PEVs) are substantial. These vehicles provide substantial environmental benefits, savings for consumers, and benefits for the grid. They can also play a key energy storage role as they become better integrated into the grid. However, the market is nascent and there are significant barriers remaining. This rulemaking is very timely. We believe both the Commission and the utilities have an important role to play in accelerating progress and maximizing statewide benefits. Below, we provide answers to questions 1, 2, 3, and 4 identified in the Scoping Memo and Ruling.

II. RESPONSES TO QUESTIONS POSED IN SCOPING MEMO

1) *Should the Commission adopt the proposed AFV Guiding Principles? What modifications, if any, are appropriate?*

CALSTART supports the proposed "AFV Guiding Principles," listed below. We recommend adopting these principles and encourage their use in this proceeding.

- *Promote the deployment of safe and reliable AFV grid infrastructure designed to meet transportation and energy service needs while maximizing ratepayer benefits and minimizing costs to all utility customers.*

- *Target near-term solutions that complement the use of preferred energy resources and utilize the grid efficiently.*
- *Incorporate and enhance policies from other, related Commission proceedings to promote efficient program implementation and use of ratepayer utility customer funding.*
- *Enable and incorporate the full range of values from VGI in a new program as part of the Commission's overall AFV efforts while remaining technology neutral and allowing for business model innovation.*

Additionally, we recommend that the Commission seek to align with related state policy goals including AB 32, federal air quality requirements, the California energy storage mandate, and the Governor's goal of 1.5 million ZEVs by 2025. These goals underscore the need for a proactive effort to accelerate transportation electrification.

2) ***Should the Commission consider an increased role for the utilities in PEV infrastructure deployment and, if so, what should that role be? If the Commission should consider utility ownership of PEV charging infrastructure, how should the Commission evaluate "underserved markets" or a "market failure" pursuant to D.11-07-029? What else should the Commission consider when evaluating an increased role for utilities in EV infrastructure deployment?***

The Commission should consider an increased role for utilities in PEV infrastructure deployment. Greater utility involvement should accelerate transportation electrification, maximize benefits for ratepayers and for the grid, and contribute to other state policy goals. The Commission should give particular consideration to the role of utilities in supporting infrastructure deployment in commercial settings to support electric truck fleets, transit agencies, and workplace charging. The infrastructure deployment costs in these commercial applications can be burdensome and the potential benefits are substantial.

Each application should be judged on its merits and the benefits it provides. The Commission should protect customer choice and allow for innovation, while allowing the utilities to play a more active role than they have to date. We encourage a holistic focus on options to best capture benefits and accelerate transportation electrification, and caution against an overly narrow focus on trying to define and prioritize "underserved markets" and "market failures" at this early stage in the market. Indeed, the vast majority of the market (with the possible exception of single family homes) is arguably "underserved" from the standpoint of infrastructure deployment.

3) ***What education and outreach activities must the utilities provide to support further customer PEV adoption? What existing resources are available for these activities and what additional resources are needed?***

Though there is generally much greater awareness of PEV costs and benefits in California than elsewhere in the country, there is still a lot of work to do in this area. The market is still nascent and there is still significant lack of understanding about electric vehicles, charging options, rates, and total cost of ownership. We believe it is important for the utilities to be able to play a larger and more active role in education and outreach to support transportation electrification. This outreach should not be limited to residential consumers but should include commercial customers.

For customers and other parties that are already interested in PEVs, the utilities are well-positioned to provide the following sorts of information:

- Clear, accessible, and easily understood information on electricity rates (including time of use), best times to charge to maximize savings, and likely overall impacts on the electricity bills. For commercial customers, this should also include information on demand charges and associated impact and costs.
- Information about electrical system upgrades that may be necessary, charging hardware with some general information on options and associated costs.
- Resources and information on installers, installation, and permitting.
- Total cost of ownership for PEVs compared with more conventional alternatives.

For potential customers that are not yet engaged, there is a clear need for additional outreach around costs and benefits, best practices, vehicle options (particularly for commercial fleets) and related issues. Some of this information may be better delivered in partnership with outside groups, but we do encourage greater flexibility for the utilities to engage. There is a wealth of information available and utilities need to coordinate with other groups to make sure their end customers are reached and have access to the appropriate information. The end goal is to have informed customers understanding the opportunities and benefits of electric transportation and best ways for them to participate in adopting electric transportation.

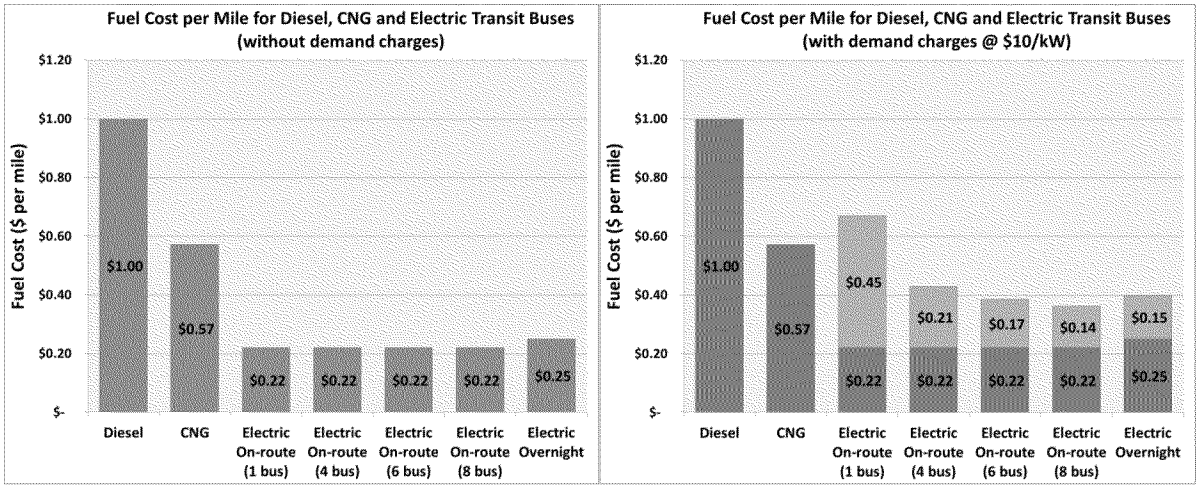
A general lack of sufficient understanding of PEV costs, benefits, rates, and operations is a major barrier to cost-effective transportation electrification. Active utility engagement in outreach and education is needed to meet state goals around transportation electrification, minimize potential adverse impacts to the grid, and maximize overall customer and ratepayer benefits.

4) ***How should the Commission mitigate the impact of demand charges, if at all, on entities pursuing transportation electrification?***

As noted in our previous comments, demand charges can have a significant (negative) impact on the business case for electric buses. Demand charges may also be of concern for commercial customers with e-truck fleets, as well as employers providing workplace charging. We believe the commission can play a role in mitigating these charges and facilitating transportation electrification, particularly in the early years of the market.

CALSTART recently completed a study on the topic of peak demand charges and electric transit buses for the Federal Transit Administration.[1] This study looked at 26 electric utilities around the country, 24 of which include peak demand charges (directly or indirectly) in their commercial and industrial electric rate schedules. These charges vary widely. Depending on the rates and the specific situations in question, these charges have a significant impact on fuel (i.e. electricity) costs. This creates a barrier for a fleet deciding whether or not to adopt electric-drive technologies, potentially slowing the move toward transportation electrification that should provide an overall benefit for the grid. For purposes of illustration, Figure 1 below compares the fuel costs per mile of a diesel, CNG and two types of electric transit buses: charging on-route (with four different bus deployment strategies) and charging overnight.[2] In the first case, no demand charges are included and in the second case, medium demand charges at $10 per kW are included.

Figure 1: Fuel cost for diesel, CNG and electric buses with no and medium demand charges



[1] CALSTART. Peak Demand Charges and Electric Transit Buses, White Paper. August 2014. http://www.calstart.org/Libraries/Publications/Peak_Demand_Charges_and_Electric_Transit_Buses_White_Paper.sflb.ashx. Accessed on 08-28-2014.

[2] We assume each bus drives 40,000 miles per year. The diesel bus has a fuel economy of 4 MPG and diesel is priced at $4.00 per gallon. The CNG bus has a fuel economy of 3.5 MPDGE and CNG is priced at $2.00 per DGE. The electric transit bus charging on -route has an efficiency of 2.2 AC kWh / mile, the electric transit bus charging on -route has an efficiency of 2 .5 AC kWh / mile and electricity is priced at $0.10/kWh. One electric bus charging on -route draws 150 kW from the grid, 4 draw 280 kW, 6 draw 330 kW and 8 draw 380 kW. The electric bus charging overnight draws 50 kW from the grid.

Demand charges have the potential to increase fuel costs significantly, creating a barrier to transportation electrification. The impact of demand charges for on-route charging is diminished as more buses are deployed, because the charges can be spread over more buses, but the upfront barrier is still real. We encourage the Commission to work with parties on a long term solution for demand charges in commercial settings that encourages electrification and mitigates costs.

We recognize that price signals are important and that demand charges are a tool to align rates with cost-of-service. However, we believe that focused attention on this issue is needed when it comes to finding long term solutions and rate structures that work for commercial vehicle electrification.

a. *Encourage utilities to proactively work with customers to find long term solutions and rate structures that support commercial vehicle electrification*

The Commission should encourage utilities find demand charge solutions that encourage transportation electrification. The utilities may need flexibility to work with customers to define a rate or solution that allows them to achieve their transportation electrification objectives. One very simple example is an option with a higher energy charge (more per kWh) and lower power charge (less per kW), which could benefit transit agencies with on-route fast-charging. Some electric utilities already provide this option for commercial customers. For instance, the General Service Demand rate proposed by Tampa Electric Company has 2 different options: a Standard rate with a low energy charge ($0.01583/kWh) and a high power charge ($9.16/kW) and an Optional rate with a high energy charge ($0.05879/kWh) and a low power charge ($0.00/kW).[3]

This simple example is just intended to illustrate the effect that optional, appropriately targeted solutions can have. Each case is different and a flexible approach is needed to identify solutions that work for the long term, even if there are impacts in the near term. Another option may be a rate designed for transit agencies that use electric transportation technologies, similar to those offered for light and heavy rail. Particularly for fleets opting for on-route fast charging, the solution may require a temporary suspension of demand charges to encourage early deployment of electric transit buses charging on-route that may not be economically feasible with demand charges. As transit agencies purchase more electric transit buses, they could spread the demand charges associated to one fast charger over more buses and achieve a viable business case.

[3] CALSTART. Peak Demand Charges and Electric Transit Buses, White Paper. August 2014. http://www.calstart.org/Libraries/Publications/Peak_Demand_Charges_and_Electric_Transit_Buses_White_Paper.sflb.ashx. Accessed on 08-28-2014.

b. Increase outreach, education, and communication.

More active and comprehensive communication around transportation electrification and related issues should help to mitigate the impact of demand charges. This includes communication with customers about rates and cost impacts, as well as better information about options for mitigating demand charges through efficiency, storage, or other technological solutions. Additional thoughts on outreach and education are outlined above in response to question #3.

III. CONCLUSION

CALSTART appreciates this opportunity to provide these comments and we look forward to working with the Commission and stakeholders in this proceeding to ensure the successful commercialization of PEVs while capturing important benefits for the grid.

Respectfully submitted,

/s/

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