BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking on the Commission's own motion to consider alternative-fueled vehicle tariffs, infrastructure and policies to support California's greenhouse gas emissions reduction goals.	Rulemaking 09-08-009 (Filed August 20, 2009)

COMMENTS OF THE UTILITY REFORM NETWORK ON THE COMMISSION'S ORDER INSTITUTING RULEMAKING TO CONSIDER ALTERNATIVE-FUELED VEHICLE TARIFFS, INFRASTRUCTURE AND POLICIES TO SUPPORT CALIFORNIA'S GREENHOUSE GAS EMISSIONS REDUCTIONS GOALS

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COMMENTS OF THE UTILITY REFORM NETWORK ON THE COMMISSION'S ORDER INSTITUTING RULEMAKING TO CONSIDER ALTERNATIVE-FUELED VEHICLE TARIFFS, INFRASTRUCTURE AND POLICIES TO SUPPORT CALIFORNIA'S GREENHOUSE GAS EMISSIONS REDUCTIONS GOALS

I. INTRODUCTION

The Utility Reform Network (TURN) respectfully submits the following response and opening comments to the California Public Utilities Commission (Commission or PUC), as directed in the Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Tariffs, Infrastructure and Policies to Support California's Greenhouse Gas Emissions Reduction Goals (OIR).

On August 24, 2009, the Commission issued this rulemaking to "consider tariffs, infrastructure and policies needed for California investor-owned electric utilities to ready the electricity system in a consistent, near-term manner for the projected statewide market growth of light-duty passenger plug-in hybrid electric vehicles (PHEV) and battery electric vehicles (BEV) throughout California."[1] In the OIR, the Commission outlined the preliminary scope of this Rulemaking and posed forty-two questions for parties to answer as well as inviting parties to identify other issues that should be addressed in this Rulemaking. TURN addresses several but not all of the questions in these comments. Silence on a particular question is not intended to imply that TURN has no interest in the matter. TURN focused its attention to those questions it felt most

[1] Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Tariffs, Infrastructure and Policies to Support California's Greenhouse Gas Emissions Reduction Goals, August 24, 2009 (henceforth cited as OIR), p. 2.

pressing to address at this time but reserves the right to comment upon other issues as this Rulemaking proceeds.

II. ISSUES AND QUESTIONS

A. The Commission should phase this Rulemaking and proceed slowly and deliberately with its evaluation of the issues related to integrating electric vehicles into the state's electricity system.

The integration and expansion of PHEV and BEVs into California's electricity system is clearly a complicated issue, as evidenced by the number of questions presented to parties in this OIR. Rather than diving headfirst into answering all these questions at once, the Commission should determine what its near term and long term goals are and answer the questions accordingly. In the near term, the PHEV and BEV market is likely to be small enough initially so as to be all but invisible on the grid as a whole, and with only a moderate load impact, if any. The questions and solutions that relate to such a small market will be very different from the issues that must be addressed as the market expands. We are very unlikely to be able to answer all these questions definitively at this time, and it may actually be counterproductive to attempt to do so.

Evaluating the needs of the utilities and the electricity system as PHEVs and BEVs enter the market will be an ongoing process, and no party or interest will benefit from rushing into massive infrastructure upgrades and tariff changes. Moving too quickly with this process will likely waste ratepayer money and result in one or more utilities having to redo, reinstall or modify some of its infrastructure. PG&E's track record in dealing with large-scale technological changes is worrisome, in particular. In the past, PG&E has had serious and repeated trouble managing changes to its billing system. PG&E has also clearly shown what happens when a utility rushes into new

technology, as its AMI application and subsequent upgrade exemplifies. In both these instances, PG&E ratepayers have been left with the bill.

TURN therefore recommends addressing these issues in a phased manner and implementing changes slowly. In the first phase, the Commission, with the participation of stakeholders, should evaluate the utilities' existing electric vehicle tariffs in order to determine what the utilities' experience with the tariffs and vehicles has been thus far. As part of a second phase, the Commission, again with the participation of stakeholders, should use the evaluation from the first phase to inform the development of near-term and long-term goals.

In the near term, the focus of this Rulemaking should be directed at measures that will suffice temporarily while the number of electric vehicles in the California fleet is low. These early steps could include putting all new electric vehicle owners on a TOU rate. Given that the current cost of purchasing electricity to run EVs is substantially less than the cost of purchasing the amount of gasoline required to run a gasoline-powered vehicle at equivalent use, it would not be an advisable policy to increase the baseline of EV users on TOU rates. The incentive for consumer conversion is already in place, through electric rates that are generally lower than equivalent gasoline prices. Transportation consumers should not require further incentives or TOU rate cushions.

TOU rate alone, however, even without the cushion of a baseline increase, will likely not be an adequate method for limiting the local load increases resulting from concentration of EV early adoption to certain neighborhoods (as a result of spatial demographic distributions), which the Commission is concerned with about in this proceeding. This is precisely because the difference between electric rates and gasoline

prices (at equivalent transportation services demand) is so large that consumers would perceive themselves to be better off with lower unit cost of driving made possible with EVs, and be mostly impervious to any price signals that could realistically be devised as a means of incentivizing off-peak charging. As a result, TURN recommends that the Commission consider limiting the size of the circuit on which owners of EVs are permitted to install Electric Vehicle Service Equipment (EVSE) to 110 volts in the near term. An appropriate TOU rate coupled with limiting the rate at which early adopters can draw electricity should be the primary solutions to local distribution issues that the Commission considers. Implementation of these short-term, cost-effective solutions will permit the Commission, and the utilities it regulates, time to devise appropriate long-term solutions without rushing to rectify a situation that is still out on the horizon.

With an eye towards longer-term changes, the Commission should also direct the utilities to begin compiling an estimate of how much it will cost to incorporate electric vehicles under different scenarios using different rates and metering options. At this stage it would be important for the Commission to explore different means of and costs of separately metering the electric vehicle load. These scenarios should also include estimates of the costs of necessary infrastructure changes as the numbers of electric vehicles increase.

If the preliminary estimates of costs indicate that it may be advantageous to separately record the electric vehicle load, phase two should address the issues related to installing additional meters on customer premises. The Commission and utilities should also use this second phase to focus on solutions that fully utilize the capabilities of the AMI systems, which the utilities are currently installing, in order to minimize costs and

reduce redundancies and wasted opportunities. The Commission should consider investigating currently available AMI capability that would allow communication between customer meters and control of load at the neighborhood level, which would allow the coordination of local load as more customers move to EV technology. This phase should also explore 1) what changes to the distribution system will be necessary to accommodate the increased load from these vehicles, and 2) how best to make changes to billing systems in order to minimize initial upgrade costs and any ongoing need to update or upgrade billing systems, once billing systems sufficient to handle the additional requirements of EVs are initially implemented.

Phase three, which could be addressed concurrently with phase two, could address the issues related to commercial charging stations—issues such as capacity increase cost concerns (such as line extension to remote commercial service stations, and, generally, resizing of transformers, or concerns with respect to stranding of assets when commercial charging entities potentially fail (not in general, but as individual enterprises that might, for example, be poorly sited), which would likely leave extant customers holding the bag, so to speak.

In sum, TURN appreciates the upfront and active roll the Commission is forging regarding this issue. The arrival of the EV is coming, and TURN appreciates the opportunity to participate in the development of the Commission's policies. It must be emphasized, however, that EV technology is still nascent and consumer adoption is still minimal. It is neither necessary nor advisable to rush headlong into "solutions" that do not yet have a problem. The Commission should begin with modest steps to address the possible short-term issue of load at the neighborhood level, including TOU rates (without

a cushioning adjustment to baseline) and circuit voltage limitations. Solutions to long-term issues should be taken only after a deliberative process, which should involve periodic and extended consultation with stakeholders over a period of years. "Solutions" to long-term issues are not required immediately within the timeframe envisioned by the scope of this rulemaking.

B. TURN's answer to the Commission's questions.

1. What types of residential metering arrangements are appropriate for PHEVs and BEVs and why? Should the Commission require a particular metering arrangement, or should it allow more flexibility in metering arrangements by investor-owned utilities or others? If so, why?

As stated above, the Commission should consider putting initial EV customers on a TOU rate without any baseline increase or separate meter because the current cost of purchasing electricity to run EVs is substantially less than the cost of purchasing the amount of gasoline required to run a gasoline-powered vehicle at equivalent use.

3. What kinds of equipment and electrical improvements will typically be needed to support residential charging for PHEVs and BEVs, e.g., EVSE's, metering, electrical system upgrades? Who should pay for residential equipment and improvements required to support PHEVs and BEVs, and why?

As an initial step, the Commission should only allow EV customers to charge off of the 110-volt circuit in order to control load in the near term as more long-term solutions are examined and implemented. If the Commission determines that residential customers should install additional equipment in order to support PHEVs and BEVs, the customer using the service should pay for all equipment and improvements in part to avoid cross subsidies. Residential EV customers could finance the cost of the equipment over more than one bill to minimize the bill impact.

5. Should the Commission consider allowing utilities to invest in and rate-base residential electric vehicle charging in order to encourage and support early adoption of PHEVs and BEVs? If so, what components of the infrastructure should the utility be authorized to invest in, e.g., wiring upgrades, EVSE? Should utility investment continue once the market matures? What impact might this have on the competitive marketplace relating to electric vehicle charging infrastructure by non-utility entities?

Early adopters of EV technology will likely be highly motivated by environmental concerns or the relative cost of electric "fuel" as compared to gasoline. As such, it is not necessary for the Commission to out of its way to create policies to encourage or promote early adopters. In addition, early installations should be limited to 110-volt circuits in order to limit loads. Such a policy would not require additional infrastructure investment.

Commercial and Public Charging Infrastructure and Policy

10. Who should pay for commercial and public meters, EVSE, and related upgrades?

Commercial and public meters should be paid for by the vendors and users of these services.

14. What issues need to be addressed related to the relationship between regulated electricity utilities and third-party electric vehicle service providers that are proposing and/or implementing charging services at residential, commercial and public locations?

One of the issues that the Commission should address is whether the utility could fairly compete with a third party electric vehicle service provider. If the Commission authorizes the utilities to enter into the business of charging services at public locations, a third-party market is unlikely to develop because the IOUs will be in a position to undercut any competitors who do not have access to rate base treatment. If the IOUs are allowed to enter the public charging market, they should not be authorized to use general ratepayer funds for charging stations.

In addition to the question of fair competition, the Commission should address issues related to facility upsizing and the installation of new equipment (e.g., line extension). The Commission should consider the questions of who will have to pay for initial facilities and upgrades, and what are the consequences of stranded equipment in the face of possible commercial enterprise failures.

Electrical System Impacts

20. What are the potential electrical distribution system impacts associated with geographically concentrated PHEV and BEV charging in the near-term? How will utilities anticipate these impacts and make capital investments needed to ensure service network reliability? How should the utility capital investments be paid for and recovered?

Ideally charging should occur during off-peak periods when there is available unused capacity on the system. Peak demand charges and/or TOU tariffs are a good first step, but because of the large incremental cost of operating a gasoline car with respect to operation of an EV, it is unlikely that a charge could be developed that would be high enough to motivate customers to only engage in off-peak charging. Despite the additional peak demand charges, the convenience of charging on-peak would trump the savings, especially when considering large difference between electric expenses for EVs and gasoline expenses for non-EVs, generally. Therefore, the Commission should combine charges or TOU tariffs with voltage limitations to minimize peak charging load (e.g., limit charging of EVs to 110-volt circuits).

21. What commercial and public infrastructure options are most likely to be deployed, e.g., Level 1 charging facilities, Level 2 charging facilities, "service station" model DC charging facilities, and/or battery swap stations? Should the Commission adopt policies to favor certain charging options taking into consideration cost-effectiveness, grid benefits, ability to meet PHEV and BEV driver charging demand, and ability to reduce BEV driver "range anxiety"?

In the near term, the Commission should encourage the adoption of PHEVs over BEVs because the gasoline engine component of PHEVs can mitigate "range anxieties" of potential EV drivers.

Tariff-related

27. How should a customer pay when charging a PHEV or BEV in another utility's service territory? Please evaluate options set forth below, or suggest alternative approaches:

While important, this is an issue that does not need to be addressed at the initial stages of this proceeding but would be more suited to Phase three. That being said, approach a, where a customer pays a posted price for electricity similar to how gasoline is purchased, would seem to make the most sense and is consistent with the current payment model for gasoline that customers are used to already. Approach b would be extraordinarily complicated and likely expensive and time consuming to implement.

29. Should the electric vehicle rate structure be designed to align rates with the system costs and benefits of PHEVs and BEVs, and if so, how? Should the Commission assign additional costs and benefits attributable to PHEVs and BEVs to specified electric vehicle rate classes or socialize the costs and benefits attributable to PHEVs and BEVs to all customer classes? Should the PHEV and BEV rate classes bear existing rate component costs?

TURN advocates a measured approach to the issue of EVs in general, and these questions do not need to be addressed at the outset. As stated above, the initial EV customer base will likely be small and the Commission could simply require these customers to be on an electric vehicle TOU rate and limited to charging from 110-volt circuits. The question of who pays for additional costs due to the increased load from EVs would not need to be addressed for some time.

As a preliminary answer to this question, however, TURN's position is that any immediate customer-specific costs should be assigned to the specific customer. As the

market matures, customer-specific costs of equipment should continue to be charged to EV users (e.g., EVSE, any additional meters, or submeters). Systemic costs, such as changes to billing systems, should be born by a specific EV rate class. Portions of common infrastructure that are installed or upgraded in whole or in part as a result of EV demand should probably be allocated appropriately to the EV customer class. Special attention should be paid to the infrastructure specifically induced by the installation of remote or high concentrations of commercial charging stations. For example, the cost of extending line specifically to serve a commercial entity needs special consideration with respect to who pays for the line extension and the prospect of stranded assets in the cases where such entities cease to operate. If the Commission follows this measured approach to dealing with the introduction of electric vehicles, it will be more likely that expensive infrastructure changes will be unnecessary until there is a large enough EV rate class to better absorb these cost increases.

As for cost components, the PHEV and BEV rate class should be required to pay for rate components that all other rate classes are required to pay such as the Public Purpose Program Surcharge and other non-bypassable surcharges.

30. Should the electric vehicle rates reflect the marginal cost of service, particularly for off-peak electricity charging and, if so, how?

Cost-based peak vs. off-peak charging rates seem appropriate here . . . . .

31. Should rate incentives be created for electric vehicles to be paired with distributed generation incentive programs, such as the California Solar Initiative (CSI) and Self-Generation Incentive Program? Should rate incentives be created for electric vehicles to be paired with demand response programs? How should these incentive programs be incorporated into electric vehicle rate structures? Who should pay for such incentives?

These issues should be addressed a much later point in this proceeding or even years from now.

32. Under what circumstances can utilities and third parties aggregate PHEV and BEV services to participate in California Independent System Operator (CAISO) ancillary service markets? What policies, if any, does the Commission need to consider in this regard?

While aggregating PHEV and BEV services to participate in CAISO ancillary service markets may be desirable, the Commission should shelve this issue for the time being and address it only once there is a large enough population of electric vehicles to make the inquiry worthwhile.

Low Carbon Fuel Standard

34. If a utility generates and sells credits under the Low Carbon Fuel Standard regulation due to customers' use of electricity as a transportation fuel, what should the utilities do with the revenue from the credits?

To the extent that any credits are generated under the Low Carbon Fuel Standard regulations, any and all revenue from such credits should be returned to ratepayers.

Programs and Incentives

36. Should utilities and/or government provide incentives that encourage customers to purchase higher-efficiency electric vehicles rather than less efficient electric vehicles, and if so, how should the incentives be structured?

While it may be advantageous for customers to purchase higher-efficiency electric vehicles, the provision of incentives to encourage such behavior is a governmental, not utility, function. The one action that utilities could take in this regard is that they could provide information to customers so they can compare the differences in costs of electricity as they pick particular models. It is unclear, however, if there is a common measure of efficiency across PHEVs and BEVs.

38. How could electric vehicle adoption impact other Commission policies and initiatives including the Renewable Portfolio Standard, the Long-Term Energy Efficiency Strategic Plan, energy efficiency goals, and zero net energy homes goals?

Electric vehicle adoption would not impact the operation of the Renewables Portfolio Standard. The increased load from electric vehicles would simply count as increased sales, which would result in higher RPS targets for the utilities.

Education and Outreach

39. What entities and programs best facilitate customer outreach and education regarding convenient and timely EVSE installation options and customer tariff education to ensure awareness of off-peak versus on-peak charging costs?

Utilities have an obligation to educate their customers about all their tariff options and this obligation does not change with the advent of new end uses or tariffs.

Scope

40. Should the Commission consider natural gas vehicles as part of this rulemaking, or consider natural gas vehicle issues through utility filed Application(s) and/or Advice Letter(s)? What are the near-term tariff, infrastructure, incentive programs or other issues that the Commission should address with respect to natural gas vehicles?

The Commission should not address national gas vehicles in this proceeding. The issue has been addressed in previous proceedings and gas utilities already have rates for the vehicular use of gas. Furthermore, the issues that must be addressed to incorporate electric vehicles are completely different from the issues related to natural gas vehicles.

October 5, 2009

Respectfully submitted,

/S/

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CERTIFICATE OF SERVICE

I, Larry Wong, certify under penalty of perjury under the laws of the State of California that the following is true and correct:

On October 5, 2009 I served the attached:

COMMENTS OF THE UTILITY REFORM NETWORK ON THE COMMISSION'S ORDER INSTITUTING RULEMAKING TO CONSIDER ALTERNATIVE-FUELED VEHICLE TARIFFS, INFRASTRUCTURE AND POLICIES TO SUPPORT CALIFORNIA'S GREENHOUSE GAS EMISSIONS REDUCTIONS GOALS

on all eligible parties on the attached lists **R. 09-08-009** by sending said document by electronic mail to each of the parties via electronic mail, as reflected on the attached Service List.

Executed this October 5, 2009, at San Francisco, California.

/S/
Larry Wong

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