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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to Consider Alternative-Fueled Vehicle Tariffs, Infrastructure and Policies to Support California's Greenhouse Gas Emission Reduction Goals	Rulemaking 09-08-009

COMMENTS OF MITSUBISHI MOTORS R&D OF AMERICA

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I. Introduction

Mitsubishi Motors R&D of America ("MRDA") thanks the California Public Utilities Commission ("Commission") for the opportunity to review and comment on the August 24, 2009, Order Instituting Rulemaking To Consider Alternative-Fueled Vehicle Tariffs, Infrastructure and Policies to Support California's Greenhouse Gas Emissions Reductions Goals.

As an Automotive Manufacturer, we have very limited expertise on specific electric utility regulatory issues, therefore, we will limit our comments to matters which we have direct experience.

As you know, Mitsubishi Motors Corporation has successfully launched the first mass-produced advanced Li-Ion powered vehicle, the "i-MiEV" in Japan. This experience has educated us on the specific measures necessary to support the introduction of electric vehicles ("EVs"). These are:

1. Incentives
2. Infrastructure
3. Public Education.

Every new technology faces the same challenge -- how to take an expensive, low volume concept and create a mature, low cost production process. The EV, with its advanced battery and propulsion systems, must compete directly against the product the defined mass-production, the internal combustion automobile (ICE). At this time, the environmental advantages of electric-drive transportation are not assigned a discrete value for the consumer and therefore, price comparison of EVs and ICEs is still "apples and oranges". To indicate the value to society, the government and other organizations can incentivitize EVs to provide a monetary value for the environmental benefits of EVs. This will help broaden and mature the market leading to future component cost reductions and lower EV prices.

Infrastructure is the key activity that the Commission can support. Two actions are needed:

1. Establish a low cost and prompt method to install Level 2 Electric Vehicle Supply Equipment ("EVSE") at the location where vehicles are stored overnight. This allows the vehicles to fully utilize the excess night-time generation capacity and available renewable energy.
2. Support the construction of a Level 3 "Quickcharge" system to allow reduced battery pack sizes. Nearly all consumers will be satisfied with 50 to 100 miles of range per charge and Automakers can reduce vehicle weight and cost by significantly reducing battery size. To allow customers to temporarily extend their range, a reasonable network of Level 3 Quickchargers should be provided.

Finally, all the actions are useless if the public is not aware. Therefore, a broad partnership of all stakeholders is necessary to educate the public.

II. Specific Comments in Response to "5.1 Questions"

Residential Charging Infrastructure and Policy

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? The residential metering arrangements need to be compliant with the Air Resources Board's ("ARB") Low Carbon Fuel Standard ("LCFS") requirements to allow the utility to gain the applicable credits available for the fueling of the EV.

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? Since the utilities will gain valuable credits from the sale of electricity to plug-in electric vehicles ("PEVs"), utilities should pay for the residential equipment and improvements necessary.

4. What policies should the Commission adopt to encourage competition and innovation in the market for residential infrastructure development for PHEV and BEVs? Set performance based standards to require appropriate efficiency and safety requirements and allow each utility to create the most cost effective solution.

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? Yes, utilizes should be allowed to invest in and rate-base residential EV charging, but the purpose is to create an electric fueling infrastructure to reduce petroleum usage. This should be permanent. The utilities should be allowed to supply any and/or all components required.

Please define a "mature market" in your response. For example, "mass-market" could mean electric vehicles sold after 100,000 or another milestone figure of electric vehicles are registered in California markets. A mature market is the yet to be determined volume which vehicle component prices reach a stable minimum value.

6. If a utility proposes to own customer-premises EVSE's, how will the Commission ensure that near-term EVSE and metering capital investments are interoperable with future generations of PHEV and BEV technology? Allow the utility to determine the most cost-effective solution.

7. What approaches are there to provide PHEV and BEV charging for owners who do not have regular access to a garage for residential recharging (including single family dwellings and multiple dwelling units (MDUs) like apartments, condominiums, and duplexes)? What regulatory issues does the Commission need to address relative to infrastructure for such residents? Make provisions to allow Level 1, 2 and 3 EV charging to be metered gaining the EV fueling credits. From our experience in Japan, Level 3 charging, especially in valet parking facilities, can be efficiently used off-peak to recharge numerous vehicles – therefore, an utility should be able to invest in such a charger and gain credits for the EVs it supplies.

8. How can the Commission, in coordination with utilities, relevant state agencies, federal authorities, local governments, and other entities, streamline EVSE permitting, installation, and approval processes from the time of PHEV and BEV purchase to EVSE activation? What jurisdictional barriers should be assessed to achieve a streamlined permitting, installation, and activation process for residential EVSE? We don't have any unique ideas of how to accomplish this task – we just hope it is successful.

Commercial and Public Charging Infrastructure and Policy

9*. How should electricity used for PHEVs and BEVs be metered at commercial and public charging facilities?* The commercial and public charging metering arrangements need to be compliant with the ARB's LCFS requirements to allow the utility to gain the applicable credits available for the fueling of the EVs.

10. Who should pay for commercial and public meters, EVSE, and related upgrades? Since the utilities will gain valuable credits from the sale of electricity to PEV's, utilities should pay for the equipment and improvements necessary.

Codes and Standards

17. Please identify current and pending Society of Automotive Engineers vehicle design and interface technical requirements, the Underwriters Laboratory listed components and systems, and the National Electric Code, California Electric Code, and California Building Code Regulations that govern the installation, operation, and maintenance of charging infrastructure at the residential, commercial, and public charging EVSE. How does the timeframe for each code and standard adoption impact current and future vehicle and EVSE products? What role, if any, can the Commission play in improving or encouraging this process? SAE J1772 addresses the vehicle to EVSE coupler for Level 2 and Level 3 charging. J1772 for Level 2 is nearly completion and J1172 for Level 3 is just starting. The Commission can support demonstration project to show the benefits of Level 3 charging network which should encourage the participation of Automakers in the Level 3 process.

18. How important is consumer choice as to Charging Levels ((Level 1, 2 or DC)? If important, how may the Commission best balance driver and grid benefits for all residential, commercial, and public charging infrastructure? At this time, consumer choice is vitally important – no one conclusively knows how the "average" customer will routinely charge their EVs. Provide the consumer value based on the value of the grid benefits and the LCFS credits generated.

19. What role can the Commission play to ensure EVSE compatibility with a unified EVSE conductive charge coupler standard (J1772) for all residential, commercial, and public charging EVSE within regulated utility service territories? What role can the Commission play to ensure that EVSE be forward compatible with emerging Society of Automotive Engineers loads, messages, and programs communication standards (J2293, J2836, and J2847)? Allow the utilities to select the most cost efficient solutions – if all the new communications standards are valuable for energy efficiency, grid benefits or LCFS credit generation, and the utilities will implement the appropriate technologies.

Electrical System Impacts

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"? At this point, Mitsubishi Motors believes the most cost effective commercial/public charging infrastructure is the Level 3 DC Quickcharging. Using the maximum cycle time of 30 minutes, a fully utilized unit can charge up to 48 vehicles per day. Because the vehicles are not stored at the charger unit, the chargers can be located based on minimizing conduit/installation costs.

Quickcharging is shown by Japanese study data to reduce "range anxiety" – even a 10 minute charge can supply nearly 40 miles of range.

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:
a. A customer pays a posted price for electricity to a specific electric charging provider at the time of the transaction, similar to how gasoline is purchased.
b. The second utility bills the customer's home utility and the home utility adds the electric vehicle electricity cost to the customers' energy bill. A third-party clearing house could facilitate these transactions.
d. A customer has a relationship with a third party charging provider and pays that third party wherever the customer charges.
e. A customer has a choice of all or some of the above options. e. allow the market to determine the best solution.

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? Since the environmental benefits of EVs will benefit all Californians, the costs and benefits should be socialized across all customer classes.

Low Carbon Fuel Standard

33. What recommendations, if any, should the Commission make to the California Air Resources Board regarding the treatment of electricity under the Low Carbon Fuel Standard? Allow the credits generated by the utility be transferable to the utilities' stationary source compliance.

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? Use them to pay for the EVSE and associated infrastructure costs.

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? Not at this time.

37. How should the Commission ensure that any policies developed related to electric vehicles provide a level playing field for transportation fuels and technologies? Through cost/benefit analysis based on ACCURATE life-cycle GHG values.

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? We suggest addressing NGVs under a separate rulemaking. The issues affecting EVs are significantly different from NGVs and should be addressed independently.

41. Should the Commission consider medium-duty electric vehicles, heavy-duty electric vehicles, and off-road electric vehicles as part of this rulemaking? If so, what issues specific to these vehicles should the Commission consider? The Commission should consider that many issues for these other classification of EVs are similar to light duty vehicles. If significant differences are identified, those vehicle classes should be addressed separately.

III. Conclusion

Mitsubishi Motors welcomes the opportunity to work with the Commission and other stakeholders to shape and define the future of Electric Drive Transportation. We believe that if implemented properly, EVs can produce immense benefits for both California residents and ratepayers. Mitsubishi Motors R&D of America looks forward to working with the Commission in the near future to address and resolve key challenges facing EVs and the electrical infrastructure.

Sincerely,

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Mitsubishi Motors R&D of America

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of "COMMENTS OF MITSUBISHI MOTORS R&D OF AMERICA" on all known parties to Rulemaking 09-08-009 by transmitting an e-mail message with the document attached to each person named in the official service list or mailing a copy to each party named in the service list without an email address.

I certify and declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on October 26, 2009 at Cypress, California.

David N. Patterson

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