DOCKETED	
Docket Number:	24-FDAS-04
Project Title:	Flexible Demand Appliance Standards for Electric Vehicle Supply Equipment
TN #:	260779
Document Title:	Elisia Hoffman Comments - Electrify America Comments to the CEC's RFI Flexible Demand and Load Shifting for EVSE Equipment in California
Description:	N/A
Filer:	System
Organization:	Elisia Hoffman
Submitter Role:	Intervenor
Submission Date:	12/20/2024 4:38:27 PM
Docketed Date:	12/20/2024

Comment Received From: Elisia Hoffman
Submitted On: 12/20/2024
Docket Number: 24-FDAS-04

Electrify America Comments to the CEC's RFI Flexible Demand and Load Shifting for EVSE Equipment in California

Additional submitted attachment is included below.

December 20, 2024

California Energy Division
715 P Street
Sacramento, CA 95814

RE: Electrify America Responses to the California Energy Commission's Request for Information (RFI) Flexible Demand and Load Shifting for Electric Vehicle Support Equipment in California (#24-FDAS-04)

Dear Staff,

Electrify America appreciates the opportunity to provide feedback on the California Energy Commission's (CEC) Request for Information (RFI) on Flexible Demand and Load Shifting for Electric Vehicle Support Equipment (EVSE). Electrify America is the nation's largest open network of DC fast chargers for electric vehicles (EVs), with over 4,250 fast chargers across more than 950 locations in North America, including over 1,190 chargers across more than 260 locations open to the public in California. Electrify America is committed to building a future where EV charging is approachable, accessible, and powered by a network drivers can depend on.

Electrify America submits the following answers to specific questions in the RFI. We look forward to working with CEC staff on this opportunity to understand flexible load demand and load shifting for EVSEs.

5. What software and hardware capabilities could enable public EVSEs to relieve/eliminate grid congestion at the Distribution (referring to Transmission and Distribution, T&D, for the grid) level? What control strategies are available to the grid operator and/or load aggregator to shift and/or curtail demand from EVSEs at the Distribution level to maintain grid reliability?

To efficiently manage grid signals, they must be received by an aggregator, processed, and then transmitted to individual EVSEs, a centralized controller, or via the operator's backend. This process requires seamless communication between the utility and the aggregator, as well as between the aggregator and the operator. Control strategies may include leveraging energy storage to shift or curtail demand such that the end-user charging experience is not impacted.

9. How can medium-duty and heavy-duty (MDHD) EVs and their EVSE fit into the CEC's goal of load shifting to avoid GHG emissions?

Charging medium-duty and heavy-duty (MDHD) EVs during long-haul operations typically requires instant recharging during brief stops, offering limited opportunities for load shifting. However, overnight recharging presents an excellent opportunity to optimize charging schedules, allowing for significant load shifting, as long as the truck is fully charged by morning.
In contrast, short-haul operations, depending on the schedule, provide more flexibility with longer recharging windows before the next driving cycle. These trucks can delay charging, if necessary, in response to grid demands.

12. What are the charging practices for commercial fleets? Bus fleets? Overnight depot level charging? What power levels? How is the charging of the fleet managed? Manually rotated? Management software?

Intelligent load management represents the state-of-the-art approach for DC fast charging of commercial fleets overnight. This system ensures that each vehicle is fully charged by its scheduled departure time, while maintaining a steady load to prevent demand spikes and minimize associated demand charges. The departure time can either be the same for all vehicles or individually scheduled by the fleet operator.

There are two primary methods for load management:
1) Load management by the EVSE: In this approach, the EVSE adjusts the charging power as needed, curtailing it to ensure the load remains stable.
2) Load management by the EV: Here, the EV manages the charging process, either delaying the start of charging or reducing the charging power to align with load requirements.

13.Which communication protocols or components of existing communication protocols are used to enable load shifting capabilities for EVs and EVSE? What is the implementation status of these communication protocols? Are industry-wide standard communications and control protocols currently in use or planned? Are there remaining gaps to enabling load shifting capabilities?

Open Charge Point Protocol (OCPP) is the most used open communication standard between the EVSEs and a central aggregator. Using OCPP, charge point operators can manage and limit the charging power supplied by the EVSEs.

The EV communicates with the EVSE via DIN SPEC 70121 and ISO 15118 protocols. However, one challenge in optimizing load management is that these communication standards do not provide the EVSE with real-time information on the power the vehicle would ideally request. Instead, the EV only requests up to the maximum power the EVSEs "offers" at any given moment. As a result, the EVSE is unaware of the actual load management severity taking place, which makes it difficult to assess the real-time effectiveness of load management or its impact on the customer. While this gap does not prevent load management, it complicates the ability to tangibly evaluate its efficiency and outcomes.

15. Can a load shift program work with EVSEs/EVs responding to generic signals, or must signals be tailored for each EVSE/EV?

A direct response from a single EVSE to generic utility signals is not feasible within the current communication architecture and would have limited impact, given the small scale of a single unit. However, an aggregator can receive grid signals, process them, and then relay tailored commands to individual EVSEs, a centralized site controller, or the operator's backend depending on specific customer and vehicle needs.

The main challenge with public EV charging lies in the unpredictable nature of EV charging behavior. Vehicles may begin charging unexpectedly, making it difficult to guarantee that a specific load can be reduced at any given time without unacceptably compromising the customer experience.

18. Please discuss strategies for EVSE to best utilize the CEC's Market Informed Demand Automation Server (MIDAS) which provides access to utilities' time-varying rates, GHG emission signals, and California Independent System Operator (California ISO) Flex Alerts?

Most businesses operate based on financial signals, including utilities' time-varying rates and demand response programs that provide monetization opportunities, including the Emergency Load Reduction Program (ELRP) and the Demand Side Grid Support Program (DSGS). To the extent California ISO Flex Alerts are already not being sufficiently included in demand response, ELRP, or DSGS signals that provide monetization opportunities, that could be improved, as well as a monetization pathway for the GHG signal such that the MIDAS information accurately reflects in aggregate the financial incentive to respond.

Conclusion

Electrify America commends the CEC on its significant statewide goal to support 7,000 MW of load shifting capability statewide by 2030. Should there be any questions, please do not hesitate to contact me.

Sincerely,
/s/

Elisia Hoffman
State and Public Policy Affairs Lead, Government Affairs
Electrify America, LLC
Elisia.hoffman@electrifyamerica.com