DOCKETED	
Docket Number:	24-FDAS-04
Project Title:	Flexible Demand Appliance Standards for Electric Vehicle Supply Equipment
TN #:	260705
Document Title:	Joint Community Choice Aggregators Comments - Joint CCA Response to a RFI to Inform the Development of a Potential FDAS for EVSE
Description:	N/A
Filer:	System
Organization:	Joint Community Choice Aggregators
Submitter Role:	Public
Submission Date:	12/18/2024 11:32:30 AM
Docketed Date:	12/18/2024

Comment Received From: Joint Community Choice Aggregators
Submitted On: 12/18/2024
Docket Number: 24-FDAS-04

Joint CCA Response to a RFI to Inform the Development of a Potential FDAS for EVSE

Additional submitted attachment is included below.

December 18, 2024

California Energy Commission
Docket Unit
715 P Street
Sacramento, CA 95814-5512

Re: Joint CCA Response to Request for Information to Inform the Development of a Potential Flexible Demand Appliance Standard (FDAS) for Electric Vehicle Supply Equipment (24-FDAS-04)

Dear Commissioners and Staff,

This letter serves as the response of Peninsula Clean Energy Authority (PCE), Ava Community Energy (Ava), the City of San José – which operates and administers San José Clean Energy (SJCE) through the City's Community Energy Department, MCE, and Redwood Coast Energy Authority (RCEA), collectively referred to herein as the Joint Community Choice Aggregators (Joint CCAs), in response to the California Energy Commission Request for Information (RFI) on Potential Flexible Demand Appliance Standards (FDAS) for electric vehicle supply equipment (EVSE).

The Joint CCAs, as the default Load Serving Entities (LSE) in our respective service territories and local public agencies, are tasked with reducing the GHG emissions associated with the electricity used by the communities we serve while also remaining vigilant to the cost of electricity and its impact on our customers. The Joint CCAs make significant investments in their communities to expand access to sustainable and affordable energy solutions. These priorities lend themselves to a shared transportation electrification (TE) philosophy that centers around broad access to TE solutions, especially for those facing significant barriers to EV adoption, while minimizing the cost to adopt TE technologies. The Joint CCAs also administer various self-funded demand response and daily load shifting programs to minimize grid impacts and save customers money. And the Joint CCAs are actively engaged in the State of California's exploration of flexible demand and the various potential benefits it may provide such as encourage efficient use of energy at off-peak hours, improve the reliability of the electric system, mitigate the need for new electrical capacity investments, and reduce greenhouse gas emissions and fossil fuel consumption.

The Joint CCAs respectfully submit the following comments to the California Energy Commission (CEC).

- The CEC should continue to be mindful throughout this potential rulemaking that California is far behind on its electric vehicle (EV) charger deployment targets and evaluate the potential of the new FDAS to further slow deployment.
- Nonnetworked Level 1 and low-power Level 2 charging are valuable options for enabling broader EV adoption and should not be inadvertently prohibited in California due to the new FDAS the CEC is considering.
- EV fleets, both light-duty (LD) and medium-duty and heavy-duty (MDHD) present a substantial opportunity for EV load shifting and several advantages over residential LD EVs that the CEC should consider when deciding which EVSE technologies and use cases should be prioritized when developing potential FDAS.

California is Behind on Its EV Charger Targets and The Market Will Likely Face New Challenges in The Coming Years

While the Joint CCAs acknowledge the value potential of the new flexible demand resources that may result from the implementation of EVSE FDAS, the Joint CCAs also note that California is not on track to deploy the number of EV chargers needed to support the State's EV adoption targets. As such, the development of the FDAS should be pursued in parallel with continuing efforts to install more EVSE to enable Californians to make the switch to electric vehicles so that the State can meet its climate goals.

California has made tremendous progress in fostering the EV charging landscape that we see today, and various programs and funding administered by the CEC have played no small part in that achievement. Yet, it is critical to also acknowledge that California has a long way to go and needs to deploy charging infrastructure at a faster rate than ever before in order to meet our targets. The Joint CCAs appreciate that the RFI notes California's substantial EV charger targets as outlined in the CEC's AB 2127 reports.[1] The most recent AB 2127 finds that, "1.01 million public and shared private chargers are needed to support 7.1 million passenger plug-in electric vehicles in 2030, and 2.11 million public and shared private chargers are needed to support 15.2 million passenger plug-in electric vehicles in 2035."[2] And the most recent estimates are that California has only installed 150,000 chargers, or 14% of the number needed to meet the 2030 target.[3] This means that in order to meet the 2030 target, California will need to install roughly 170,000 chargers in 2025, more than have

---

[1] California Energy Commission, *Request for Information: Flexible Demand and Load Shifting in California for Electric Vehicle Support Equipment*, "AB 2127 projects a need for 2.1M public and private shared electric vehicle chargers to support 15.2M light duty electric vehicles as well as 264,500 depot and en route electric vehicle chargers for 377,000 medium and heavy duty electric vehicles by 2035," p11.

[2] Davis, Adam, Tiffany Hoang, Thanh Lopez, Jeffrey Lu, Taylor Nguyen, Bob Nolty, Larry Rillera, Dustin Schell, Micah Wofford. 2023. *Assembly Bill 2127 Second Electric Vehicle Charging Infrastructure Assessment: Assessing Charging Needs to Support Zero-Emission Vehicles in 2030 and 2035.* California Energy Commission. Publication Number: CEC-600-2024-003-CMR

[3] California Energy Commission, "Electric Vehicle Chargers in California," https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics-collection/electric. Accessed December 18, 2024. The most recent dashboard data estimates 150K chargers public and shared private chargers have been installed in California.

been installed to date, and then repeat that achievement during each of the following four years. After 2030, the rate of EV charger deployment will need to increase further to 220,000 a year to meet the 2035 goals.

The Joint CCAs recognize that the AB 2127 goals are, appropriately, aspirational and if California tries and fails to meet these targets, the State will still have made significant progress towards electrifying its vehicle population. It is important that California strive to maintain progress considering the challenges that will be faced in the coming years. The incoming Federal Administration officials have stated that they plan to alter or rescind the federal EV tax credits as well as impose new import tariffs that will likely impact many aspects of the EV market including vehicles and EV chargers. California also cannot bank on new sources of funding for EV infrastructure from the new administration. Simultaneously, the State of California continues to operate in a deficit environment. So while the Governor's Office has made clear its intentions to create a state incentive if the federal EV tax credit is abolished, there is only so much capacity in the state budget and the financial realities the state faces will make it difficult to craft new sources of funding to support EVSE deployment.

EVSE FDAS Should Not Preclude the Use of Nonnetworked Chargers

There are many use cases where nonnetworked chargers function as critical tools in encouraging broader EV adoption due to their lower cost compared to standard charging equipment. This is especially true for multi-family residences (MFR) that have historically been underserved by many charging incentive programs. Some of the primary reasons are that many CEC incentive programs have only incentivized standard 7 kW Level 2 (L2) chargers, leading the projects to be overly complex and expensive. Due to the cost, MFR projects will often only result in only a small number of L2 charging ports, far fewer than the number of residential units on the property. This forces any resident considering adopting EV technology to consider the need to coordinate with their neighbors to ensure they can charge their vehicle at home, not unlike the shared use of limited laundry machines. Some incentive programs even expressly prohibit incentive support for MFR chargers that are not shared among the residents, leading to less optimal outcomes for residents. While L2 is certainly not an unreasonable option for many MFR projects, the reality is that deploying large numbers of L2 chargers can quickly add complication and expense for all parties involved, including the possibility of service and grid upgrades; the costs of which would be then borne by all of the IOU's ratepayers. Deploying charging at scale at MFR is critical to ensuring that all Californians have equitable access to participate as the state continues its shift towards EVs.

PCE's EV Ready[4] program supports MFRs by using a "right-sizing" design philosophy, and incentivizes the installation of charging equipment that meets EV driver needs without overbuilding. This approach reduces project costs, avoids service and grid upgrades, and provides design assistance to maximize charger access for residents within a limited budget. Level 1 (L1) and low-power (20A) Level 2 (LPL2) charging outlets are a critical component to the success of many EV Ready projects.

[4] *See* https://www.peninsulacleanenergy.com/ev-ready/

Analyses by PCE and others demonstrate that these equipment types can meet the daily driving needs of over 90% of EV drivers.[5] L1 and LPL2 are scalable solutions that cost a fraction of the price of other LD EV charging types and provide EV charging options to power-constrained properties, ultimately allowing PCE to minimize the out-of-pocket costs for MFR property owners.[6] So far, PCE's self-funded program has incentivized the installation of nearly 1,500 EV chargers in PCE's service area**,** two thirds of which have been installed at MFRs such as apartments and condominiums, with another 3,000 that are in process. EV Ready also has an average program cost of $5,000 per charger, several times less costly than similar programs that support LD and multi-family charging.

When compared to the traditional full power 7kW L2 alternatives, both nonnetworked and networked L1 and LPL2 can contribute to the goals of the FDAS because these charging methods are inherently more grid friendly, providing a less peak-intensive charge over several hours. The RFI states that the goal is multi-faceted and must "enable shifting the time and rate of vehicle charging to enhance grid reliability, lower GHG emissions, and save consumers money." L1 and LPL2 shift charging events from narrow, more peak-intensive Level 2 charge of a couple of hours, to smoother, less-peak intensive charge of 4-10 hours, flattening the charging load and limiting contributions to periods of grid stress, particularly in residential settings where charging is expected overnight. By design, they also reduce the rate of charging from 7 kW to around 2-3 kW, reducing any coincident peak contributions or stress on the local grid. Beyond limiting EV charging contributing to peak events, they also enhance grid reliability by minimizing the need for service and grid upgrades to serve the new charging equipment. This enables utilities to spend limited distribution upgrade funding on other projects to shore up grid reliability. The lower cost of L1 and LPL2 also reduces a major barrier to entry for potential new EV drivers living in MFRs and elsewhere, allowing them to more easily switch from internal combustion engine (ICE) vehicles and reduce their GHG transportation emissions. Finally, L1 and LPL2 equipment save consumers money. They provide charging access while being several times less expensive than other long-dwell LD technologies, and due to their impacts on the IOU's cost of service, they help minimize grid operator costs to energize and serve the EVSE. Each time an EV charging project can avoid a service or grid upgrade, customers benefit as the significant front of the meter infrastructure costs will be avoided and not be borne by ratepayers. Avoiding this source of upward rate pressure helps ensure that EV drivers save money on the operating cost of their vehicle when they switch from an ICE to an EV.

There are other use cases where nonnetworked chargers should continue to be available, such as those in rural areas of the state where there are limited benefits to installing equipment with the networking capabilities that would be needed to comply with FDAS. Some CCAs, such as Redwood Coast Energy Authority and Sonoma Clean Power, have service areas that include very rural parts of the state. They have had experiences with their community that indicate that it would be challenging for some EV drivers to save money via participating in a flexible demand program. These drivers live

---

[5] *See* https://www.peninsulacleanenergy.com/wp-content/uploads/2021/09/Determining-the-Appropriate-Level-of-Power-Sharing-for-EV-Charging-in-Multifamily-Properties.pdf; https://insideevs.com/news/709425/recurrent-ev-driving-distance-america/

[6] *See* https://www.canarymedia.com/articles/ev-charging/access-to-slow-ev-chargers-could-speed-up-ev-adoption-among-renters

completely off-grid or are at the grid-fringe and face considerable reliability issues. Therefore while these EV drivers would inherently reduce their emissions by operating an EV rather than an ICE, they would either be completely unable to participate in a flexible demand program as any load shifting would not provide benefits to the larger grid, or the reliability of their service may be so poor that they would understandably be hesitant to respond to a demand flexibility event for fear that their power may go out anyway, leaving them unable to charge their vehicle. In such cases, operating an FDAS-compliant charger would provide minimal benefit at best. These EV drivers should not be forced to buy such EVSE if FDAS compliance increases the cost of EVSE equipment or software, as the RFI is seeking to understand.

The Joint CCAs agree with the stated goals of the FDAS and believe there is an opportunity through any potential rulemaking to enable sizable shifting of EV demand. However, the Joint CCAs also encourage the CEC to ensure that any potential rulemaking avoids prohibiting the sale of nonnetworked EVSE and thereby inadvertently and unnecessarily make certain EVSE project types more expensive.

EV Fleets are Likely to Present the Greatest FDAS Opportunity, Dependent Upon Specific Fleet Characteristics

The Joint CCAs support the CEC's exploration of FDAS for EVSEs that serve both LD and MDHD fleets, as the Joint CCAs believe that they present the greatest opportunity for shifting load. As the RFI states, the primary intent of the FDAS is to enable load shifting to enhance grid reliability, lower GHG emissions, and save consumers money. EV fleet resources, especially when aggregated, have the potential to provide a sizable resource for the purposes of shifting demand on a system level, and in the case of fleets located on nearby circuits, shifting demand in specific load pockets. Additionally, fleet managers, as compared to typical residential EV drivers, would be more likely to appreciate the cost savings potential of a flexible demand program and respond more reliably to price signals. Additionally, per customer touch point, enrolling a fleet in a program inherently provides a much larger demand resource as compared to residential EV drivers. However, EV fleets are mostly still nascent in California, so the amount of flexible demand they could provide today is not reflective of their future potential. Further, as articulated further below, MD and HD fleets would need to exhibit certain characteristics to ensure that participation in such a program, and reliably responding to price signals, would be even feasible.

Direct Responses to RFI Questions

1. **Please provide information to assist the CEC in determining whether the scope of devices in Table 1 meets the needs of FDAS or if the CEC needs to consider revisions to the scope.**

Table 1: Examples of In and Out-of-Scope Electric Vehicle Supply Equipment

Potential In-Scope Devices	Potential Out-of-Scope Devices
▪Level 1 Electric Vehicle Supply Equipment ▪Level 2 Electric Vehicle Supply Equipment ▪DC-output Electric Vehicle Supply Equipment ▪Wireless Electric Vehicle Supply Equipment ▪Medium voltage AC input supply Electric Vehicle Supply Equipment ▪Power electronic components inside the vehicle	▪Pantograph Electric Vehicle Supply Equipment ▪Equipment with an automated connection system

Source: California Energy Commission

As stated above, the Joint CCAs caution the CEC against developing an FDAS that may inadvertently preclude the sale of nonnetworked EVSE that lack communication connectivity. Any FDAS-compliant EVSE will need to have communication capabilities built in to receive signals from the grid or a third party to enable dynamic load shifting. However, the Joint CCAs strongly believe that certain EVSE types without connectivity capabilities, such as nonnetworked L1 and low-power L2 outlets and some L2 chargers, should not be required to comply with any potential FDAS.

The Joint CCAs also support the exploration of FDAS for EV on-board charging equipment and telematics.

2. **What is the current landscape of options for charging schedules that prioritize the driver experience, emissions reductions, financial savings, and/or other factors? Please provide information or data on customer receptiveness to various charging schedules, such as charge immediately, charge by departure, etc. and the entity who possesses such information.**

3. **Please comment on the various EVs or EVSE consumer charging preferences such as charge immediately or "charge by departure", where the EV is charged to a specified percentage with a set time to be ready.**
    a. **How does using charge strategy balance factors as battery life, price, etc.?**
    b. **What consumer data is available that provides customer charging habits such as: demographics and population percentages that prefer to charge at home, at work, or in public shared spaces? What times of day?**
    c. **What charger types are typically used?**
    d. **How do charging patterns change as EV owners gain experience with their vehicle?**
    e. **What percentage of battery capacity is typically charged per session?**

f. **How is this behavior expected to change as ownership of EVs expands beyond the early adopters?**

4. **When will DC charging equipment be available for residential installation? What are the expected use cases, penetration, price range and power level of DC equipment used in the residential sector? Would certain DC chargers installed at private residences require a Battery Energy Storage System to manage peak load?**

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?**

6. **Similarly, what software and hardware capabilities are best suited enable residential EVSEs to relieve grid congestion at the Distribution level? What control strategies can be deployed by the grid operator and/or load aggregator to shift and/or curtail demand from residential EVSEs at the Distribution level support grid reliability?**

As mentioned above, L1 and LPL2 already relieve congestion at the distribution level, through passive load shaping, without the need for additional controls and platforms whose costs are unknown.

As for actively managed EVSE, relieving grid congestion at the distribution level requires inputs from the distribution grid. This currently would require either the grid operator to send signals to the devices and control them directly, or that the grid operator make these inputs available to a third-party load aggregator in real time. Currently, CCAs are not able to access the data needed to send these signals. However, the Joint CCAs are engaging in efforts to increase distribution level data availability for CCAs so that they may create innovative offerings to support distribution grid reliability.

7. **What hardware and software are needed on the EV's Onboard Charging System to enable load shifting? What percentage of EVs currently receive grid signals (e.g., electricity prices, GHG emissions and California Independent System Operator Flex Alerts) to schedule load shifting, demand response, and/or bi-directional charging? What percentage of EVs require the EVSE to receive grid signals to schedule load shifting, demand response, and/or bi-directional charging? What are the most common methods for communicating signals to EVSEs and EVs (e.g. Ethernet, Wi-Fi, Cellular, AM/FM broadcast)?**

8. **(Focused on EV manufacturers) Is the EV telematics system used to receive grid signals (e.g., electricity prices, GHG emissions, and California Independent System**

Operator Flex Alerts) and schedule charging in response to those grid signals? If so, what is the monthly cost charged to the customer for these capabilities?

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?**

As stated above, the CCAs would encourage the CEC to focus its efforts on MDHD fleets as they are best positioned to serve as large, reliable, flexible demand resources to shift EV load and avoid GHG emissions.

However, the potential for load shifting for MDHD EVs is very dependent on the particular use case, and the CEC should evaluate how equitably the benefits of any load shifting could be distributed among enrolled customers to ensure that MDHD fleets would want to participate. There are certain use cases where there could be mutual benefit to the grid and to the MDHD fleet operator, such as MDHD EV fleets that are stationary for multiple consecutive hours in any 24-hour period. If fleet operational needs allow, a flexible demand program that encourages shifting charging to the daytime (to capture excess solar generation) and in the evening or overnight (to allow for the discharge of batteries either during peak hours or more carbon intense nighttime hours) could provide the greatest benefit. However, the operational needs of all MDHD use cases are not the same. For some, it would be infeasible to participate in a flexible demand program of this design, such as HD EVs used for drayage or long-haul shipping.

10. **Should the scope of this regulation include load shifting criteria for EVs such as forklifts, boats, and other off-road vehicles? Do off-road vehicles typically have a defined use-cycle that fits the need for load shifting? If so, which types of off-road vehicles? Please provide off-road EV counts, types of EVSE for off-road EVs, and charging strategies for off-road EVs.**

11. **There are currently some buses that use wireless charging to top off batteries at bus stops. What are other applicable uses for wireless charging, and is wireless? If so, when is wireless charging expected to be more widely available?**

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?**

While MDHD EV fleets are few and far between today, the following are general charging practices for buses, medium-duty vehicles (MDVs), and heavy-duty vehicles (HDVs). It is important to note that MDHD EV fleets can vary widely in their operational needs, charging patterns, and other characteristics. When designing programs that utilize the FDAS, these variations will need to be accounted for to ensure that fleet managers will want to participate.

Buses, particularly school buses, are the best fit today given a few key characteristics. Their consistent day-to-day operational schedules as well as reduced use during summer months mean there are long time periods where they could function simply as aggregated grid batteries. These vehicle types and their usage characteristics also present considerable opportunities for testing of V2G technologies, with some initiatives already in deployment (for example, PG&E's collaboration with Zum and Oakland Unified School District[7]). For these reasons, the Joint CCAs believe bus fleets present the clearest near-term opportunity for FDAS regulations.

There is also opportunity for MDVs, to the extent that (1) the entire MDV fleet domiciles in the same location, (2) the fleet operator also owns the facility at which they domicile vehicles and/or the property owner is willing to install EVSE, and (3) the MDV fleet's operational needs allow for multiple consecutive hours when they are stationary and not in use. It is difficult to determine whether a specific fleet has all of these necessary characteristics prior to direct customer engagement, such as through targeted marketing. As such, it is currently unknown how much of the MDV fleet market may be willing or able to participate.

To enable HDV fleet participation, fleets must meet the same 3 conditions above. It is possible that regional HDV fleets with very set routes and schedules may be able to participate, though the Joint CCAs aren't currently aware of HDV fleets that would fit that profile. And as stated elsewhere in this response, any HDVs engaged in drayage or long-haul would typically not be a good fit as the dwell location and dwell time are both constantly in flux, limiting the resources these fleets can provide for grid reliability and making it difficult for fleet managers to plan to participate in a flexible demand program.

There are several other potential complications to MDHD EV fleet participation in flexible demand programs that the CEC should consider.

- Additional complexity is introduced for any vehicles with transport refrigeration units (TRUs), as TRUs require additional power from the onboard battery. This creates competing needs between maximizing battery for driving range vs. keeping goods cold and increasing size of batteries to accommodate greater electric demand onboard vs. reducing weight of the onboard battery to allow more capacity for goods.
- MDHD EVs have some unique AC vs. DC onboard rectifiers due to industry needs. MDVs are more likely to have onboard chargers (AC-to-DC rectifiers) than HDVs, due to lower energy needs and less stringent space and weight constraints.

The North American Council on Freight Efficiency is also a useful resource for MDHD fleet industry information.[8]

13. **Which communication protocols or components of existing communication protocols are used to enable load shifting capabilities for EVs and EVSE? What is**

---

[7] *See* https://www.pge.com/en/newsroom/currents/future-of-energy/articles-4040-pge-helps-zum-deploy-nations-100-electric-school-bus-fleet-oakland-new-school-year.html

[8] *See* https://nacfe.org/

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?

14. **Does data exist on the effect of bidirectional charging on EV battery life? How is battery capacity affected by the frequency and level of bidirectional charging (for example, power level, total energy discharge, and so on)? Does this affect the warranties or insurance of the EV owner? If so, can the loss in value, if any, be quantified over the life of the battery?**

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

16. **What data or information is needed from the EV and/or EVSE to enable load shift while ensuring driver mobility and range needs are not compromised (for example, kWh needed by the vehicle)? How could this data or information be communicated across all vehicle and supply equipment models, regardless of the manufacturers' involvement?**

17. **What is the energy consumption impact from adding flexible demand capability to existing EVSE?**

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? More detail can be found here: Market Informed Demand Automation Server (MIDAS) (ca.gov).**

Currently, many load serving entities (LSEs) including large CCAs, Investor-Owned Utilities and certain Publicly Owned Utilities have uploaded and are maintaining their time-dependent rates on MIDAS. The Joint CCAs agree that EVSE manufacturers may find it valuable to integrate the capability to interact with MIDAS into their products; however, the Joint CCAs caution that the CEC should not *require* EVSE to be able to utilize MIDAS at this time. As discussed above, the Joint CCAs generally caution against standards that may increase the cost, or slow the deployment, of EVSE in California. Requiring the utilization of a particular tool or system rather than allowing EVSE manufacturers the flexibility to incorporate rate and grid information in the manner that works best for them is likely to increase costs and limit creative market solutions. Notwithstanding this concern, the Joint CCAs are open to discussing improvements to MIDAS functionality but note that expanding the capabilities and functionality of MIDAS to further incentivize EVSE manufacturers to incorporate MIDAS functionality would require additional work as well as additional funding, the source of which is currently unknown. Therefore, the Joint CCAs urge the CEC to take a holistic and cost-effective approach when proposing to develop new, or expand the capability of, any new data access tools, such as MIDAS, or establish requirements for products to be capable of interacting with those data access tools such as MIDAS. This includes closely coordinating with CPUC efforts around data access to minimize redundancy, ensure interoperability, and minimize costs for ratepayers.

However, if one were to assume that the future design and functionality do incentivize EVSE manufacturers to design their equipment and software to interact with MIDAS, then theoretically the equipment should be able to accept MIDAS data signals that integrate the key grid cost functionalities central to this RFI. The benefits would include being able to manage EVSE loads for grid level needs and ideally for distribution circuit needs. If MIDAS integration is done well and EVSE users consistently respond to price signals, then it could potentially save significant distribution upgrade costs.

19. **What are the cybersecurity challenges and needs associated with communicating signals from the grid, or a third-party, to accomplish supplying energy to electric vehicles?**

20. **Are there any considerations to ensure equity when developing a load shifting strategy for supplying energy to electric vehicles? For example, are there concerns that flexible demand will be disproportionately accessible based on income level?**

There are equity implications that the CEC should consider as it is developing a load shifting strategy for EVSE. Importantly, EV load shifting strategies inherently present the least value potential to low-income and disadvantaged Californians today simply because they are less likely to own or lease an EV. The lack of easy, dependable access to charging at home remains a major barrier for many to consider purchasing or leasing an EV, especially for those who live in MFRs. What's more, low-income Californians are more likely to live in MFRs. MFRs have been historically underserved by EV charging programs in California. Whether a resident has access to any EV charging at their home is generally dependent upon the MFR operator to elect to install the equipment. And in many instances, these projects result in EVSE that is shared among all of the residents which may lead residents to question how reliable their charging access truly is. A resident who is considering an EV will have to consider if they will need to coordinate with their neighbors to ensure that they will be able to get a charge at home when they need it, not unlike that of sharing laundry facilities. It's also important to consider that shared EVSE at MFR will limit the ability of individual EV drivers to respond to price signals to shift their charging period if they know that their neighbors are waiting to charge after them. This is also true in the case of EV drivers who can't charge at their MFR and are entirely dependent on public charging.

L1 and LPL2 charging are an important tool for MFR charging applications, in part because of the low cost to the property owner. As a result, in some cases, an MFR can install enough EVSE to provide an individual charging port for each residential unit, greatly expanding charging access, and minimizing the cost to the MFR owner. If the FDAS eliminates the optionality to install nonnetworked L1 and LPL2, this may increase project costs to the MFR operator and restrict how much charging access it may choose to provide for their tenants.

Californians that live in rural parts of the state, especially those that live off-grid or at the grid-fringe are also poorly positioned to benefit from load shifting opportunities. This is due in part to the fact they have historically been underserved through past EVSE incentive programs, but more directly because the nature and reliability of their electric service limits their ability to participate in any demand flexibility programs.

In these use cases, nonnetworked EVSE such as L1, LPL2, or standard L2, all of which are typically less expensive their networked equivalents, are critical to ensure that the market provides a charging options at the price points needed to enable all Californians to have the option to adopt EVs.

Conclusion

As noted above, the Joint CCAs are encouraged by the CEC's exploration of FDAS to enable grid operators, EV drivers, fleet managers, and others to benefit from the ability to better shift EV load. However, the Joint CCAs acknowledge that California faces significant challenges in matching the rate of EVSE installation to meet its 2030 and 2035 goals. The Joint CCAs also stress the importance of less expensive options such as nonnetworked L1, LPL2, and L2 remaining readily available in the California market to help support the rapid rate of EV adoption needed to meet these targets. This is especially true for Californians living in rural areas or MFRs that have been historically underserved by state- and ratepayer-funded EVSE programs. The Joint CCAs also believe that EV fleets present the most significant opportunity for encouraging flexible EV load through the FDAS. The larger battery sizes per vehicle and per fleet, the nature of commercial operations to pursue out the type of operational cost savings that a flexible demand program could provide, and the minimal customer touch points needed to enroll an entire fleet, all suggest that they could serve as a sizable flexible resource and provide considerable value to the grid. Nonetheless, not all fleets will be good fits for these programs, and the potential benefits of these programs will be limited to fleets that exhibit specific characteristics. The Joint CCAs thank the CEC and staff for considering their responses to the RFI and look forward to further engagement in any subsequent rulemaking.

/s/ Matthew DS Rutherford
Matthew DS Rutherford
Manager of Regulatory Policy
PENINSULACLEAN ENERGY AUTHORITY
2075 Woodside Road
Redwood City, CA 94061
mrutherford@peninsulacleanenergy.com
(650) 263-1590

/s/ Sabrinna Soldavini
Sabrinna Soldavini
Director of Policy
MCE
1125 Tamalpais Avenue
San Rafael, CA 94901
ssoldavini@mcecleanenergy.org
(415) 464-6670

/s/ Heather Dauler
Heather Dauler
Deputy Director of Regulatory Compliance and Policy
SAN JOSÉ CLEAN ENERGY
200 E. Santa Clara Street
San José, CA 93115
heather.dauler@sanjoseca.gov

/s/ Todd Edmister
Todd Edmister
Sr. Director of Public Policy and Deputy General Counsel
AVA COMMUNITY ENERGY
1999 Harrison Street, Suite 800
Oakland, CA 94612
tedmister@avaenergy.org
(510) 650-7579

Eileen Verbeck

Eileen Verbeck
Interim Executive Director
REDWOOD COAST ENERGY AUTHORITY
633 3rd Street
Eureka, CA 95501
everbeck@redwoodenergy.org