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SMUD Comments Re Workshop on Funding Allocations for Light-Duty Passenger Electric Vehicle Charging Projects

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Additional submitted attachment is included below.

STATE OF CALIFORNIA
BEFORE THE CALIFORNIA ENERGY COMMISSION

In the matter of:	)	Docket No. 20-TRAN-04
	)	
Funding Allocations for Light-Duty Passenger Electric Vehicle Charging Projects	)	SMUD Comments Re: Workshop on Funding Allocations for Light-Duty Passenger Electric Vehicle Charging Projects
	)	
	)	February 17, 2023

Comments of SACRAMENTO MUNICIPAL UTILITY DISTRICT on Workshop on Funding Allocations for Light-Duty Passenger Electric Vehicle Charging Projects

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide input and comments to the California Energy Commission (CEC) to inform the development of funding allocations for potential light-duty electric vehicle (EV) charging infrastructure projects.

SMUD strongly supports the state's efforts to reduce greenhouse gas (GHG) emissions by promoting transportation electrification. SMUD has had an active Electric Transportation Program since 1990 and has been a leader in statewide EV policy development since that time. We recognize that transportation is the single largest source of the State's emissions and achieving a zero-emission vehicle (ZEV) truck and bus fleet by 2045 where feasible, is critical to meeting California's environmental goals.

Additionally, SMUD is a founding sponsor of the California Mobility Center (CMC), which provides future mobility innovators and industry incumbents with access to programs and resources to accelerate the pace of smart and shared mobility solutions, fueling and charging infrastructure, and EVs for on and off-highway use.[1]

Excerpted below are select questions posed to stakeholders in the Funding Concepts presentation of the Funding Allocations for Light-Duty Passenger Electric Vehicle Charging Projects workshop held on January 26, 2023.[2] SMUD is pleased to offer the following initial feedback and recommendations on potential future light-duty EV charging infrastructure funding concepts, and we look forward to continuing to provide additional input to inform the CEC's transportation electrification efforts.

[1] Home - California Mobility Center
[2] CEC Presentation – Funding Allocations for LD Passenger EV Charging Projects (https://efiling.energy.ca.gov/GetDocument.aspx?tn=248609&DocumentContentId=83088). January 26, 2023.

Discussion and Input Provided

Finding Solutions to Local Charging Needs

- *City governments compete for block grants to expand charging access for homes and other activity locations.*
- *Flexible solicitation allows cities to design solutions that meet local needs.*

a) *Should the scope be narrowed to focus exclusively on a specific approach (like curbside or charging plazas)?*

SMUD recommends against focusing on a specific approach as this may limit the opportunity to craft solutions that address the unique circumstances of individual communities. Flexible design solutions are key, because a broader scope will encourage a diversity of ideas from the marketplace that employ innovative program concepts to help meet all customers, particularly our most under-served customers, where they are.

On a separate note, the CEC should clarify whether this funding opportunity is targeted towards single-family housing or multi-family housing. The presentation slides were inconsistent and referenced both single-family and multi-family at different points. SMUD favors an inclusive/broader program approach that encompasses both single-family and multi-family.

b) *How large should each grant be to make the project most useful?*

SMUD recommends grant amounts of $2M or greater for infrastructure deployments. Smaller grant amounts tie up applicant resources, while larger grant amounts will help applicants target their efforts and utilize limited staff resources more efficiently. Larger grant amounts would also enable applicants to reach a wider array of customers through broader partnerships.

c) *What are ways to support equity goals within this framework while maintain the flexible approach?*

SMUD recommends developing a robust project planning/screening criteria to focus on projects that will yield the greatest value proposition. The ultimate goal should be to provide equitable charging rates, regardless of where an EV owner primarily charges—be it at home, at an apartment complex, or at public stations. The CEC could require grant awardees to offer charging rates that are comparable to residential rates (or within a certain percentage of residential rates). These charging rates could apply to all users with discounted rates or select users who are income qualified. For example, SMUD has encountered situations where residents of multifamily housing units, who charge EVs at home, were being billed at rates on par with higher end public, direct current fast charging—effectively $0.50-$0.60 per kWh including access fees and monthly charges. These inequitable billing practices hinder the state's transportation electrification goals. A potential solution would be

for respondents to partner with utilities to help offset costs to ensure a viable business case for EV service providers.

The CEC could also create incentives for projects being implemented in under-resourced communities, to train and hire labor from the same communities where the projects are located.

Additionally, the CEC should work more closely with external stakeholders like city, county, air quality districts, local council governments, and community-based organizations to design and deploy grant funding packages that will result in more meaningful outcomes for equity communities.

Grid-Light and Resilient Charging

- *Maximize charging deployments on existing grid infrastructure and enable operation during outages.*
- *Charging deployment must demonstrate:*
  - *Ability to operate during outages, potentially with limited power or duration*
  - *Reduced need for grid upgrades (for example, grid connection only serves a portion of charging capacity)*

a) *How should "grid-light" be measured and should a maximum level of grid reliance be specified? (For example: The grid connection for charging cannot exceed 30 percent of total charging capacity.)*

SMUD recommends focusing on lowering the interconnected kW (power) or ampacity, while providing a more reliable charging experience. For example, the use of battery-integrated chargers or similar solutions that enable interconnection at 280 volts rather than 480 volts; utilizing onboard storage as opposed to co-located storage; and ensuring one point of interconnection.

The ability for charging deployments to operate during outages, while reducing the need for grid upgrades, are goals that are often at odds. Maximizing existing infrastructure is beneficial; however, also adding a separate interconnection for a battery to a direct current fast charging (DCFC) installation can be counterproductive and could result in costly transformer upgrades.

b) *Should applicants propose their own outage operation capabilities, or should CEC set minimum requirements? If so, how can CEC specify minimum requirements while accommodating a wide range of possible project types and integration strategies?*

SMUD recommends developing solutions for resilience based on need rather than setting minimum requirements. Establishing a single standard for operations during outages is going to be very challenging, because operations will vary widely by use case and over time, as stations realize higher utilization. A single standard also risks stranding significant assets. Implementing solutions for resilience based on

need and risk, required level of service by region, and then determining how best to deliver on that need and/or what risk tolerance is acceptable, is a better approach.

c) *How can grid-light projects ensure customer confidence and that the charging experience is not compromised? Should CEC set minimum requirements?*

SMUD agrees that "grid-light" is a good goal and resilience is valuable, however defining an arbitrary threshold does not make sense. Some locations have plenty of capacity to incorporate charging, and there will be times where grid upgrades may be cheaper and able to support additional charging versus services like onsite storage. Establishment of a standard requiring storage at every charging site might result in higher overall infrastructure costs, which could create a barrier to infrastructure deployment. Change management solutions and standards for evaluating and certifying performance would be a better focus than requiring onsite storage.

Additionally, quality solutions should be prioritized over approaches that minimize cost. Load sharing is one way to get EV users the energy they need, while allowing installations that can maximize available power and potentially avoid expensive grid upgrades. Load sharing would allow customers and EV service providers a way to prioritize the charging session, with cost as the determining factor. For example, if a customer will accept a lower charge rate at a lower cost, but if another customer needs maximum power, the latter customer will pay more. Load sharing can be managed by simple, intuitive software solutions.

Serving Electric Range for Vehicle Electrification (SERVE)

- *Let industry propose the most innovative and cost-effective deployments that meet minimum energy throughput targets (that is, range served to EVs).*
- *Open to all project types and forms.*
- *Example target: Projects must be capable of serving 750 MWh/year to EVs by year 2 after commissioning, and 2.5 GWh/year by year 3.*

a) *SERVE could evaluate project proposals based on their cost-effectiveness and the validity of their estimated energy serving capacity. Are these reasonable evaluation metrics? Should other metrics be considered to ensure projects meet their cost and performance targets?*

SMUD recommends prioritizing a customer experience metric, with a cost-effectiveness metric being secondary. To increase EV adoption, the CEC needs to implement charging solutions that EV customers can and *want* to use. These solutions need to be accessible, reliable, affordable, and convenient. Installing EVSE that prioritizes cost over customer experience metrics, runs the risk of having an adverse impact on EV adoption. Customer experience measures may include the following factors: accessibility, uptime/reliability, usability, safety/security, price transparency and ease of payment. Applications that incorporate performance metrics should be prioritized when evaluating proposals.

b) *How could CEC ensure that projects provide benefits to priority communities?*

To ensure projects benefit priority communities, SMUD recommends the CEC require applicants to propose pathways by which pricing for various classes of accounts can be configured to include discounts and credits (e.g., low-income energy assistance recipients LIHEAP) that can be put in place by a partner utility or other entity. Currently, utilities and Community Choice Aggregators (CCAs) offer discounted rates to income qualified customers. If a qualifying customer purchases an EV and charges at their single-family home, that discount is applied to their vehicle charging. However, income qualified customers in multi-family housing often rely on property-supplied EV charging or public charging, and do not receive the same discount benefit; they are also subject to pricing disparities by unregulated entities.

c) *Would it be reasonable to require projects to focus deployments within a local area or region? This would help ensure that energy throughput is concentrated in a local area as opposed to being spread out across the state.*

The CEC should clarify what problem the focused deployment within a local region or area is attempting to address. If the CEC envisions a grant to EV charging stations located in charging deserts, criteria should focus on disadvantaged community (DAC) classifications per Enviroscreen. Other criteria may include population density, multifamily housing density, existing charger density, and other factors.

In addition to upfront grants, provisions for subsidizing operational costs to maintain stations if utilization is low (ahead of any revenue generated by charging), will need to be addressed. The CEC should allow applicants to layer funding sources to incentivize the development of infrastructure serving DACs, as long as doing so does not disproportionately impact equity customers.

<u>Charging at Single-Family Homes</u>

- *A block grant to provide rebates for home electrical upgrades to enable at-home charging. Potential eligible costs would include:*
  - *Level 1 and Level 2 home chargers*
  - *Panel upgrades (for homes with a main breaker under 200 A)*
  - *Installation of "electric-ready" circuits*
  - *Automatic transfer switches*
  - *Equivalent equipment that enables load flexibility at the meter level*
- *Tentative Solicitation Criteria*
  - *This proposed solicitation concept would be open to third-party rebate implementers with the following tentative criteria:*
    - *Partnership with regional Community Based Organizations and/or local governments to engage specific communities and neighborhoods.*

- *An outreach plan that leverages integration with existing decarbonization, electrification, equity or resilient community programs and ease of application for homeowners.*

a) *How can this concept better expand at-home charging opportunities to renters who own EVs?*

SMUD suggests that the CEC prioritize proposals that include circuit-splitter technologies, specifically plug-based circuit sharing. Plug-based circuit sharing is a portable technology that renters can take with them when they move.

b) *General comments for Charging at Single-Family Homes funding concept:*

Installing larger, Level 2 19 kW chargers is more likely to require costly transformer upgrades. Alternatively, incentivizing load management options (e.g., power shuts off when panel capacity reaches a set threshold and/or circuit sharing devices) is one way to mitigate against added costs. Load management approaches may be an economical alternative to panel upgrades.

Charging at Multi-Family, Affordable Housing Sites

- *Competitive grant solicitation.*
- *Accessible and reliable charging at multifamily, affordable housing sites.*
- *Community outreach and education required.*
- *Project sites within ¼ mile of an affordable, multi-family housing siteLet industry propose the most innovative and cost-effective deployments that meet minimum energy throughput targets (that is, range served to EVs).*

a) *Should the solicitation include DC fast chargers?*

To provide maximum flexibility, deployability, and potential cost reduction, SMUD recommends multi-family housing solicitations allow for Level 1, Level 2, or DCFC solutions, as well as receptacle-based solutions for AC Level 1 and Level 2 chargers that meet or exceed the California Green Building Standards Code (CalGreen) standards, especially for projects involving existing construction.

b) *Should projects only include sites that are classified as both multifamily housing and affordable housing?*

SMUD recommends that the CEC employ a less prescriptive approach to reach the broadest range of customers. This could include, for example, specifying a minimum threshold or that a percentage of the site must be affordable housing.

c) *What are ways to make this concept more equitable?*

As noted previously, to make this concept more equitable, the CEC should consider developing a robust project planning/screening criteria in order to focus on projects that will yield the greatest value proposition (e.g., proposals that offer charging rates comparable to residential rates, or training and hiring labor from under-resourced communities.

SMUD recommends providing an incentive for, or prioritizing, projects that utilize non-proprietary technology like Open Charge Point Protocol (OCPP) communications. This will help to ensure that if one network provider is too costly or goes out of business, another provider may easily step in to manage charging, collect payments, and more.

The CEC should also define the standard for what is considered "affordable." Some multi-family buildings that serve lower income residents may not be designated as affordable. For example, some properties that may target moderate income residents offer lower rents but are not necessarily designated as "affordable."

Additionally, the CEC should consider a distance threshold (e.g., ¼ mile), a population density threshold, or a proportional renters-versus-owners metric, if the site can serve multifamily buildings. For instance, a location in the middle of three large multi-family buildings, but maybe 1/3 of a mile from each, may serve a larger segment of low-income EV owners than a location that is next to one multi-family building.

Charging at New Multi-Family Sites

- *New construction and retrofitting existing sites.*
- *Fund charging stations, panel upgrades, and infrastructure to create EV-readiness.*
- *50% of parking spaces with charging stations; 25% EV ready.*

a) *Should the solicitation include DC fast chargers?*

SMUD recommends that DC fast chargers be included as an option, in addition to Level 1 and Level 2 chargers.

Additionally, projects should be required to meet proposed CalGreen mid-cycle standards, and proposals that exceed the CalGreen standards should be scored higher. Ideally, SMUD would like to see as close to 100% of stalls in new construction be EV-ready to the extent feasible; this is preferable to EV-capable in new construction.

b) *Should the EV ready percentage refer to each site within a project, or a project overall?*

For added flexibility, SMUD recommends applying the EV-ready percentage to the overall project site. Site conditions can vary dramatically and having some flexibility to adjust percentages across sites would be helpful.

Reducing Drive Times to DC Fast Charging

- *Shorten drive times to DC fast charging stations to provide accessible and reliable charging for low-income and disadvantaged communities.*
- *Consider other aspects of access, including minimizing cost to drivers.*

a) *Are there metrics other than drive time and cost that the CEC staff should consider to improve access?*

Additional metrics the CEC should consider are charger uptime and accuracy of information provided to the driver prior to charging (e.g., cost, payment options, clear signage, reservation capability). Power output is also an important consideration because many individuals have limited time and/or rely on their vehicles to earn income (e.g., rideshare, food delivery). Having to spend extra time at a slower charging station is an opportunity cost. Other helpful metrics are proximity to amenities such as canopies, lighting, restrooms, Wi-Fi, food/beverage services, and more, which impacts the driver's ability to make productive use of their dwell time and affects the customer's overall charging experience.

b) *Disadvantaged communities would be better served by which of the following EV fast charging options? Larger charging plazas, smaller charging plazas, or a mixed approach.*

While SMUD believes there will ultimately be a need for a mixed approach, at the present time, we recommend larger charging plazas to provide the greatest benefit to EV drivers. While some geographic coverage may be sacrificed by prioritizing larger plazas, larger plazas provide more confidence to drivers that they will be able to access and reliably use a charging station at an individual location. Deployment costs and logistics for plazas may differ according to each specific charging location, so the CEC should account for this variability when considering applications.

c) *What is an appropriate minimum for power output of DC fast chargers?*

SMUD recommends a 175-kW minimum power output for DC fast chargers, which is consistent with the industry's base power output level for DC fast chargers. A 175-kW minimum power output will allow for flexibility to develop project-specific solutions that balance power needs with cost.

Curbside DC Fast Charging

- *Funding for projects that offer DCFC at curbside or metered parking.*
- *Require partnership with local authorities (cities, counties, etc.) to ensure the continued operation of curbside chargers, which will mostly be installed on public premises.*

a) *What hurdles do you expect for installing, operating, and maintaining successful curbside DC fast chargers in California?*

As curbside charging increases, it will be essential to ensure installations do not interfere with pedestrian accessibility and adhere to the Americans with Disabilities Act (ADA). We will need scalable solutions to accommodate ADA compliance within programs. Additionally, vandalism has been a problem for some utilities until they started using retractable charging cables.

Conclusion

SMUD appreciates the opportunity to provide input and comments to inform the development of potential light-duty electric vehicle (EV) charging infrastructure projects. We look forward to continuing to collaborate with staff in this proceeding.

/s/

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cc: Corporate Files (LEG 2023-0026)