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California Energy Commission
Docket Unit
RE: Docket No. 20-TRAN-04
1516 Ninth Street
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Comments of the Center for Sustainable Energy® on the California Energy Commission's Staff Workshop on Funding Allocations for Future Electric Vehicle Infrastructure Projects

The Center for Sustainable Energy® (CSE) is a mission-driven national nonprofit dedicated to decarbonizing the transportation sector and the built environment. As a nonprofit administrator and advisor, CSE has 24 years of experience in program administration, technical assistance, and policy advisement services. CSE has specific expertise in administering incentive programs for electric vehicles (EVs) and EV charging infrastructure and is currently involved in the administration of incentive programs across six states. In California, CSE implements the Clean Vehicle Rebate Project (CVRP) and the California Electric Vehicle Infrastructure Project (CALeVIP).

CSE commends California Energy Commission (Energy Commission) Staff for their comprehensive efforts to develop future concept proposals for EV infrastructure projects and their commitment of $18 million through the Clean Transportation Program for these initiatives. CSE appreciates the opportunity to provide comments on these concepts and offers the following recommendations:

- Develop governing principles to guide investment in EV infrastructure projects
- Integrate rural EV charging infrastructure projects into broader rural resiliency projects

- Leverage diverse funding streams to support airport fast charging projects for transportation network companies
- Strategically support advanced charging applications like V2X and VGI by planning for intermediate steps and new technologies
- Implement flexible EV infrastructure solutions to support Level 1 and Level 2 charging for multi-unit dwellings
- Invest in technical assistance programs to support EV infrastructure projects in priority populations.

I. DEVELOP GOVERNING PRINCIPLES TO GUIDE INVESTMENT IN EV INFRASTRUCTURE PROJECTS

CSE supports many of the EV infrastructure funding concepts proposed during the Workshop and further recommends that the Energy Commission identify and adopt a set of governing principles to guide investment in future EV infrastructure projects. This will ensure that limited State funding can be strategically utilized to overcome key barriers present across different charging applications. Specifically, CSE encourages the Energy Commission to consider four governing principles: 1) Define and prioritize cost-effectiveness; 2) Build for the future by planning projects with intermediate steps and new technologies in mind; 3) Harmonize program goals and regulatory requirements; and 4) Prioritize community engagement.

First, defining and prioritizing cost-effectiveness considerations for EV infrastructure projects will help improve the financial viability of these projects and provide benefits for developers, manufacturers, and consumers. Specifically, developers could utilize Total Cost of Ownership (TCO) models that include upfront equipment costs, networking costs, as well as installation and maintenance costs, for a period of at least three to five years. This model should also factor in utilization. High installation costs at a heavily used site may offer a far better value than low installation costs at a

site that is seldom or never used. Additionally, it is important to recognize the costs of complying with regulations, such as the Electric Vehicle Supply Equipment (EVSE) regulations recently enacted by the California Air Resources Board (CARB) and the Division of Measurement Standards (DMS). These compliance costs should be incorporated into the project design and planning phase when feasible. Lastly, public charging costs must be competitive (i.e., slightly more than charging at home) to incentivize residential charging where possible, and overall charging costs should be minimized to be competitive with gasoline consumption. To achieve this goal, CSE encourages the Energy Commission to consider performance-based financing solutions based on charger utilization to further promote cost-effective infrastructure solutions.

Second, CSE recommends that the Energy Commission build for the future by developing EV infrastructure projects as part of a long-term framework that includes intermediate steps and plans to incorporate new technologies. This will ensure that, in addition to addressing existing market barriers, the projects are designed to optimize future opportunities. For example, developers of EV infrastructure projects should consider installing the equipment and implementing the standards necessary to incorporate vehicle-to-grid integration (VGI) technologies. This will enable facilitated adoption of these technologies once they become widely available. Additionally, planning for intermediate steps can prevent costly upgrades or retrofits in the future. For example, infrastructure projects should be planned to include the equipment necessary to comply with forthcoming regulatory requirements. This can include the credit card readers and networking equipment required under CARB's EVSE standards regulation, as well as the equipment necessary to measure the level of electricity being dispensed required under the DMS EVSE regulations.

Third, CSE encourages the Energy Commission and other agencies to harmonize EV program goals and regulatory requirements. CSE recognizes and commends the

interagency initiatives that are already in place, including the Zero Emission Vehicle (ZEV) Market Development Strategy Update currently being coordinated by the Governor's Office of Business and Economic Development (GO-Biz). These types of initiatives are necessary to prevent duplication across programs and ensure that State funding is being utilized strategically to address ZEV market barriers. Additionally, harmonizing regulatory requirements around EV infrastructure accessibility and communication standards will further help prevent the need for retrofits and enable developers to deploy infrastructure expeditiously and cost-effectively. For example, the compliance deadlines issued in the CARB and DMS EVSE regulations described above take effect in different years, which could present complications for owners and operators of existing infrastructure. It is also important to provide some flexibility regarding the adoption of communication protocols as there are applications in which some standards are preferable to others, particularly depending on the local contexts of the charging site. For example, some communication standards will be best suited for demand response or demand charge management but less suited for participation in ancillary service markets. As such, there should be flexibility in standardization requirements to acknowledge local contexts and use cases.

Fourth, CSE strongly encourages the Energy Commission to prioritize community engagement, especially for disadvantaged communities (DACs), low-income populations, and other priority populations. Specifically, CSE recommends engagement with community-based organizations (CBOs). As highlighted by CARB in its Low-Income Barriers Study, CBO engagement is an effective means for soliciting input regarding community needs and preferences. As part of CSE's outreach initiatives for CVRP and CALeVIP, CSE helps maintain the CVRP Community Partners Network, which includes over 20 CBOs in California. Through this network, CSE has held over 700 outreach events since 2015. Leveraging existing networks like this can streamline

engagement and ensure that State funding is being utilized to develop community benefits. Additionally, given the potential technical and administrative complexity in operating and maintaining EV infrastructure, coupled with potentially limited consumer understanding of these technologies, CSE encourages the Energy Commission to consider alternative infrastructure ownership models in which a trusted source can operate the infrastructure, at least on a temporary basis. Such entities could include publicly owned utilities, community choice aggregators (CCAs), or joint powers authorities (JPAs). Lastly, in addition to installing EV infrastructure in underserved communities, it is important to also build out the electrical capacity in these communities, which will further facilitate the widespread deployment of EV infrastructure necessary to meet California's EV adoption goals.

II. INTEGRATE RURAL EV CHARGING INFRASTRUCTURE INTO BROADER RURAL RESILIENCY PROJECTS

CSE supports the Energy Commission's proposal to fund resilient rural EV charging pilots. CSE agrees with the Staff determination that rural EV charging pilots can support local travel demand, integrate renewable energy resources, and foster the development of shared mobility hubs. Additionally, CSE's experience through CALeVIP indicates that deploying EV infrastructure in rural regions can present additional complications, including necessitating more extensive grid upgrades and more detailed planning considerations. As mentioned in a public comment during the Staff Workshop, some stakeholders are also concerned that the CALeVIP requirement for EV chargers to be networked may not be feasible in certain rural regions with limited broadband access.

To address some of these concerns and enhance project effectiveness, CSE encourages the Energy Commission to integrate rural EV charging infrastructure projects into other rural resiliency initiatives, including microgrid projects, rural electric

cooperatives, and resiliency hubs. This can facilitate infrastructure development by coordinating costly grid upgrades for multiple technologies into a single project. Additionally, coupling EV chargers with renewable generation technologies and energy storage systems can ensure that vehicles are charged with clean energy. These coupled infrastructure projects could be funded by stacking incentives across various State incentive programs. Lastly, these integrated resiliency projects can provide benefits during emergencies, including Public Safety Power Shutoff (PSPS) events. These benefits can expand beyond just EV charging to include applications such as cell phone charging and providing access to broadband internet.

III. LEVERAGE DIVERSE FUNDING STREAMS TO SUPPORT AIRPORT FAST CHARGING PROJECTS FOR TRANSPORTATION NETWORK COMPANIES

CSE recognizes the need to have dedicated EV charging infrastructure for transportation network company (TNC) drivers at high utilization locations like airports and supports this funding concept. However, given the specificity of this use case, the limited pool of potential project participants, and the limited funding available through the Clean Transportation Programs, CSE encourages the Energy Commission to fund this application using multiple revenue streams. For example, many of California's major airports are located in the service territory of publicly owned utilities. The Energy Commission could work with these utilities to identify and test alternative business models to support fast charging infrastructure at airports. For example, airports could leverage revenue through the Low Carbon Fuel Standard (LCFS), which includes credit generation pathways for publicly available fast chargers. While funds from the Clean Transportation Program could be used in the initial stages of this process, CSE encourages the Energy Commission to develop long-term plans for how this specific application could be sustained in the future without additional grant funding.

Furthermore, CSE encourages the Commission to consider that dedicated fast chargers for TNC drivers can serve applications beyond just airports. Given the complicated lease structure for building directly on airport property, it may be more feasible to install chargers near airports while deploying clear signage demonstrating their availability. This will have the additional benefit of expanding the pool of TNC drivers beyond just those individuals picking up passengers from the airport. The Energy Commission may also want to consider supporting this application through existing projects like CALeVIP. While CALeVIP incentives have been issued to fund EV infrastructure installations at airports, no incentives have been issued for projects focused on TNC drivers exclusively. Dedicating a specific portion of incentive funding for TNC applications may help alleviate the demand on other publicly available EV infrastructure. Lastly, in addition to servicing TNC drivers, these infrastructure projects could also be employed to support other ground transportation providers operating in and around airports.

IV. STRATEGICALLY SUPPORT ADVANCED CHARGING APPLICATIONS LIKE V2X AND VGI BY PLANNING FOR INTERMEDIATE STEPS AND NEW TECHNOLOGIES

CSE supports the advanced technologies funding concepts proposed in the Workshop, especially the concepts regarding V2X charging and VGI charging. Moreover, CSE agrees with Staff's assertion that these concepts will help make charging cost-effective, accessible, and ubiquitous. CSE recognizes and supports the consideration of V2X and VGI as separate but related concepts; however, CSE contends that the development, refinement, and standardization of V2X technologies is an important intermediate step to the widespread adoption of VGI more generally.

CSE supports the V2X charging concept, especially as it relates to providing resiliency benefits during PSPS events and generating cost savings for the consumer. Additionally, CSE supports the proposal that demonstrations focus on specific use

cases, including vehicle-to-home (V2H), vehicle-to-building (V2B), and vehicle-to-load (V2L), although V2L was not explicitly mentioned during the Workshop. CSE recognizes that the cost-effectiveness of V2L functionality is relatively weak, but we maintain that this application will be important to the widespread diffusion of VGI. CSE also encourages the Commission to consider testing different communications protocols in a variety of use cases to assess which standards are most appropriate for specific applications.

CSE also supports the VGI charging concept and the focus on hardware and software solutions that will demonstrate consumer value and facilitate market adoption. Specifically, CSE supports funding those projects that can demonstrate alignment with renewable generation as well as provide grid reliability and resiliency benefits. Given the wide variety of potential VGI applications, it will be useful to fund those demonstrations that can strategically and systematically test out different use cases. Lastly, CSE recommends that VGI demonstrations seek to address gaps from other projects, including utility-funded pilots, and that the results of the projects be used to develop business models that can help sustain VGI technologies in the long-term.

V. IMPLEMENT FLEXIBLE EV INFRASTRUCTURE SOLUTIONS TO SUPPORT LEVEL 1 AND LEVEL 2 CHARGING FOR MULTI-UNIT DWELLINGS

CSE supports the funding concept to support Level and Level 2 (L1/L2) charging for multi-unit dwelling (MUD) residents. As discussed during the Workshop, MUD residents face a number of challenges in deploying residential EV chargers, and there is no simple solution that can be applied across MUDs. Thus, this concept is a reasonable use of funds from the Clean Transportation Program, and it is worthwhile to explore a flexible suite of solutions that can enable MUD residents to access EV charging. CSE is currently partnering with a number of Clean Cities Coalitions around the country to

implement the Vehicle Charging Innovations for Multi-Unit Dwelling (VCI-MUD) project, which is funded by the U.S. Department of Energy's Vehicle Technologies Office. CSE would be pleased to disseminate the findings from this project once it is completed, which will include a baseline assessment of charging patterns at MUDs.

VI. INVEST IN TECHNICAL ASSISTANCE PROGRAMS TO SUPPORT EV INFRASTRUCTURE PROJECTS IN PRIORITY POPULATIONS

As mentioned above, community outreach and assistance are key precursors to the success of EV infrastructure projects in disadvantaged and low-income communities. These communities face a number of unique challenges in deploying EV infrastructure and would benefit from additional and specialized assistance. While a dedicated technical assistance program for priority populations was not considered as a standalone funding concept in the Workshop, CSE notes that there was some discussion around this proposal, and we encourage the Energy Commission to consider allocating funding for such a program. This program could be based off other EV readiness planning efforts, which have been conducted by cities and counties across California. It is also important to recognize the distinction between assistance with applications for EV infrastructure funding and assistance with planning considerations, such as the identification and assessment of potential project sites. Accordingly, CSE encourages the Energy Commission to consider clarifying those forms of assistance that are appropriate to support. CSE also reiterates that these types of programs would benefit from direct engagement with community residents, ideally including the involvement of CBOs. There may also be a valuable role for Councils of Government (COGs) to serve as centralized information resources to help address low EV awareness among municipal officials and consumers alike.

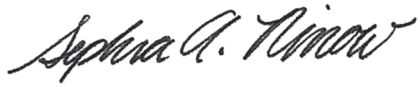
Furthermore, CSE encourages the Energy Commission to consider how technical assistance programs for priority population can complement existing equity-focused

programs. For example, it would be helpful to understand how incentives for both vehicles and infrastructure can stimulate widespread EV adoption in these communities, and how the presence of EV charging infrastructure can promote consumer confidence. This may be especially relevant for the nascent used EV market, as these vehicles are more cost competitive with conventional internal combustion engine (ICE) vehicles and are a less risky investment for low-income individuals. Additionally, different policy objectives will warrant separate approaches. For example, driving EV adoption among low- and moderate-income populations may require a different program than exploring how EV infrastructure installations can generate community benefits like workforce development and job training. Any technical assistance project should seek to identify these factors and propose solutions to address different regional and local goals.

VII. CONCLUSION

CSE appreciates the opportunity to provide these comments on the proposed funding concepts and looks forward to the continued development and consideration of these concepts.

Sincerely,



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