DOCKETED	
Docket Number:	20-TRAN-04
Project Title:	Electric Vehicle Infrastructure Project Funding
TN #:	241070
Document Title:	Electrify America Comments - Electrify America Comments, December Workshop on Funding Allocations for Future EV Charging Projects
Description:	N/A
Filer:	System
Organization:	Electrify America
Submitter Role:	Public
Submission Date:	12/21/2021 5:04:25 PM
Docketed Date:	12/21/2021

Comment Received From: Electrify America
Submitted On: 12/21/2021
Docket Number: 20-TRAN-04

Electrify America Comments, December Workshop on Funding Allocations for Future EV Charging Projects

Additional submitted attachment is included below.

December 21, 2021

Mark Wenzel, Ph.D.
California Energy Commission
Fuels and Transportation Division
715 P Street
Sacramento, CA 95814

RE: Comments on December 2, 2021 Workshop on Funding Allocations for Future Electric Vehicle Charging Projects

Dear Dr. Wenzel:

Thank for the opportunity to comment on initial concepts related to the funding ideas for light-duty electric vehicle (EV) charger infrastructure projects. Charging infrastructure remains a critical barrier to the state achieving its electric vehicle adoption goals. With over $300 million to support light-duty EV charging over the next three years, the California Energy Commission (CEC) can take important steps to support the rapidly growing passenger EV market and advance the State's interrelated air quality, climate change, and equity goals.

Priorities for Future EV Charging Programs

With the influx of general fund money, and the EV market poised for rapid growth, now is an important time to take stock of CEC's programs to date and evolving market conditions, and incorporate lessons learned into the Commission's programs moving forward. Electrify America feels strongly that addressing the five items below will accelerate and expand zero emission vehicle (ZEV) infrastructure deployment. The targeted changes below will allow the CEC broader reach to do more with its limited resources and accelerate the transition to 100 percent zero emission vehicles in the State. We look forward to the opportunity to work with you and the CEC to address these issues and continue the successful implementation of its important ZEV programs.

1. Address Spending Ratios that Lead to Under-Investment in Ultra-Fast Charging

CEC's primary infrastructure investment program, CalEVIP, allocates funding in a manner that advantages Level 2 chargers and lower-power direct current fast chargers (DCFC). For example, as of September 14, 2021, over 80 percent of chargers installed or reserved under CalEVIP are Level 2 chargers and nearly 90 percent of remaining incentive funds are committed to Level 2 charging.[1]

Also, while we appreciate the recent rebate design changes,[2] which further distinguish between 50-99.9kW and 100kW+ DCFC, CalEVIP caps funding at $60,000 ($80,000 in a disadvantaged community) per charger for chargers over 100kW. This creates a bias towards 100kW DC units and an impediment towards 350 kW DC units, despite the fact that 350kW units offer 3.5 times the speed and functionality of a 100kW charger at less than 3.5 times the cost, according to ICCT estimates.[3]

[1] CEC (2021) Southern California Level 2 Public Workshop, September 21. https://go.energycenter.org/rs/157-ILH-029/images/SCIPL2_Public_Workshop_Presentation.pdf
[2] CSE (2021) Presentation for the CALeVIP 2021 Implementation Workshop, Center for Sustainable Energy, March 8. https://efiling.energy.ca.gov/GetDocument.aspx?tn=237037&DocumentContentId=70214
[3] Nicholas, M. (2019) Estimating electric vehicle charging infrastructure costs across major U.S. metropolitan areas, The International Council on Clean Transportation, August.

We share the objective of equitably electrifying California and ensuring all Californians can access electric cars. Investment in ultra-fast chargers, in particular, is an important equity tool. First, according to UCLA's most recent research,[4] multi-unit dwelling (MUD) residents rely on DCFC as their primary source of charging. Second, Harvard[5] and Bloomberg[6] research demonstrates that those who live in MUDs and rent are lower income and more racially and ethnically diverse than the average population. Third, NREL's just published study shows that more than half of vehicles lack access to electricity for overnight parking.[7] Serving MUD residents and those without charging at home via public ultra-fast charging is a cost-effective way to serve far more residents than Level 2 charging – and it's a key tool in the equity toolbox. And fourth, according to CEC's AB 2127 and SB 1000 reports on the geographic and equitable distribution of EV infrastructure, *DCFC charger deployment is more heavily centered on low- and moderate-income communities*, which have 11 and 14 DCFC per 100,000 people respectively.[8,9] High income communities have the lowest concentration of DCFC per capita, with only nine units per 100,000 residents. In stark contrast, high income communities have 25% higher levels of Level 2 charger deployment per capita than low-income communities. This study demonstrates that investing state funding in ultra-fast, reliable public charging stations, instead of Level 2 charging stations, is more likely to lead to investment in the lower-income and disadvantaged communities prioritized by the California legislature.

As the EV market shifts towards long-range electric vehicles with ultra-fast charging capabilities, including speeds up to 350kW, it's important that infrastructure catch up, and not treat 50kW or 100kW and 350kW charging as equivalent. In the past six model years, the average charging speed of new EV models has increased three-fold, from 50kW to 150kW, and the trend is accelerating. In the volume segment, Kia and Hyundai are introducing ultra-fast charging capable vehicles. Support for ultra-fast charging represents increased access, improved customer experience and adoption, and future-proofing California's EV charging network – not gold plating.

Accordingly, and following on the recent federal infrastructure package, automakers are increasingly calling for future proofing the network with a priority focus on ultra-fast charging. Just in the last few weeks, the Alliance for Automotive Innovation recommended that "Federally and state-funded DC fast chargers on corridors and at transit hubs must be capable of charging at a rate of 350 kW."[10] Subsequently, a diverse group of 15 automakers, ranging from volume producers like Kia and GM to start-ups like Lucid and Polestar, recommended that states "prioritize investment in cost-effective, high-powered charging infrastructure, such as 350 kilowatt (kW) charging stations…."[11]

Indeed, according to recent research by Atlas Public Policy, the most cost-effective option for meeting the charging needed to transition the light duty fleet to 100% ZEV sales by 2035 would be to invest $39 billion nationwide in public charging stations by 2030. Of this investment, Atlas Public Policy found that $38.1 billion (97.5%) of the total investment was needed for public DCFC, to build approximately 252,000 ultra-fast 350kW chargers. Atlas Public Policy found that the nation would also need approximately 244,000 Level 2 public and workplace chargers, or 49% of the total public chargers needed, and the authors estimated that this would require $967 million (2.5%) of investment. Atlas found

[4] DeShazo, J.R. and J. Di Filippo (2021) Evaluating Multi-Unit Resident Charging Behavior at Direct Current Fast Chargers: Evidence From EVgo's High Power Charging Plaza Pilot, February.
[5] Joint Center for Housing Studies of Harvard University (2018) The State of the Nation's Housing 2018.
[6] Bloomberg CityLab (2018) Who Owns a Home in America, in 12 Charts, August.
[7] NREL (2021) Residential Parking, Electrical Access, and Implications for Future of Electric Vehicle Charging Infrastructure, National Renewable Energy Laboratory, October.
[8] CEC (2021) Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment – Analyzing Charging Needs to Support Zero-Emission Vehicles in 2030, California Energy Commission, July.
[9] CEC (2020) SB 1000 Electric Vehicle Charging Infrastructure Deployment Assessment, California Energy Commission, December.
[10] Alliance for Automotive Innovation (2021) Planning for the Electric Future: Charging Station Attributes, December.
[11] InsideEVs (2021) Automakers Urge Buttigieg to Install High Speed Charging Infrastructure, December.

that other options, like investments in 150kW DCFC instead of 350kW charging, would require $13B in additional public investment, or a 33% increase in cost.

The context for CEC programs and planning has changed significantly since AB 8 passed, CalEVIP was adopted, and even since AB 2127 passed just a few years ago. We are now planning for 100 percent ZEVs and a complete industry transition within 10-15 years.

As CEC considers developing its light-duty EV charging programs for the future, we encourage you to consider (1) allowing a higher percentage of funding to go to DCFC than public Level 2 charging in future programs and (2) adjusting per-charger caps and other program rules to encourage investment in ultra-fast charging, instead of 50kW or 100kW DCFC. Specifically, we encourage you to establish a minimum of 150 kW charging as satisfactory to serve future vehicle needs along California's highway corridors, and require that at least one charger at each station location be capable of delivering 350 kW or more. Further, in light of the Atlas study and new market and policy context in California, as you update the AB 2127 charging assessment over the next two years, we urge you to do a deep-dive evaluation of ultra-fast charging and assess its contribution to the most cost-effective infrastructure network to enable 100 percent ZEV sales in California within the next 10-15 years.

2. Update Application Process to Accelerate Charger Deployment

CALeVIP is currently administered on a first-come, first-served basis, where applicants submit applications for funding at a stage in the project development process where it is unclear whether the project will be built in the near term, or ever. As a result, available funding gets quickly allocated – often within an hour of the portal opening – and long waitlists form, but projects do not necessarily get developed. For example, in the updated Clean Transportation Program Funding Plan, CEC shows (table 7) that through May 31, 2021, only 950 DCFC have been installed through the program since 2017, with an additional 5,711 stations "planned."

We advise that the program be modified so that the program awards post-construction rebates, similar to how LADWP administers EVSE rebates and CPUC awards funding for battery storage systems. This ensures that funding goes to projects that are built.

Alternatively, the CEC could maintain its current pre-construction commitments, but require that the project demonstrate legal site control (a lease) before applying, and other criteria to demonstrate that the project is likely to reach completion.

3. Adopt CCS as the non-proprietary DCFC standard at CEC-funded Stations

In recent years, the non-proprietary CCS standard has emerged as the DC fast charging connector of choice among 31 different automakers in North America, and continuing to fund investment in other charging connectors increases costs and undermines standardization. Electrify America greatly appreciates that the newest CalEVIP program is reducing requirements for CHAdeMO, such that now only one CHAdeMO connector is required per site. We also appreciate and strongly agree with the recognition in the AB 2127 Report that moving to a single connector type will reduce costs and improve convenience. However, some regional EVIP programs still require both CCS and CHAdeMO connector options, such as the Southern California Incentive Project[12] and Northern California Incentive Project,[13] and even requiring one connector per site increases costs without supporting the mass market deployment of ZEVs.

[12] CaleVIP What are the EV Charger Requirements?
[13] CalEVIP, Northern California Incentive Project.

Electrify America has a CHAdeMO charger at every station, and in Q3, CHAdeMO chargers delivered only 3.5% of the power dispensed at Electrify America stations in California, decreasing from 6% in 2020.

Additionally, as identified in the AB 2127 Report, the industry is moving away from CHAdeMO and aligning around the CCS standard in North America. Consider:

- Last year Nissan announced it will transition to CCS,
- Tesla has confirmed a CCS adaptor is coming to North America, and
- CARB's draft Advanced Clean Cars II regulations require CCS on all EVs by Model Year 2026.

At a minimum, we urge the CEC to apply the new site-level requirement for CHAdeMO to all existing and new programs on a go-forward basis. We further ask that the CEC consider removing the CHAdeMO requirement entirely as soon as possible and replace it with a CCS requirement instead.

4. Address Gaps in EVITP Related to Ultra-Fast Charging

To our knowledge, the statutorily-mandated CEC evaluation of whether the Electric Vehicle Infrastructure Training Program (EVITP) needs additional training and testing regarding ultra-fast charging stations has not been completed. Until the curriculum includes training for ultra-fast charging technology developed in coordination with the ultra-fast charging industry, we respectfully suggest the CEC prioritize EVITP certification requirements on those projects to which the curriculum is applicable.

5. Continue Supporting Permit Streamlining by Incorporating AB 970

CEC announced that it would favor regions with high AB 1236 compliance when allocating CALeVIP funding, and this was an effective policy encouraging local jurisdictions to streamline permitting and cut soft costs associated with station installation. In order to further cut soft costs and streamline station development, we urge that the CEC announce that this preference applies to all AB 8 funded programs and that the compliance expectation also applies to the newly adopted AB 970.

Comments on Proposed Future Projects

We appreciate the Commission exploring additional concepts to support EV drivers and the broader charging ecosystem. Below are comments on the specific proposed future projects discussed at the workshop.

Concept #1. Microgrids, Resiliency, and Charging

EV charging stations increase grid reliability and are flexible grid assets as they make the grid more resilient and far less likely to suffer outages. Electrify America recently installed onsite, behind-the-meter battery energy storage systems (BESS) at over 140 DC fast charging stations across the country, including more than 90 installations in California. These systems in total have more than 30 megawatts of energy storage capacity, representing the largest roll-out of onsite behind-the-meter battery energy storage coupled with ultra-fast DC chargers in North America. This investment has the potential to maximize renewable energy use as energy storage has the ability to help store excess renewable energy to be used in times when those renewable sources may not be available, and further leverage the tailpipe emissions reductions that follow from transportation electrification.

To achieve the State's transportation electrification goals, we encourage CEC to focus its light-duty EV funding on the deployment of cost-effective ultra-fast charging infrastructure in California, which requires a substantial capital investment. To the extent the CEC wants to enhance resiliency alongside that goal, we encourage a focus on funding battery storage installations at charging stations, which serve multiple purposes of reducing charging costs, grid impacts from charging, and providing improved resiliency and reliability. It may also choose to pair a Clean Transportation Program-funded initiative with other efforts, where the CTP program would support charging aspects and other programs could support microgrid or other grid resiliency aspects.

Concept #2. Local Government Fleets

Fleet charging operates in a variety of settings including fleet yards, curbside charging and parking garages. Recognizing that non-government fleets are high mileage, we encourage CEC to consider targeted support for non-government fleets, such as ride hailing fleets, delivery fleets, and others that may offer very high utilization and electrification benefits.

Public EV fleets require similar EVSE infrastructure – L2 chargers for overnight depot charging and ultra-fast charging along corridors to facilitate long trips – to private fleets and personal use EVs. Public fleet operators also often do not seek to own and operate charging equipment, preferring to procure charging as a service from the private sector, as they currently procure fuel for fleet vehicles powered by internal combustion engines. Establishing a new program for local government fleets may not be necessary. We urge the CEC to consider whether public fleet needs could be met by the broader EVSE rebate programs, perhaps with additional rebate value (bonus) for EVSE designed to specifically support the needs of public fleets.

Additionally, should this be selected, we urge the CEC to include as a condition of eligibility that local governments must have streamlined EV charging permitting processes in place. Any local government that is not in compliance with AB 1236 (2015) and AB 970 (2021) – codified in Government Code Sections 65850.7 and 65850.71, and which require cities and counties to adopt streamlined permitting procedures for electric vehicle charging stations (EVCS), including a streamlining ordinance and limiting review to health and safety matters only – should not be eligible to receive a grant under the program.

City and county streamlining status is reflected on the EVCS Streamlining Map. Recent analysis by the Governor's Office of Business and Economic Development (GO-Biz) has found poor local government compliance with AB 1236, with 75 percent of jurisdictions evaluated found to be out of compliance with the statutory requirements as of this date. As a result, California is not deploying as many EV charging stations as quickly as it could, putting in jeopardy the state's efforts to attain air quality standards required by state and federal law and to reach the greenhouse gas targets set by the Legislature. With this proposed project, local governments would be incentivized to adopt streamlined permitting procedures.

Concept #3. DC Fast Charging Corridors

We encourage the CEC to make ultra-fast reliable charging a major focus of its programmatic efforts. Based on the research and other reasons described above, we feel strongly that an increased focus on ultra-fast DC fast charging will support the most cost-effective, complete and equitable charging network for California. A greater focus on deploying more ultra-fast chargers will also serve to boost the reliability and resiliency of EV charging in California – not just for blackouts or grid events as described in response to the microgrids item, but also support EV drivers across a whole of other, much more common issues that might limit charging availability like traffic, high demand periods, outages at individual chargers, or other daily items.

Electrify America supports a well-structured EVSE rebate program to support ultra-fast corridor charging, and we have recommended changes to address oversubscription issues and to remove the current disincentives to investment in ultra-fast 350kW charging in the CALeVIP program. We do not recommend that California determine the specific corridors in which to invest, as California can now leverage the expertise of the private sector regarding the highway corridors on which to invest, and the gaps to be filled.

A rebate program for corridor charging could be effective if it required (1) ultra-fast charging, (2) non-proprietary CCS charging connectors, (3) demonstrated network performance capabilities, (4) charger redundancy, and (5) proximity to a state or Federal highway. Such a program could allow the State of California to leverage private sector investment to attain its goals of EVSE deployment in an expeditious manner, while implementing important lessons learned from previous investment.

Additionally, based on the research and automaker comments identified above, we encourage the CEC to prioritize 350 kW charging in all DCFC, and to require it as a minimum power level for DC fast chargers along transportation corridors. Specifically, we encourage CEC to establish a minimum of 150 kW charging as satisfactory to serve future vehicle needs along California's highway corridors, and require that at least one charger at each station location be capable of delivering 350 kW or more.

Concept #4. BESTFIT2

We think the best use of CEC funding, including to increase utilization of EV chargers as the market grows, is to focus available funding on deployment of chargers. Some elements of this item seem to overlap with the first concept on microgrids, and might be more appropriately funded through EPIC or other programs. We would support CEC including funding for batteries at charging stations as a means to reduce costs; however, we encourage that to be included as an element in EV charging incentive programs, rather than addressed through a one-off program.

Concept #5. High Density Level 2 Charging

As described above, research demonstrates that DC fast charging is more widely utilized by MUD dwellers and greater investment in ultra-fast charging reduces overall infrastructure costs. To the extent boosting charging confidence is a priority, that is also better served with increased DC fast charging.

Accordingly, we feel that the CEC's resources would be better spent on building out DC fast charging networks than high density level 2 charging, and encourage the Commission to avoid pursuing this concept. If the CEC does choose to pursue a high density Level charging program, we encourage the Commission to similarly support high density DC fast charging programs, in order to gain additional data and comparison points, which we fully expect would validate existing research results.

Concept #6. Low-Income Residential Charging

Electrify America supports investment in low income and disadvantaged communities. To date, nearly half of Electrify America's investments in California are in low income and disadvantaged communities.

We would support a low-income residential charging program that provides rebates for low-income residents to install a charger at their home. In cases where home charging is impractical or infeasible, such as for garage-less or driveway-less residents, we encourage CEC to focus on expanding access to ultra-fast DC charging as the most cost-effective and convenient solution for those drivers. CEC may wish to consider working with the charging industry to provide charging to low-income residents, as well, to support broader access to convenient, ultra-fast charging.

Concept #8. Second Block Grants

We strongly support a second block grant program as the most effective way to quickly expand EV charging access in California, subject to the five priorities for EV charging described above and listed here again for reference:

1. Address Spending Ratios that Lead to Under-Investment in Ultra-Fast Charging
2. Update Application Process to Accelerate Charger Deployment
3. Eliminate Outdated CHAdeMO Requirements
4. Address Gaps in EVITP Related to Ultra-Fast Charging
5. Continue Supporting Permit Streamlining by Incorporating AB 970

If the EV Fast Track and EV Jump Start programs would be analogous to similar proposed programs under the EnergIIZE program for medium- and heavy-duty charging, we have several additional recommendations related to the design of those programs. We look forward to participating in workshops in Q1/Q2 2022 to discuss the design of these programs further.

- EV Fast Track:
    - The initial EnergIIZE proposal does not include EV charging companies as eligible applicants. Many fleet owners and operators are not interested in owning and operating extremely sophisticated charging systems, and they seek to procure charging as a service. We encourage CEC to ensure that EV charging companies are eligible for EV Fast Track funding, both for EnergIIZE and a future light-duty EV charging program.
- EV Jump Start:
    - To the extent a Jump Start program prioritizes certain communities and applicants, we urge the CEC to broadly define those terms to provide the greatest reach and potential benefits in low income and disadvantaged communities, by:
        - Including both low income and disadvantaged communities and eligible priority communities
        - Allow investments that support a wide array fleets and drivers in those priority communities, whether or not the equipment is physically located in the community
    - The EnergIIZE program suggests a set-aside of 60% for investment in priority communities. While this is above the targets for low-income and disadvantaged communities established in state law, such a target may be appropriate if limited to the EV Jump Start program and if priority communities and eligibility is broadly defined as suggested above, in order to reach the most residents in those communities.

Concept #9. Signage for Charging Stations

We feel that the most effective way to support awareness around EV charging is to quickly deploy more chargers. However, we agree that signage, especially for DC fast charging along corridors, can add some value and comfort for drivers.

Electrify America has attempted to deploy signage; however, the roadblocks were sufficiently large that we had to deprioritize this activity. If California seeks to have private companies pursue signs in the future, the State should reduce the time and effort required to deploy signage and make it an extremely simple and standardized process across Caltrans regional offices and authorities having jurisdiction. We find value in company-branded signage, but that value has been difficult to realize due to the current cost or effort associated with deploying those signs.

Thank you again for the opportunity to comment on the funding project ideas. We look forward to working with you toward our shared goals of quickly and completely electrifying California's transportation sector. Please don't hesitate to reach out to me with any questions or to discuss any of these comments further.

Thank you,

Matthew Nelson
Director of Government Affairs
Electrify America