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LEVD Infrastructure Planning CCAC response

Additional submitted attachment is included below.

LDEV Infrastructure Allocation Workshop

California Energy Commission
Dec 2, 2021

FAST CHARGE CORRIDORS

Goal: To add EV charging corridors while increasing range confidence and the user experience at corridor charging stations

Possible Concepts

1. Additional corridors
    - New corridors with little or no DCFCs
    - Rural
2. Identify and fill corridor charging gaps
    - Reduce distances between charging stations
    - Build "range confidence"
3. Utilize stub outs for expansion
    - CEC installations included high-powered stub-outs
    - Reduce charger congestion
4. Drive-thru / Parallel charging stations
    - Accommodate pickups and trailers
    - Pull through

Questions

1. From the presented four possible concepts, how would you order them for level of importance?
    - Based on maps of existing EV infrastructure (EVI), option #3 seems the most practical and efficient. The biggest weakness of the current *non-Tesla* DCFC corridors is the transmission/generation infrastructures and number of charging ports.
        - If lower-power DCFC sites (< 100 kW) are not capable of upgrading to ≥ 150 kW, then new locations will be needed (option #1).
        - There are also a relatively small number of rural corridors that lack DCFC locations (see question 2 below)
        - Some existing DCFC corridor locations are not easily accessible for travelers and may require an added location.
2. Which corridors with little or no DC fast charging currently available would you prioritize an d why?

- Rural corridors that are most heavily traveled
    - Decision making driven by CalTrans data
    - Examples in the San Joaquin Valley include Hwy 33 (between Dos Palos and Cantua Creek), Hwy 43 (between Hanford and Shafter), Hwy 140 (between Gustine and Mariposa)

3. What should the minimum power level for DC fast chargers on corridors?
    - 150 kW

4. Are there other DC fast charger corridor concepts we should consider?

HIGH DENSITY LEVEL 2 CHARGING

- **Large scale** Level 2 charging installations
- Chargers located in **dense urban** areas
- **Highly visible** installations
- Increase **charging confidence** for EV drivers

Possible Concepts

Curbside Charging/Downtown

- Closely located charging network
- Next to areas of interest
- Convenient and easy to access

Parking Garage

- Large scale deployment
- Highly visible
- Close to arenas, retail or workplace
- Already common

Transportation Hubs

- Highly utilized hubs
- Supports multi-mode commuters

Questions

1. Which project type is most visible to drivers?

- In general, the concept of "highly visible" L2 to "increase charging confidence" is a disingenuous, short-term solution. While the visibility of L2 chargers may provide some level of confidence to *non-EV drivers*, those who drive EVs are keenly aware of the impracticality of L2 charging, unless at home or work.
- That said, the significantly lower cost of L2 vs DCFC could allow for some CEC-funded L2 installations in highly visible locations, like downtown curbside parking meters.

2. Which project gives drivers the most charging confidence?
    - Again, L2 projects need to build confidence but also be practical. We don't need a wasteland of unused chargers littering streets and park garages.
        - Transportation hubs that support commuters, like Park and Rides lots.
        - Curbside parking in highly trafficked area that's integrated with parking meters
            - This option may provide *convenience* and could build confidence in non-EV drivers, but does not support the everyday charging *needs* of actual EV drivers

3. What are the characteristics of the charging environment needed to shift a driver's attitude fro m **uncertain** about charging availability to **confident** about charging options?

4. Are there other project types we should be considering?

LOW INCOME RESIDENTIAL CHARGING

- High costs of installing electric vehicle service equipment (EVSE)
- Older housing stock requires significant electrical upgrades
- "Chicken and egg" (EVSE vs. vehicle acquisition)

Possible Concepts

1. Consumer rebate for at-home installation
    - Block grant implementation?
2. Funding electric vehicle service providers to find sites for and install charging
    - Peer-to-peer network chargers in driveways of low-income residences?

Questions

1. Are there target applicants besides electric vehicle service providers (EVSPs) or residents that we should be considering?
    - Yes, DCFC hubs at neighborhood grocery markets, mini-marts/gas stations, coffee shops or schools can service single- and multi-family housing with insufficient electrical infrastructure to support EVSE, similar to ICE gas stations. DCFC hubs also provide

opportunities for low-income supplements that reduce the cost to charge and overcomes the obstacles described in questions #2-4 below.

- A limiting factor to this approach is the ability of small businesses in DACs to come up with the up-front funds to pay for a DCFCs (about $100,000 per charger). The EVI incentive program would need a process to not only evaluate an application based on potential impact/benefit to the community, but also the applicant's need for up-front financing assistance.
- One concern is the average electricity price charged by DCFC operators (> $0.40/kWh). If the an EV travels 3 miles per kWh, the *economic* benefit is minimal (similar to 30 MPG ICE vehicle).

2. How can we provide EVSE options to garage-less or driveway-less residents?

3. What are the best approaches to low-income verification?

4. When focusing on low-income communities, how can we avoid green gentrification?

BLOCK GRANTS FOR LDEV CHARGING INFRASTRUCTURE

BG2 Goal: Quickly & efficiently fund and deploy EV charging station installations

Two distinctive block grants that should be different but collaborative

- "Fast Track"
  - Higher requirements to apply
  - Strict installation timelines
- "Jump Start"
  - Lower requirements to apply
  - Higher technical assistance

Possible Concepts

1. Regionally targeted
2. Statewide
3. Site or applicant specific
   - Multi-family housing
   - Disadvantaged / Low-income communities
   - Schools
   - DCFC corridors

- Public agencies

Questions

1. Are there other ways to differentiate the two future Block Grants?
   - What is the rationale for the proposed splitting into a "Fast Track" and "Jump Start" administrator? What would be the purpose and benefit of having equity outreach partners for Fast Track projects?
   - If projects are 70% equity-focused, as they should be, both program administrators will need to utilize a "jump start" strategy that includes outreach and engagement with lower-income DAC businesses and city governments.
   - Similarly, both administrators will need the flexibility of working in multiple sectors, including MFH, to maximally impact and benefit DACs.
   - Therefore, dividing up the work geographically seems the more straightforward and practical approach.
   - However, if equity-focused incentives remain at 50% of total CEC funding, Block Grants could be differentiated by DAC vs non-DAC.

2. Should projects be regionally targeted, statewide, or offer both?
   - Projects should be regionally targeted to enable effective outreach in DACs. There should also be a detailed assessment of existing and planned EVI, including CALeVIP1 "reserved" grants and other EVI programs, like *Electrify America*.

3. What other project concepts should be considered for light-duty EV charging infrastructure incentive projects?
   - While DCFC corridors should be prioritized, other sectors, including DCFC and L2 charging options at/near MFH and workplaces (including schools), should also have set-aside funding allocations.
   - The "first come, first serve" application process should be replaced by a more intentional process that evaluates the benefit and applicability of the proposed charging infrastructure (L2 vs DCFC) to ensure the greatest impact and long-term community benefit.
   - In regard to MFH, where feasible, DCFC hubs at nearby grocery markets, mini-marts/gas stations, coffee shops or schools should be prioritized over L2 located at MFH properties. While the State investment to install a DCFC is 15X greater than an L2 charger, a single, publicly accessible DCFC can serve as many EV drivers as 15 L2 charging ports located in a private MFH parking lot.
   - Approval of DCFC projects need to be coordinated not only between the two BG administrators, but with other entities installing DCFC in California (i.e. Electrify America).