DOCKETED	
Docket Number:	20-TRAN-04
Project Title:	Electric Vehicle Infrastructure Project Funding
TN #:	236235
Document Title:	Ecology Action Comments - Ecology Action Comment #2
Description:	N/A
Filer:	System
Organization:	Ecology Action
Submitter Role:	Public
Submission Date:	1/6/2021 5:28:37 PM
Docketed Date:	1/7/2021

Comment Received From: Ecology Action
Submitted On: 1/6/2021
Docket Number: 20-TRAN-04

Ecology Action Comment #2

Additional submitted attachment is included below.

Ecology Action Comments to CEC Docket #20-TRAN-04
Electric Vehicle Infrastructure Project Funding

Unlocking Equitable MUD EVSE Deployment at Scale

Vehicle electrification provides one of the most promising greenhouse gas (GHG) reduction strategies available today. However, without affordable home charging, many multifamily residents remain very unlikely to convert to an EV.[1] In fact, providing access to charging at home is the most influential way to encourage consumers to purchase EVs.[2] The current market for deploying EV-charging infrastructure in America, while successful in some sectors, is largely failing in multifamily properties, especially in low- and moderate-income communities.[3] For example more than half of all Bay Area residents live in multiunit dwellings (MUDs), while fewer than 10% of EVs are owned by MUD residents. Although the portion of total population living in MUDs decreases in less urban areas, the lack of charging and consequent lagging EV ownership by MUD residents exists statewide.

Economic factors and misaligned incentives are the primary market impediments. MUD charging installations, unlike energy or water efficiency retrofits, have little to no return on investment for the owner of the property, particularly in Equity low- and moderate-income housing. As such, relatively little MUD charging infrastructure has been installed, and companies in the private sector have avoided the market. The CEC's Lead Commissioner Report for the Clean Transportation Program specifically calls out this issue, "shared-use residential charging stations, which are predominantly used in MUD housing, still face barriers that impede PEV adoption. Projects at MUD housing have been historically underrepresented by applicants despite efforts to target incentives toward electric vehicle charging station installations at these locations."[4]

For any charging solution to be scalable in this market, it must be both hassle-free and delivered at virtually no cost to the MUD property owners. Ecology Action has conducted market testing on a turnkey direct install solution in the Bay Area that combines a very low-cost equipment configuration with an end-to-end installation service package. The preliminary testing[5] has served as a proof of concept, paving the way for scaled piloting that is needed now to further validate the solution's ability to address key market barriers.

Perhaps the most dominant barrier faced by property operators is the "hassle factor." All property operators are running businesses and the vast majority do not have bandwidth, expertise or financial

---

[1] Hardman, S. et.al. 2018. "A Review of Consumer Preferences of and Interactions with Electric Vehicle Charging Infrastructure." Transportation Research Part D: Transport and Environment 62: 508–23, p. 517.

[2] Ibid, p. 518.

[3] Muller, M. "California Approves Novel Low-Income EV Charger Program | NRDC", September 12, 2019. https://www.nrdc.org/experts/miles-muller/california-approves-novel-lowincome-ev-charger-program.

[4] Brecht, P. 2020. 2020-2023 Investment Plan Update for the Clean Transportation Program. California Energy Commission. Publication Number: CEC-600-2020-003, p. 37.

[5] https://ecoact.org/ea2020/wp-content/uploads/2020/11/Ecology-Action_Innovation-in-EV-Charging-for-MUDs_11.20.2020.pdf

motivation to undertake EVSE design, permitting, and installation. For a deployment solution to scale it must embed all of these end-to-end services into a single package that becomes an easy "yes" for the busy and focused MUD property operator. Such an approach (known as "Direct Installation") is used extensively to drive equity in the energy efficiency industry serving MUDs and other hard-to-reach sectors. We believe this model will be an essential foundational element to cracking the code of scalable and equitable MUD EVSE deployment as well. Once proven, the model can be deployed by many market actors as it currently is in the energy efficiency space nationally.

Secondly, many MUDs lack sufficient existing power capacity to install EV charging. This is likely because 80% of MUDs in California have less than 20 units, are more than 20 years old, and have very limited available panel capacity. Support for lower power EV charging (both L1 and L2) can help bridge this gap.

Matching charging equipment with driver need is essential. For example the current paradigm of providing a minimum of 40 amps to each EV capable space (as required by CALGreen) doesn't reflect actual charging behavior and is a hindrance to the future expansion of EVSE in MUDs. The average daily distance travelled in California is 24 miles[6] This data point is exemplified with San Francisco Bay Area vehicle miles travelled ("VMT") averaging 21 - 31 miles per day (as of 2015) and Los Angeles County VMT averaging 22 miles per day (as of 2017). 40-amp charging (e.g. Level 2) provides roughly 12-25 miles of range per hour of charging. Therefore, an EV that plugs in at a MUD property will charge for about 1-2 hours at this rate and then sit for the rest of the evening, exemplifying how the current CALGreen requirements are oversized for this long-dwell parking use case. Level 1 charging provides 40-50+ miles per 10-hour overnight charge, more than enough to meet the daily charging needs of a majority of drivers. Given the high proportion of plug-in hybrids with more limited battery capacity, a 40-50+ mile overnight charge represents the upper limit of charging need and for EVs with higher range capacity, periodic topping off at direct current fast chargers ("DCFC") becomes a viable complement, when needed.

Additionally, the industry is challenged by the chicken-egg scenario where potential EV drivers won't adopt the vehicle prior to knowing that they can reliably charge at home. In another pilot project, we are pairing vehicle demand generation with MUD EV installation to determine if we can increase EV uptake at MUDs. If the CEC and ARB combined efforts and jointly developed a grant program using ARB vehicle incentives and CEC MUD infrastructure support, we believe MUD EV adoption could be significantly increased. This area is probably the most critical for interagency cooperation and truly supports the multiple pillars in the ZEV Market Development Strategy.

In order to increase EV adoption we recommend a focus on both capital "E" Equity, where designated disadvantaged and income-qualified communities are served as well as the broader concept of lowercase "e" equity where naturally occurring underserved/disadvantage communities (such as the wider population of residents living in MUDs) are receiving proportional benefit. These residents pay taxes and are utility rate payers, yet most EV charging and vehicle programs have benefited those in single family homes. If California is to be successful in reaching the Governor's 100% ZEV goals by 2035, we must support MUD residents across the state so they can drive EVs. We support strong coordination between government agencies including CEC, CPUC, CARB, BAR, HCD, and a wide array of state and local agencies to bridge the gaps and accelerate this part of the market.

One of the core policy failures in MUD EV charging is that often current program rules do not meet the very unique stakeholder needs that exist in that environment. MUDs have a residential charging need yet

[6] 2018 California Public Road Data. The report indicates that 347 billion miles are travelled each year, divided by 39.5 million Californians, divided by 365 days yields roughly 24 miles per day.

they exist in a for-profit business setting. To succeed at encouraging EV adoption, any charging solution must be unquestionably available and always convenient to the would-be EV driver, while at the same time it must not distract the property owner from its core business function. With modest program adjustments or expansions to CEC, CPUC, CARB, and BAR programs, the State of California can support significant strides to rapidly scaling EV ownership in MUDs by aligning program rules with market needs.

The CEC has a unique opportunity to lead this effort with Electric Vehicle Infrastructure Project Funding. We estimate that by committing $5M-$7M will create a project of significant reach to begin to achieve scale and test deployment across multiple MUD markets with important investments in Equity based MUD and smaller MUD properties.

Thank you for the opportunity to provide comments to help maximize emissions reductions and propel us into a 100% ZEV future.