

**DOCKETED**

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*Comment Received From: Miles Muller*  
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**NRDC letter on CEC EVI PRO 3 workshop**

*Additional submitted attachment is included below.*

April 5, 2022

California Energy Commission  
Deputy Director Hannon Rasool  
Fuel and Transportation Division  
Docket Number 19-AB-2127  
715 P Street  
Sacramento, CA 95814

Posted at Docket 19-AB-2127

**Re: Natural Resources Defense Council Comments on the Electric Vehicle Infrastructure Projections in Assembly Bill 2127 Second Assessment Workshop (Docket Number 19-AB-2127)**

Deputy Director Rasool,

On behalf of the Natural Resources Defense Council (NRDC), and our more than 95,000 members in California, we appreciate the opportunity to comment on the EVI PRO 3 workshop (held March 16) to improve the 2023 version of the Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment. NRDC appreciates the Energy Commission staff's efforts to improve the 2021 version of this assessment as a key strategy to help achieve California's climate, air quality, and equity goals.

We agree with staff that EV infrastructure modeling is still in the early stages and that more data is needed. In that spirit, we offer a few thoughts and questions for consideration on ways to gain more insights and improve the results in this next round of AB 2127 modeling using EVI PRO 3:

- 1) We support staff's recommendation at the workshop to improve EVI PRO 3 by adding results for curbside charging (e.g., using streetlights and utility transformers) and for expanding the model to examine both unidirectional smart charging (V1G) and bidirectional charging (V2G and V2B).
- 2) Staff should conduct a deep dive into willingness to pay for charging and how costs for charging can be reduced in each charging segment covered by the EVI PRO 3 model. As price for charging is a key input in EVI PRO, determining the low-cost option is very important especially for under resourced communities.
  - We estimate that home charging is roughly three times less costly for EV drivers than away-from-home Level 2 or DC fast charging (DCFC), and that a similar situation exists for fleets. We base our estimate on an August 2021 EPRI study.<sup>1</sup>

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<sup>1</sup> NRDC analysis and EPRI study (Trinko, D.; Porter, E.; Dunckley, J.; Bradley, T.; Coburn, T. Combining Ad Hoc Text Mining and Descriptive Analytics to Investigate Public EV Charging Prices in the United States. Energies 2021.)

- The Commission should fund and collect new data on willingness to pay for charging, especially away-from-home and away-from fleet charging. For example, how much are those who do not have access to low-cost off-street parking at night willing to pay for public Level 2 charging or DC fast charging?
  - The Commission should consider modeling additional sensitivities to see if it is possible to reduce the up-front and operating costs (for example—25 kW charging DC at fleet and curbside locations, charging transportation network company (TNC) EVs at homes overnight and sharing of stations between light and medium/heavy duty EVs in public or private locations).
  - It would be especially helpful to gain a deeper understanding of the travel and charging needs for hard-to-serve markets (e.g., those who live in large apartments and condos, those who park on the street near their homes, low-income EV drivers, rural EV drivers, renters in both single-family residences and multi-unit dwellings) and a more refined breakdown on their access to charging at residences.<sup>2</sup>
  - Unfortunately, no one knows what the low-cost or best fit solution for multi-unit dwellings (MUDs) is and a lot of work on data collection, pilots and best practices will be needed. Staff should collect as much data as possible (e.g., surveys) and conduct more sensitivities to better understand the low-cost solutions and willingness to pay for charging at different locations and prices. Potential solutions to MUD charging<sup>3</sup> include:
    - Level 2 charging in MUD assigned parking
    - Level 2 charging or DCFC common area shared parking at MUDs
    - Curbside street parking (level 2 or DCFC)
    - TNC charging lots
    - Nearby DCFC (such as at churches or city lots)
    - MUD only charging at workplaces (behind key-card gates) or
    - Using public transportation, e-bikes or TNCs only.
  - The Commission should survey the need for panel upgrades, especially in older homes.<sup>4</sup>
- 3) Staff should clearly divide the output from EVI PRO 3 modeling to show those who have access to charging off the street at homes and fleets compared to those who don't.
- It appears that in the future most of the need for charging in the EVI PRO 3 model will be for those who don't have easy access to charging at home. If so, this should be made clear in the results in order to help policy makers better understand the situation and develop policy solutions.

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<sup>2</sup> For example, based on detailed size of the MUD, or number of cars in the household.

<sup>3</sup> Many of these solutions could also apply to renters in single family homes or those in denser areas that use street parking at night.

<sup>4</sup> This could include the need for weatherization and other energy efficiency upgrades as well as building electrification.

- We believe any definition of “access” should differentiate between 1) potential EV drivers who are owners and renters of residences and fleets, 2) drivers with the potential for EVs that can share a charging space at home and those who can’t, 3) drivers who must park on the street and those who can’t, 4) and drivers who have assigned parking at multi-unit dwellings and those who don’t.<sup>5</sup>
- 4) Staff should assume much less plug in hybrid electric vehicles (PHEV) charging in EVI PRO 3.
- We appreciate that staff is planning to lower the assumption that PHEVs will use opportunity charging 100% of the time. Based on the above comments on access, we believe different types of PHEV drivers will have different needs for charging based on their access to home charging. Those with home charging (with a PHEV or battery EV) should be very price sensitive to the cost of away-from-home charging and not need much away-from-home charging, while those without access to home charging may drive a significant need for charging (by PHEVs or BEVs) as modeled by EVI PRO 3.
  - We suggest that it would be beneficial to see cross tab results in order to see how much the different types of EV drivers (fleets, attached and detached homes, large apartments/ condos, and street-parkers) are charging at the various locations examined in the report (fleets, public Level 2, public DCFC, MDU, street parking, workplaces).
- 5) We note that EVI PRO 3 model does not include charging for road trips or for transportation network companies (TNCs) but suggest that our recommendations above should also impact the assumptions and outputs from the CEC’s models for road trips and TNCs.

We appreciate the consideration of these comments and look forward to continuing to work with the CEC and staff on accelerating widespread transportation electrification in California.

Sincerely,

/s/ Miles Muller

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<sup>5</sup> For example, many duplexes, triplexes, small apartments, condominiums and townhomes have assigned parking.