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January 20, 2021

California Energy Commission
Re: Docket No. 20-IEPR-01
1516 Ninth Street
Sacramento, California 95814-5512

Submitted to on-line portal: <https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=20-IEPR-01>

Re: Comments on the CEC Draft 2020 IEPR Update, Volume 1

The California Electric Transportation Coalition (CalETC) appreciates the opportunity to provide feedback on the Draft 2020 Integrated Energy Policy Report (IEPR) Update, Volume 1 (Draft Report) on California's transportation future and the transition to zero-emission vehicles. We greatly appreciate the time and effort it took to organize the workshops and prepare this Draft Report.

CalETC supports and advocates for the transition to a zero-emission transportation future to spur economic growth, fuel diversity and energy independence, contribute to clean air, and combat climate change. CalETC is a non-profit association committed to the successful introduction and large-scale deployment of all forms of electric transportation. Our Board of Directors includes representatives from: Los Angeles Department of Water and Power, Pacific Gas and Electric, Sacramento Municipal Utility District, San Diego Gas and Electric, Southern California Edison, Southern California Public Power Authority, and the Northern California Power Agency. In addition to electric utilities, our membership includes major automakers, manufacturers of zero-emission trucks and buses, electric vehicle charging providers, autonomous electric vehicle fleet operators, and other industry leaders supporting transportation electrification.

Vehicle grid integration (VGI) is a complex topic that requires coordination between all sectors of the electric transportation (ET) industry, government, non-profit organizations, and community stakeholders. CalETC believes that with the right policies in place, VGI can expand access and reduce the cost of charging, optimize the grid, and improve the charging experience.

1. CalETC recommends updating the sections of the Draft Report pertaining to VGI to reflect the many recent developments and advances in VGI.

We recommend that descriptions and, to the extent necessary, details of the following points are included in the next draft of the IEPR:

- CARB's Low Carbon Fuel Standard recently enacted smart charging credits and low carbon intensity electricity credits monetize and provide greenhouse gas signals for smart charging and renewable integration. These credits are additive to the recently updated time-varying rates from the three investor owned utilities (IOUs) that encourage residential and commercial charging at appropriate times.

- SB 676 proceedings for both the CEC and CPUC on VGI, emphasizing the broad definition of technology neutral VGI.
- The CPUC recently adopted decisions that direct up to \$45M for VGI pilots (including V2B), demonstrations, and studies. As well as a 10-year strategy on VGI (D-20-12-029) and potentially additional VGI (including V2B) funds for TE resiliency projects over the next decade and beyond (D-20-12-027).
- The Final Report of the VGI Working group (VGIWG) from June 2020, and the CPUC approved funding (D-20-12-029) to continue the next steps from the VGIWG.
- In May 2020, the CPUC opened a rulemaking (R-20-05-12) that is considering V2B issues and has a working group that is continuing to consider changes to Rule 21 (interconnections) for AC vehicle to grid (mobile inverters on EVs).
- The 2020 omnibus spending bill that was signed in December 2020 has funds for VGI programs at USDOE.
- The CEC's EPIC program and the utilities have recently funded or are in the process of funding many VGI projects totaling over \$45M, including GFO 20-304 for evaluating bi-directional energy transfers and distributed energy resource integration for medium- and heavy-duty fleet electrification, GFO 20-605 on BESTFIT innovative charging solutions, utility funding, among other sources.

Additionally, we recommend the IEPR describe how the CEC is working on VGI with the CPUC, CARB, USDOE and the utilities to actively support each other's projects and avoid duplication.

2. CalETC supports the Draft Report's focus on equity and the need to address soft costs in charging and we recommend adding additional solutions to address soft costs that take a neutral approach to technology and business models.

The Draft Report correctly points out that home charging can be equivalent to \$1 per gallon. We recommend the Draft Report also make clear that away from home charging is about \$0.40 per kWh when all the fees are included, which using the IEPR's example is about \$4 per gallon equivalent.¹ Due to the high cost of away from home charging and the uncertain net value of VGI use cases, in a joint letter to the CEC and CPUC, a diverse group of stakeholders requested an effort be made to better understand the cost of charging and VGI in all segments and address how to reduce these costs.² On December 17, 2020, the CPUC issued a decision directing IOU funding for such a cost study.³ We recommend that the Draft Report recognize and continue to monitor the results of the CPUC and IOU efforts to study the cost of charging and VGI use cases.

¹ *Presentation on Cost to Charge from the Plugshare Data Set*, EPRI, 2017; Available at: <https://www.epri.com/#/pages/product/3002011098/>. This nation-wide study consolidated electricity costs and fees for away-from-home charging into a common metric so that pricing could be more easily compared.

² See July 17, 2020 comments from CalETC, Plug In America, Natural Resources Defense Council, Electric Auto Association, Adopt A Charger, Ford Motor Company, Toyota, Nissan North America, Orange Charger and Kitu Systems. Available at Docket 20-IEPR-02.

³ See D-20-12-029 at 37-38.

As the Draft Report points out on page 85, the soft costs of charging are a concern, and many agencies are contributing to finding solutions for this issue. The Rocky Mountain Institute (RMI) study mentioned by the Draft Report found soft costs are about 64% of total costs, charging networks have fees for data and network contracts between \$284-\$490 per station per year and found soft costs to be much lower in Europe.⁴ We recommend these insights be added to the Draft Report. These data and network costs are too high for all drivers and solutions must be found to lower these costs. Subsidies to low-income EV drivers are not the only solution, as reducing charging and VGI costs will lower the need for subsidies. The joint letter (referenced above) recommended two solutions that we believe should be in the Draft Report:

- a. Additional marketing, education, and outreach on the various types of self-managed charging (analogous to those who self-manage their own air conditioner thermostat).
- b. Accelerate automation of charging with a technology and business-model neutral approach to network charging (V1G and V2G). This approach is consistent with SB 676 directives and the current method utilities take with smart thermostats and smart inverters where cloud aggregators can handle many different open and proprietary VGI communication protocols. For example, many different cloud aggregators compete (individual or groups of automakers or charging providers as well as microgrids and individual building energy management systems) and send VGI signals to the utilities, the California Independent System Operator and the EV driver.

3. CalETC recommends the Draft Report acknowledge that there are many more VGI studies than listed in the Draft Report (pages 97-98) and that the CPUC is seeking to shed light on the value of VGI use cases with large scale demonstrations and studies, such as the VGI Data Program.

While the California Interagency VGI Working Group (VGIWG) made some progress on VGI value, we still do not have a good understanding of VGI net value for the many VGI use cases. The CPUC in D-20-12-029 allowed funding to continue the next steps recommended by the five-agency VGIWG including a long-sought VGI Data Program to resolve the many conflicting studies on VGI net value.⁵ The CPUC in D-20-12-029 also called for up to \$45M in funding by the three IOUs for VGI pilots, demonstrations, and studies that will provide more data on net value of VGI. Also, the CPUC in D-20-12-027 directed the IOUs to fund TE resiliency projects using the utilities' holdback LCFS credits including potentially funding for bi-directional VGI projects. CalETC recommends the Draft Report acknowledge that there are many more VGI

⁴ See pages 8, 20 and 45. Available at <https://rmi.org/insight/reducing-ev-charging-infrastructure-costs/> "Even small incremental costs, like a \$20 per month networking fee for a nonresidential charger, can eliminate the cost advantage of owning an EV over a conventional petroleum-powered vehicle when those costs are passed along to drivers." "We strongly suspect that soft costs are a big part of the reasons why charger installation costs in the United States are three to five times the cost of charger itself, a much higher ratio than that seen in Europe (even after allowing for some charging hardware in Europe having higher costs)."

⁵ Policy 4.06 was modeled after a 2017 IEPR recommendation and received strong support from the VGIWG. Policy 4.06 calls for funding an on-going, multi-year program to convene VGI data experts to study lessons learned, quantify VGI/DER net value, fund new data sources, and study other VGI topics. See Table 8, available at <https://gridworks.org/materials-produced-by-the-vgi-working-group/>.

studies than those listed in the report and there are ongoing efforts to organize data and lessons learned on VGI studies.

4. CalETC recommends removing the five VGI recommendations in the Draft Report on page 101.

We strongly recommend removing the five recommendations on page 101 because they do not appear to have been vetted in any public process. If these recommendations were part of the previous VGI Roadmap, they are out of date given the developments made in 2019 and 2020. We strongly believe that any VGI recommendations from the CEC should be workshopped as part of the proposed update to the State's VGI Roadmap in 2021 and reflect the dramatic progress VGI has made in California.

5. CalETC agrees that connector standardization (page 84) is a complex topic and additional workshops and dialogue with stakeholders are needed.

6. CalETC has serious concerns regarding the proposed mandate on utilities based on the "avoided cost of charging" (pages 95-96). As described in the Draft Report, we do not understand the concept and have serious concerns about its effectiveness.

CalETC believes the "avoided cost of charging" concept was previously called Transportation Electrification Regulatory Policies Act (TERPA) in earlier CEC workshops. We participated in those workshops and have had follow-up meetings between CEC staff and CalETC's VGI experts on the TERPA concept. We do not understand how either the TERPA concept or the "avoided cost of charging" concept will effectively create access to affordable charging infrastructure and believe the complexity of the concepts could create barriers to access and increase costs.

7. CalETC recommends the Draft Report strike a more inclusive tone regarding assertions about utility infrastructure programs. It is incorrect to suggest that choosing between utility and non-utility programs is "an either-or choice," rather there is a beneficial role for both types of programs.

We are concerned about the section titled "Moving from a Public and Utility-Dependent Funding Model to Market Sustainability" (pp. 90-96). We do not disagree that the utility role should evolve over time, but there are many options and considerations (e.g., accelerating all types of transportation electrification (TE) per SB 350, impact on ratepayers, availability of public funds, new laws from the Legislature such as AB 841 and SB 676, and the potential for a distribution services market). We recommend the Draft Report explain the beneficial roles of utilities, government, and the private sector in advancing TE and VGI, and perhaps, shed light on the above complexities.

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We greatly appreciate the opportunity to provide feedback on the Draft Report and thank you for consideration of our comments. Do not hesitate to contact me if you have any questions.

Best regards,

A handwritten signature in blue ink, appearing to read 'K. Corby', with a long horizontal flourish extending to the right.

Kristian Corby, Deputy Executive Director