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EVgo Comments on Draft Scoping Order

Additional submitted attachment is included below.



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February 28, 2019

California Energy Commission
Docket Unit, MS-4
Re: Docket No. 19-IEPR-01
1516 Ninth Street
Sacramento, California 95814-5512

RE: 19-IEPR-01- 2019 Scoping Order

Dear Commissioner Scott:

EVgo commends the California Energy Commission (CEC) for its continued leadership in establishing California as the undisputed leader in transportation electrification. EVgo is proud to serve as a partner to the CEC and other industry partners to deploy our nation-leading public electric vehicle (EV) charging infrastructure enabling more Californians to access the benefits of EVs today. Due in large part to our collaboration with the CEC and other state agencies, more than 90% of Californians now live within 35 miles of an EVgo fast charging station. Nationally, the U.S. Department of Energy announced on October 22, 2018 that EVgo has the largest number of DC fast charging stations of any network in the country. To date, we have over 1100 fast chargers in 66 metropolitan markets, with nearly half of our fast charging network in California.

EVgo applauds the CEC for featuring transportation prominently in the 2019 Integrated Energy Policy Report (IEPR). Below is EVgo's response to the request for public comments on the Draft Scoping Order issued on February 14th, 2019. Our responses focus on the transportation section of the Draft Order.

I. Discussion of the success and benefits the Energy Commission's Alternative and Renewable Fuel Vehicle Technology Program (ARFVTP) and, more broadly, the state's efforts to reduce GHG emissions from the transportation sector.

As the national leader in public fast charging,¹ EVgo supports the ARFVTP, especially as it relates to CALeVIP, which is critical for increasing the number of fast chargers to propel the state toward its 10,000 fast charger goal by 2025. EVgo has been an active participant in stakeholder discussions related to the development of the 2019-2020 ARFVTP investment plan and suggested several improvements that would help to further scale charger deployment and enable more electric vehicle miles traveled.²

Notably, as the CEC develops its 2019 IEPR and assesses the benefits, successes, and also possibilities of programs under ARFVTP, EVgo would like to highlight the role of light duty fleet charging and its ability to provide grid benefits and reduce solar curtailment events.

In 2018, EVgo increased its volume of electric miles powered by 88% compared to 2017, charging more than 75 million miles through its public network of more than 1,100 DC fast chargers across 34 U.S. states and 66 metropolitan markets. More than a third of the miles fast charged in 2018 were to light duty vehicle (LDV) fleets, comprised of rideshare, carshare, and delivery vehicles.

After analyzing its 2018 data with its LDV fleet partners, EVgo found that LDV fleets on EVgo's public

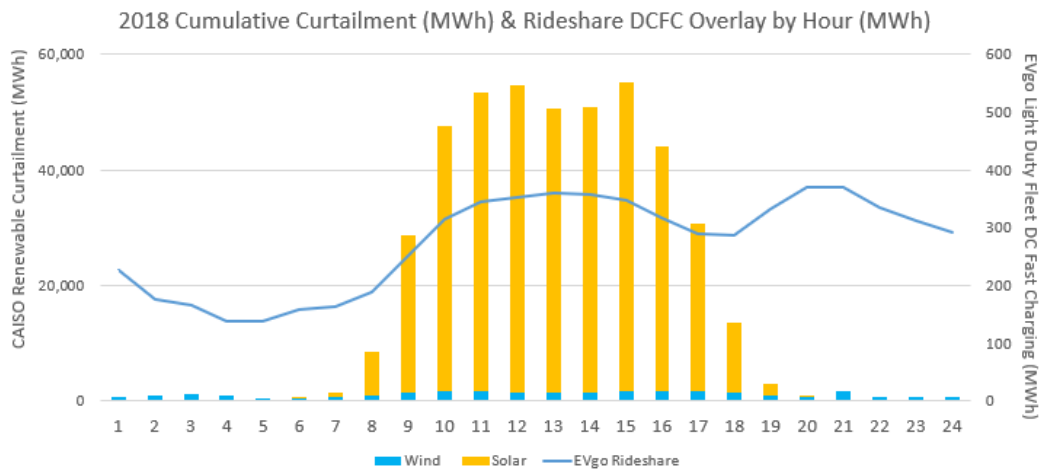
¹ <https://www.energy.gov/eere/vehicles/articles/fotw-1052-october-22-2018-four-networks-maintain-over-60-22343-level-2-and-dc>

² See 18-ALT-01, EVgo comments from 11/21/2018, 2/22/2019

network in California reduced midday renewable energy curtailment by gigawatt-hours (GWh), confirming a demonstrable and material benefit to the grid. Comparing the cumulative annual load profile by hour from EVgo's LDV fleet fast charging with the CAISO 2018 cumulative curtailment by hour demonstrates the alignment of LDV rideshare fast charging during midday hours.

Fundamentally, LDV fleet drivers seek to maximize driving time and revenue during the morning and evening rush hours and maximize charging midday and at night. During 2018, EVgo's data demonstrates CAISO system benefits, even without price signals, to align driving with peak retail pricing or peak wholesale demand, indicating the opportunity to improve the LDV fleet fast charging profile further.

The graph below reports EVgo's cumulative 2018 LDV fleet fast charging in MWh (blue line) aligning with the cumulative CAISO renewable curtailment in GWh. More than 45% of LDV fleet fast charging was performed during peak solar hours from 9 am through the 3 pm hour with more than 30% of charging during nighttime hours from 8 pm through the 4 am hour.



Sources: CAISO Curtailment http://www.caiso.com/Documents/Wind_SolarReal-TimeDispatchCurtailmentReportDec31_2018.pdf
Rideshare, 2018 EVgo fast charging operational data



The 2018 operational data from EVgo's fast charging for LDV fleet demonstrates:

- 1) Elevated midday demand for fast charging, mitigating solar curtailment;
- 2) Reduced charging during the afternoon ramp, as drivers return to driving during rush hour;
- 3) A double benefit to the grid by reducing the depth of the duck belly as well as reducing the absolute ramp requirement during the duck neck period.

Based on the load profile shape shifting over the course of 2018, EVgo expects that congestion on its public network in high demand areas in the second half of the year pushed charging later into the afternoon on average, indicating that the natural preference without congestion would further reduce afternoon rush hour charging and concentrate additional charging activity during peak solar.

EVgo sees further opportunity to provide benefits to the grid from fast charging LDV fleets in programs under the ARFVTP and is open to further data sharing with CEC staff throughout the IEPR development process.

II. Update on the status of the zero-emission vehicle market and charging infrastructure and an exploration of the infrastructure needed to meet the state's goals (as part of implementing Assembly Bill 2127 [Ting, Chapter 365, Statutes of 2018])

EVgo thanks the CEC for its leadership on implementation of AB 2127. EVgo and several other stakeholders commented on the importance of the AB 2127 process as part of the OIR proceeding at the California Public Utilities Commission (CPUC).³ We would encourage staff, in preparation for the IEPR, to review comments on the AB 2127 process filed in that related docket at the CPUC.

As part of AB 2127, EVgo encourages the CEC to work with the CPUC to ensure that an accurate assessment is conducted not only at the state level, but also by utility territory, to both measure progress made to date and guide accurate sizing of future utility applications at the CPUC. While utility applications and party testimony often extrapolate from data provided by the EVI-Pro model, the model is not currently designed to include an accurate assessment by utility territory. Staff's work in this area would provide much-needed analysis and guidance to applications being filed at the CPUC.

Additionally, as numerous charging gap analyses have emerged over the last several years, we would note that several have missed the impact of light duty fleets on public networks, thereby significantly underestimating the infrastructure needed to enable electrification and meet state goals. EVgo recommends that the AB 2127 process, unlike most studies to date, include both personal use vehicles and LDV fleet drivers, particularly rideshare drivers whose vehicle miles traveled are 3 to 7 times that of personal use drivers.

One such example of a gap study missing the impact of LDV fleets was a January 2019 report from the International Council on Clean Transportation (ICCT), entitled "Quantifying the Electric Vehicle Charging Infrastructure Gap Across U.S. Markets," which projected 10,000 DC fast chargers (DCFC) will be required, out a total needed 195,000 chargers, across the 100 most populous U.S. metropolitan areas by 2025. This ICCT report focuses on charging of *personal use vehicles* and explicitly acknowledges that the charger gap of 10,000 DCFC was based on available 2017 data and proposes additional needed analysis: "Future research could also consider the impacts of many intersecting developments, such as electric ride-hailing fleets, smart charging to mitigate grid impacts, and perhaps autonomous vehicles in longer-term models." In fact, a week later, also in January 2019, ICCT released a report emphasizing the benefits of shared mobility electrification, concluding: "Even without purchasing incentives, BEVs will become the most economically attractive technology for ride-hailing operations in the 2023–2025 timeframe."

EVgo applauds the ICCT analytical methodology and conclusions regarding the scale of personal use EV driver demand for fast charging by 2025. By adding a conservative forecast of 100,000 LDV operating as fleets in car share, rideshare, delivery, among other purposes, in 2025, and a 10:1 LDV fleet to DCFC ratio, demand would increase by an additional 10,000 fast chargers. With more than a million U.S. rideshare vehicles in operation in 2018, 10% compound annual growth in rideshare vehicles would yield in 2025 approximately 2 million rideshare vehicles in operation, and 100,000 EVs of that LDV fleet would represent a 5% share. ICCT concludes that growth in fast charging infrastructure will be a barrier to electrification of the LDV rideshare fleet, recognizing: "[W]hen electric vehicles reach hybrid ownership cost, companies will need to deploy charging networks, with policy support, to meet the specific charging needs of growing ride-hailing fleets." EVgo

³Reply Comments of Siemens, *Order Instituting Rulemaking to Continue Development of Rates and Infrastructure for Vehicle Electrification* [R.18-12-006] (filed Feb. 26, 2019), at p. 4.

heartily agrees and is leading the way to enable electrified rideshare by accelerating our network growth of both public and dedicated fast charging.

The outsized need of fast chargers to enable LDV fleet electrification should be taken into consideration for the AB 2127 analysis and any subsequent studies on infrastructure gaps. This need was echoed by several stakeholders in response to the OIR issued by the CPUC in December 2018.⁴⁵ EVgo again encourages staff to review that docket for additional information and stakeholder discussion on AB 2127.

III. Update on the Vehicle-Grid Integration (VGI) Roadmap as a follow-up to a recommendation in the 2017 IEPR.

While most of the VGI discussions to date have been focused on Level 2 charging, EVgo offers itself as a resource to staff as it relates to EVgo's partnership with UC San Diego (UCSD) as part of a technology demonstration project funded by the CPUC. The partnership combines the fastest charging technology for electric vehicles with second-life battery energy storage and the integration of solar energy to mitigate impact on the UC San Diego microgrid during peak hours.⁶ One of the key takeaways through this demonstration project has been the importance of price signals, which can greatly influence charging at given locations and times.

Conclusion

EVgo thanks the CEC for the opportunity to provide input on this investment plan and extends itself as a resource to the Commission and advisory committee members in further planning.

Sincerely,



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⁴Comments of Uber, *Order Instituting Rulemaking to Continue Development of Rates and Infrastructure for Vehicle Electrification* [R.18-12-006] (filed Feb. 4, 2019), at p. 6-7.

⁵Comments of Lyft, *Order Instituting Rulemaking to Continue Development of Rates and Infrastructure for Vehicle Electrification* [R.18-12-006] (filed Feb. 11, 2019), at p. 7.

⁶<https://www.evgo.com/about/news/evgo-wins-energy-storage-north-america-2016-innovation-award/>