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G&E comments of saff workshop on V2B

Additional submitted attachment is included below.

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February 16, 2020

California Energy Commission
Energy Research and Development Division, EPIC
Fuels and Transportation Division
Docket Number 20-MISC-01
1516 9th Street
Sacramento, CA 95814

Re: Pacific Gas and Electric Company Comments on the January 25 Staff Workshop - Vehicle-to-Building (V2B) for Resilient Backup Power (Docket Number 20-MISC-01)

Pacific Gas and Electric Company (PG&E) would like to express its appreciation of the California Energy Commission's (CEC) invitation to speak and present at the January 25 staff workshop on vehicle-to-buildings (V2B) for resilient backup power. PG&E also appreciates the opportunity to provide additional comments on this topic.

PG&E supports the CEC facilitating discussion of market, technology, and regulatory needs and barriers to deploying bi-directional plug-in electric vehicles (PEVs) and chargers capable of powering critical loads in commercial buildings and homes during electric grid outages such as public safety power shutoff (PSPS) events. PG&E encourages the CEC to continue to host these events and to convene automotive companies, charging equipment manufacturers, charging service providers, utilities, and representatives of state agencies.

PG&E believes that building public awareness about the additional benefits of electric vehicles (EVs) is critical to the goal of advancing clean mobility and vehicle-grid-integration (VGI). Being able to openly discuss the challenges and opportunities of the VGI use cases, such as vehicle-to-home/building, greatly contributes towards advancing this goal.

PG&E believes that the value of EVs goes beyond transportation purposes. Our service territory is greatly affected by extreme weather conditions. While PG&E's efforts have continued to decrease the number of customers impacted by PSPS events, it is expected that extreme weather conditions will continue to occur. PG&E believes that EVs could help mitigate the effects of power outages and create more resilient communities. In addition to providing backup power to customers, vehicle-to-home/building (V2H/B) is a zero-emission alternative to temporary diesel generation. V2H/B could also be the first step to unlock the financial value of vehicle-to-grid (V2G).

PG&E believes that V2G would bring additional financial benefits to the customer and to the grid. V2G would provide customers new revenue streams by enabling EV market participation and could contribute to flatten the duck-curve.

PG&E's research project funded by the CEC's Electric Program Investment Charge (EPIC) Program called "Test Smart Inverter Enhanced Capabilities --Vehicle-to-Home," also referred to as EPIC 2.03b[1], proves that V2H/B and V2G are technically feasible, safe, and provide value to the customer. The EPIC 2.03b project also shows customers' increased interest in using EVs as backup power during emergency situations.

However, V2H/B and V2G technologies are still nascent and barely commercially available. More research is needed to collect data that helps better understand these technologies. PG&E encourages the CEC to continue to explore the following:

- Costs associated with V2B/H, including incremental cost due to bidirectional capability;
- Installation cost and invertor cost;
- Safety of home chargers and communication standards;
- Combination of V2H/B and other distributed energy resources (DERs);
- Use of EVs telematics for V2B/H and EV-home-energy management systems;
- Alternate current (AC) technology versus direct current (DC) technology;
- Communication standards and cybersecurity;
- Building codes that would enable safe operational practices;
- And Financial and non-financial signals that would incentivize customers to use these technologies.

PG&E appreciates the time and effort that the CEC took to organize the staff workshop on January 25 on V2B for Resilient Backup Power, the invitation to present PG&E's perspectives, and the opportunity to provide additional comments. Please do not hesitate to contact me if you have any questions.

Sincerely,

Licha Lopez

[1] Pacific Gas & Electric Company, EPIC Final Report, EPIC 2.03b, Test Smart Inverter Enhanced Capabilities – Vehicle to Home, 2018, https://www.pge.com/pge_global/common/pdfs/about-pge/environment/what-we-are-doing/electric-program-investment-charge/PGE-EPIC-Project-2.03.pdf