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Vehicle-to-Building for Resilient Backup Power

Policy Context and Opportunities to Accelerate Deployment

California Energy Commission

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California Public
Utilities Commission

CPUC Guiding Principles and Goals

- Ensuring just and reasonable rates for participating and non-participating customers
 - Avoid shifting costs between ratepayers
- Maintaining safety and reliability of electric grid – physical and cybersecurity
- Supporting deployment of distributed energy resources in locations where they provide the greatest benefits
- Reduce impacts of public safety power shutoffs on critical facilities, vulnerable customers, and disadvantaged communities in high fire threat districts
- Improve both reliability and resiliency of electric grid
- Accelerate the use of VGI for resiliency purposes

CPUC Interconnection Proceeding

- R.17-07-007 Order Instituting Rulemaking to Consider Streamlining Interconnection of Distributed Energy Resources and Improvements to Rule 21
 - D.20-09-035 adopted multiple proposals to support V1G, V2G-DC, V2G-AC
 - V1G with no discharge capability is a load, not generation – Rule 21 does not apply
 - V2G-DC EVSE limited to operating in charge-only mode and meeting requirements can interconnect under Rule 21
 - In future, with permission to operate from the utility, bidirectional mode could be enabled
 - V2G-AC system pilots to be exempt, on a temporary basis, from Rule 21 smart inverter requirements

CPUC Vehicle Electrification Proceeding

- R.18-12-006 Order Instituting Rulemaking to Continue the Development of Rates and Infrastructure for Vehicle Electrification
 - D.20-12-027 requires IOUs to annually expend up to 20% of LCFS holdback proceeds on resiliency projects (if not spent on equity projects) that will benefit future or current EV drivers in California
 - D.20-12-029 adopted accelerating use of EVs for bi-directional non-grid-export power and PSPS resiliency and backup as a non-SB 676 VGI strategy
 - D.20-12-029 requires IOUs to report on efforts to accelerate use of VGI for resiliency purposes

CPUC Microgrids Proceeding

- R.19-09-009 Order Instituting Rulemaking Regarding Microgrids Pursuant to Senate Bill 1339 and Resiliency Strategies
 - D.21-01-018 requires IOUs to define criteria and evaluation process to assess safety and reliability of low-cost electrical isolation technologies for backup power applications
 - Staff concept paper section 7.5 discusses barriers to integration of EVs within a microgrid: EVs as controlled load, V2G, V2B or V2H During Power Failure/PSPS
 - If V2B or V2H can occur when microgrid in grid connected mode or within an in-front-of-meter microgrid, likely same requirements as V2G-DC and V2G-AC
 - In single-customer microgrid, where the entire island is behind one utility meter, where grid isolation is achieved by equipment independent of the EV or EVSE (e.g., break-before-make transfer switch), and V2B or V2H can only occur during island mode, it is likely some requirements will not be applicable