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Docket Number:	16-OIR-06
Project Title:	Senate Bill 350 Disadvantaged Community Advisory Group
TN #:	239391
Document Title:	Presentation - Item 4 Vehicle to Grid Integration overview August 2021 DACAG Meeting
Description:	N/A
Filer:	Dorothy Murimi
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	8/19/2021 2:02:50 PM
Docketed Date:	8/19/2021



ITEM 4

Vehicle to Grid Integration overview

CPUC Vehicle-Grid Integration Decision and Equity

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DACAG August 20, 2021 meeting



California Public
Utilities Commission

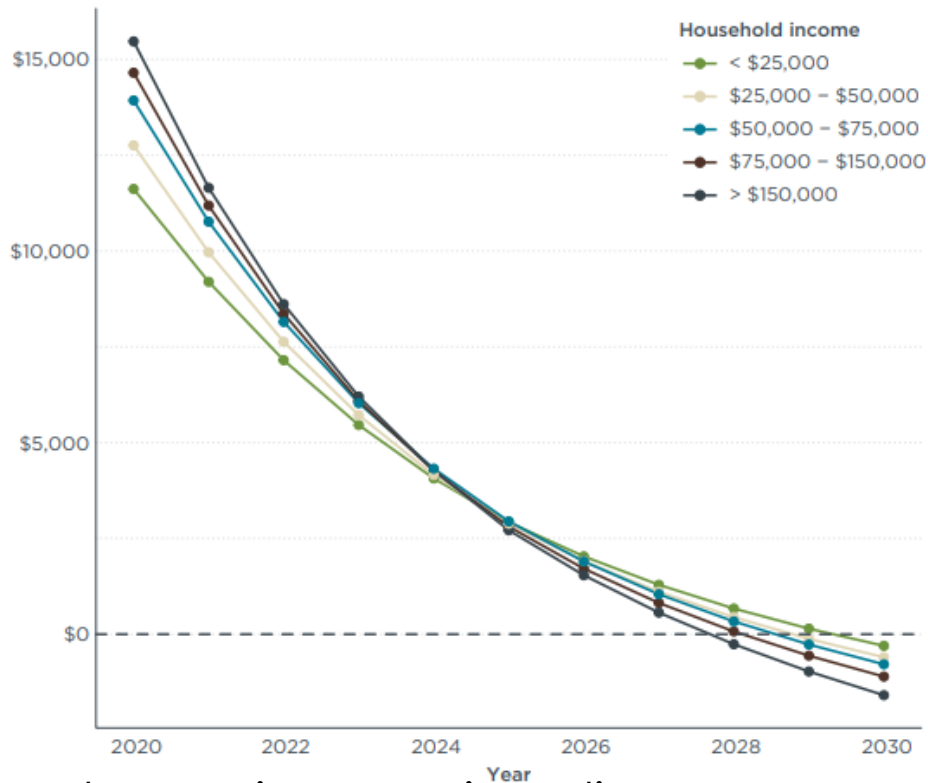
Vehicle-Grid Integration Nexus with Equity

- Ensure that IOUs prioritize ESJ communities in their VGI activities:
 - engage these communities in VGI solutions – we need all communities to participate in solutions that help the grid
 - provide benefits to ESJ communities
 - encourage EV adoption in ESJ communities, especially as EVs become more affordable.

Source - Clean Transportation: An Economic Assessment of More Inclusive Vehicle Electrification in California (2020)

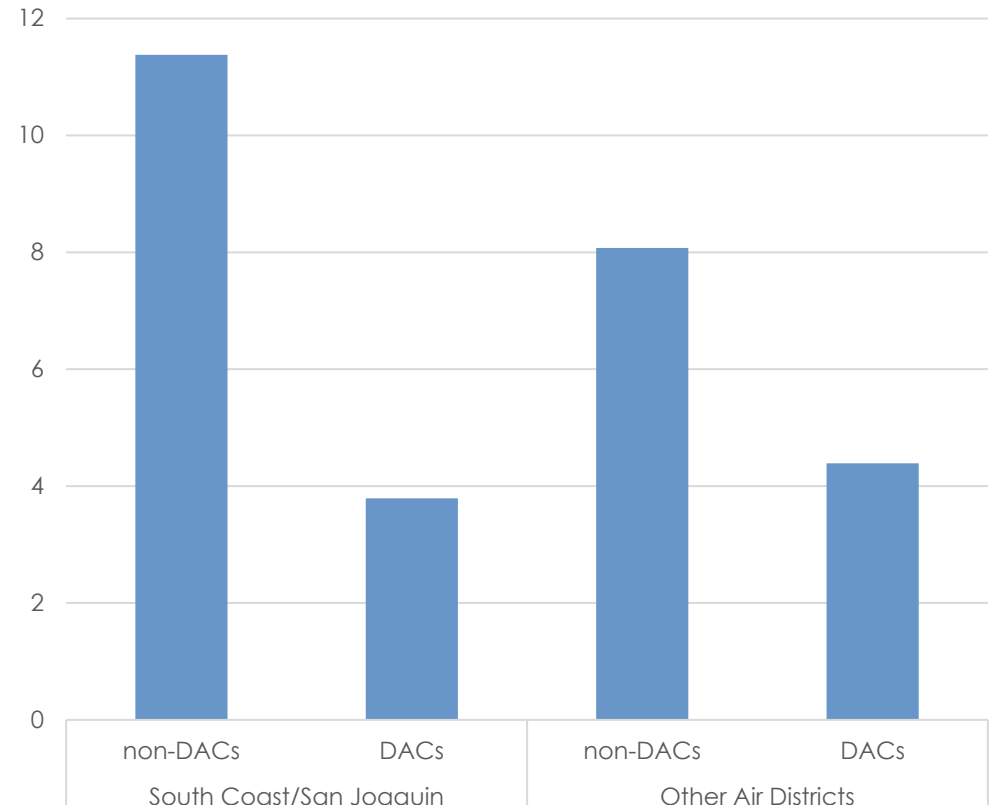
Increased Affordability and EV Adoption gap

Elimination of EV purchase price premium, along with policy efforts, should narrow or eliminate historical EV adoption gap



EV purchase price premium disappears over time
(Source: ICCT, 2021)

California Public Utilities Commission



2015-2017 EV purchases (per 1000 population) lagged in DACs (Data Source: UC Davis, 2020)

Decision 20-12-029 (VGI and SB 676)

- Decision 20-12-029 Issued December 2020 cites relevant goals in Commission's ESJ Action Plan
 - increasing investment in clean energy resources to benefit ESJ communities;
 - improving local air quality and public health;
 - enhancing meaningful outreach and public participation opportunities for ESJ communities;
 - increasing climate resiliency;
 - and promoting economic and workforce development opportunities.

Near Term Actions - VGI Pilots

- PG&E and SCE July 15, 2021 Advice Letters propose seven VGI pilots with a total budget of ~ \$28 million
 - Overcome practical barriers to deployment of demonstrated technologies
- Energy Division staff directed IOUs to address ESJ Communities in their proposals
 - Also, IOUs should work with community-based organizations to determine outreach and engagement strategies

Near Term Actions - VGI Pilots

- For instance, PG&E proposes higher rebate levels and targeted outreach for ESJ customers that participate in “V2X residential” and “V2X commercial” pilots
 - V2X = exporting power from EVs to buildings and/or the grid
- SCE committed, in response to a protest from Cal Advocates, to:
 - (1) explain how the pilots will prioritize ESJ communities in siting and providing benefits or access; and
 - (2) explain how SCE plans to structure incentives to accommodate ESJ communities

Other Near-Term Actions - Technology Focused

- IOUs to apply for VGI emerging technology program Q4 2021 (\$5 million annually)
 - Focus on evaluation of technologies not yet ready for the market
- Use of Automatic Load Management to manage electrical capacity and avoid/minimize electrical system upgrades – workshop in Jan 2021
- CPUC staff are reviewing SCE proposed cybersecurity gaps analysis

Other VGI strategies

Longer term VGI strategies (Decision Section 5)

- Such as increasing bidirectional charging;
- Rule 21 interconnection (via an EV's AC charging port);
- Avoiding distribution grid upgrades;
- Considering strategies to provide credit for export;
- These strategies are not currently tied to specific action items in the transportation electrification proceeding other than reporting.

Appendix

Senate Bill (SB) 676 Highest-Level Goal

⚡ “By December 31, 2020, in an existing proceeding, the commission shall establish strategies and quantifiable metrics to maximize the use of feasible and cost-effective electric vehicle grid integration by January 1, 2030, consistent with all of the following...”

Action Items Completed

- Decision 20-12-029 Issued December 2020
 - ✓ General equity guidelines
 - ✓ VGI pilots stocktake – California, US, international
 - ✓ Detailed reporting template (Decision Section 13) including ESJ communities
 - ✓ IOU workshop to explore options to increase EV participation in demand response
 - ✓ Interconnection process for EVs that export via EV DC charging port
 - ✓ IOU workshops on VGI pilot ideas