BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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COMMENTS OF THE VEHICLE-GRID INTEGRATION COUNCIL ON THE DRAFT ELECTRIFICATION IMPACT STUDY PART 2 REPORTS

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In accordance with the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission"), the Vehicle-Grid Integration Council ("VGIC") hereby submits these comments on the Draft Part 2 Electrification Impact Study Reports pursuant to Decision 24-10-030, *Decision Adopting Improvements to Distribution Planning and Project Execution Process, Distribution Resource Planning Data Portals, and Integration Capacity Analysis Maps* issued October 23, 2024, and Administrative Law Judge Jack Chang's email sent Monday, December 8, 2025 clarifying the deadline for comments.

I. INTRODUCTION.

VGIC appreciates the opportunity to comment on the Draft Part 2 Electrification Impact Studies ("EIS Part 2"). The Draft EIS part 2 provides important evidence demonstrating how electrification can benefit ratepayers. For example, Pacific Gas and Electric ("PG&E") notes in its EIS Part 2 that "Electrification growth may provide downward pressure on distribution rates by as much as 25% by 2040."[1] The Public Advocates Office at the California Public Utilities Commission ("Cal Advocates") also recently released their Distribution Grid Electrification Model 2025 Findings, which also show that electrification can decrease rates 0.2 to 4.5 cents per

[1] PG&E Draft EIS Part 2 at p.13.

kWh by 2040.[2] With California's continued ratepayer pressures and climate goals, the state should continue to invest in electrification, especially electrification of the transportation sector which is California's largest source of greenhouse gas emissions.

The Draft EIS Part 2 also highlights the important role of electric vehicle ("EV") demand flexibility and vehicle-grid integration ("VGI") to deliver substantial cost savings to ratepayers while supporting California's electrification and reliability goals. In particular, the utilities' analyses show that EV-enabled load flexibility is a major driver of avoided distribution system upgrades and system-wide cost reductions. VGIC therefore provides the following comments on the draft studies:

- California is providing concrete evidence of the value of vehicle-grid integration investments.
- SCE and SDG&E should include added VGI and bidirectional EVs in their enhanced demand flexibility scenarios to align with PG&E's approach.

II. CALIFORNIA IS PROVIDING CONCRETE EVIDENCE OF THE VALUE OF VEHICLE-GRID INTEGRATION INVESTMENTS.

In the draft studies, all three IOUs showed significant cost savings from leveraging VGI demand flexibility strategies. The utilities outline the following cost savings from demand flexibility:

- Pacific Gas and Electric (PG&E): $1.8B[3]
- Southern California Edison (SCE): $1.38B[4]

[2] Cal Advocates, Distribution Grid Electrification Model 2025 at p.15. Available at: https://www.publicadvocates.cpuc.ca.gov/press-room/reports-and-analyses/distribution-grid-electrification-model-2025
[3] PG&E Draft EIS Part 2 at p.15.
[4] SCE Draft EIS Part 2 at p.5.

- San Diego Gas and Electric (SDG&E): $689 million[5]

While the IOUs demand flexibility scenarios included load flexibility from different technologies, including heat pumps and home batteries, EVs were a particularly large source of load flexibility. PG&E specifically shows that **EVs provide two thirds of all load flexibility** in their Enhanced Demand Flexibility scenario. [6]

Additionally, outside of the EIS Part 2 studies, Cal Advocates released their Distribution Grid Electrification Model 2025 report that further emphasizes the benefits of leveraging EVs as a load flexibility tool. Cal Advocates finds that **shifting EV charging to manage load on distribution circuits can provide between $5 billion and $18 billion dollars in cost savings by 2040.**[7]

All of these studies show that there is significant value from VGI strategies and investments in California. The Commission should leverage this work to begin developing additional programs, rates, market improvements, and other policies to remove barriers to large-scale implementation and, in turn, unlock the immense flexibility sitting latent in California's EVs. VGIC commends the Commission and the IOUs for beginning to explore EV load flexibility through dynamic rate pilots, managed charging pilots, and emergency demand response programs. However, the Commission must look toward expanding these programs beyond pilot scale and to create additional ways for customers to provide this value so that distribution grid upgrades can be avoided and costs can be managed. Critically, customers currently lack certainty for VGI

[5] SDG&E Draft EIS Part 2 at p.1.
[6] PG&E Draft EIS Part 2 at p.32.
[7] Cal Advocates, Distribution Grid Electrification Model 2025 at p.83. Available at: https://www.publicadvocates.cpuc.ca.gov/press-room/reports-and-analyses/distribution-grid-electrification-model-2025

opportunities, as all existing VGI pilots are on track to end in 2026 or, in the case of the Emergency Load Reduction Program, Subgroup A.5 ("EV/VGI Aggregations"), 2027.

III. SCE AND SDG&E SHOULD INCLUDE ADDITIONAL VGI AND BIDIRECTIONAL EVS IN THEIR ENHANCED DEMAND FLEXIBILITY SCENARIOS TO ALIGN WITH PG&E'S APPROACH.

In its EIS Part 2 draft study, PG&E conducted analysis looking at an orchestrated enhanced demand flexibility scenario and incorporated key VGI tools that the other IOUs should also look at in their EIS Part 2 studies. In PG&E's study, the utility modeled the following elements of VGI, yielding significant amounts of peak load reduction by 2040:

- **Active EV Charging Management & Dynamic Prices (1,007 MW by 2040):**
    - PG&E's Enhanced Demand Flexibility scenario incorporates higher participation in dynamic rates to shift peak load to off-peak times.
    - PG&E also modeled what is called "active charging demand management", where EV charging is managed to smooth charging across off-peak times and reduce "timer peaks" that would otherwise occur under pure time-of-use price signals, where charging surges as soon as the off-peak period starts. These types of active managed charging programs are already being piloted by PG&E in its EV Charge Manager pilot. Active charging management helps reduce load on distribution equipment in particular, which PG&E notes is key to unlocking ratepayer savings.[8]
- **Bidirectional EVs or V2G (859 MW by 2040):** PG&E also modeled energy from bidirectional EVs that export back to the grid. This helps to provide local energy and takes advantage of the large batteries that customers have already purchased for transportation

[8] PG&E Draft EIS Part 2 at p.16.

use cases. In the EIS Part 2, PG&E still makes conservative assumptions about the penetration of bidirectional vehicles and chargers, with heavy-duty vehicles (e.g., school buses) assumed to have the highest bidirectional charging system penetration at 25% of chargers.[9] Light-duty residential chargers are assumed to have a 6% bidirectional charging system penetration.[10] Currently, nearly all major automakers have announced bidirectional light-duty EV models and there is increasing availability of bidirectional charging systems. VGIC anticipates that a 6% bidirectional penetration for residential EV customers by 2040 is very conservative, and we look forward to further refinements to these assumptions as additional data on bidirectional charging system adoption becomes available.

The use of EVs for load flexibility in these two ways contributes two thirds of the added load flexibility modeled during the coincident peak in the enhanced demand flex scenario.[11]

Although not as extensively investigated as PG&E, SCE and SDG&E did model some elements of active managed charging. SCE states that their demand flexibility scenario includes a "Flexible charging rate" that would "control when EVs start charging to flatten the charging pattern at night."[12] 40% of customers are modeled to be on this rate, but the specific impacts of the flexible charging rate on the total load flexibility potential are unclear. SDG&E details that active managed charging smooths the load shape and minimizes distribution costs.[13] However, like SCE, SDG&E also does not share the specific impact of active managed charging on reducing load or costs. **VGIC recommends that SCE and SDG&E share the specific impacts of active managed**

[9] PG&E Draft EIS Part 2 at p.74.
[10] PG&E Draft EIS Part 2 at p.74.
[11] PG&E Draft EIS Part 2 at p.32.
[12] SCE Draft EIS Part 2 at p.33.
[13] SDG&E Draft EIS Part 2 at p.13-14.

charging and other EV load shaping strategies on the overall load flexibility modeled in these EIS Part 2 studies.

Neither SCE nor SDG&E model bidirectional charging systems that serve either onsite load or export to the grid. As shown by PG&E, bidirectional charging systems can provide significant amounts of load reduction and unlock cost savings for ratepayers. There are also expected to be significant amounts of bidirectional charging systems in both SCE and SDG&E service territory, with over 7.1 million electric vehicles in the state by 2030.[14] **Therefore, VGIC strongly believes that both SCE and SDG&E should include bidirectional EVs as a tool in their EIS Part 2 studies.** Given PG&E's finding that enhanced active managed charging and bidirectional charging systems can provide up to two thirds of incremental load flexibility, SCE's and SDG&E's EIS Part 2 studies would be substantively incomplete without including similar scenarios and degree of detail about VGI benefits.

IV. CONCLUSION.

VGIC appreciates the opportunity to provide these comments on the draft studies. We look forward to further collaboration with the Commission and stakeholders on this initiative.

Respectfully submitted,

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VEHICLE-GRID INTEGRATION COUNCIL

Date: December 15, 2025

[14] California Energy Commission, Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment.