

Application: A.21-12-008

Exhibit No.: SDG&E-

Witness: Taylor Marvin

SUPPLEMENTAL TESTIMONY OF

TAYLOR MARVIN

ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



MARCH 15, 2022

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1 customers by Summer 2023, allowing V2G to play a greater role in meeting California’s summer
2 reliability needs.

3 By contrast, adding billing complexity or ME&O and evaluation requirements to the
4 V2G-Export rate proposal could make it difficult or impossible for SDG&E to implement the
5 rate with existing resources, requiring SDG&E to request implementation revenue. A revenue
6 request would require SDG&E to submit new prepared Revenue Requirement and Cost
7 Recovery testimony chapters and prepare a customer bill impact statement, potentially delaying
8 the progress of this Application.

9 **A. Implementation and Applicability**

10 As described in my opening testimony, SDG&E proposes that the V2G-Export rate be
11 approved as an optional commodity schedule open to bundled SDG&E customers taking
12 distribution service on the Electric Vehicle-High Power (“EV-HP”) electric rate. EV-HP is a new
13 optional SDG&E distribution rate open to all separately metered electric vehicle (“EV”) charging
14 customers outside of single-family homes with maximum demand above 20 kilowatts (“kW”).
15 EV-HP was opened to customers on January 1, 2022. SDG&E proposes no cap or other limit on
16 the number of customers that can enroll in the V2G-Export rate beyond the requirement that they
17 be enrolled in EV-HP and take commodity service from SDG&E.

18 SDG&E is not requesting incremental revenue through this application and believes that
19 the V2G-Export rate can be implemented through existing resources. However, the simplicity of
20 SDG&E’s proposed V2G-Export rate is critical to building the rate into SDG&E’s billing system
21 without an incremental budget. Any changes that increase the complexity of the V2G-Export rate
22 may require SDG&E to request additional revenue in order to successfully implement the rate.

23 SDG&E plans to adapt the V2G-Export rate to incorporate technological advances and
24 regulatory changes. For example, the existing Schedule EV-HP tariff states that submetered EV

1 load will be permitted to enroll in Schedule EV-HP should the Commission approve an
2 applicable submetering protocol; this would equally apply to V2G-Export enrollment.⁴ SDG&E
3 also plans to encourage V2G customers exporting energy to the grid using alternating current
4 (“AC”) bidirectional EV supply equipment (“EVSE”) to enroll in the V2G-Export rate as
5 allowed by existing Commission decisions, and to encourage V2G-Export customers to utilize
6 Automated Load Management (“ALM”) strategies where appropriate.⁵

7 **B. Marketing, Education, and Outreach**

8 SDG&E plans to focus on informing EV-HP customers of their V2G options and
9 educating them about the V2G-Export rate, rather than broadly marketing the rate to all
10 customers. The V2G-Export rate is designed to compensate EV customers for storing electricity
11 in their vehicle batteries and exporting it back to the grid. Unlike previous EV electric import
12 rate proposals, engaging in V2G exports is fundamentally a *business proposition*, one that may
13 not make a profit.

14 The costs of charging EVs to discharge back to the grid may easily exceed the revenue
15 customers earn on the V2G-Export rate. These revenues will depend on unpredictable future
16 California Independent System Operator (“CAISO”) market prices, how many hours the
17 customer’s vehicles are available to remain plugged into the grid exporting energy, and how
18 efficiently the customer schedules their charging and discharging. These factors will vary widely
19 from customer to customer and, in the case of CAISO market prices, year to year. The costs of
20 engaging in V2G include the price premium of bidirectional EVSE, any service or networking
21 fees the customer must pay an aggregator or EV service provider (“EVSP”), and any disruption

⁴ See Schedule EV-HP, Special Condition 3.

⁵ Commission Resolution E-5165 at OP 1.

1 to the customer’s fleet operations from utilizing their EVs to provide grid services. SDG&E and
2 has no control over the cost of bidirectional EVSE or EVSP fees and may not even be aware of
3 these behind-the-meter expenses.

4 Specifically, SDG&E plans to inform and educate customers about the V2G-Export rate
5 through the existing EV program customer advisory process. As noted, it is not requesting an
6 incremental ME&O budget through this Application. During the EV customer intake process,
7 SDG&E apprises each potential customer about their available rate options. SDG&E will inform
8 eligible customers of the V2G-Export and explains the potential benefits of V2G. If the customer
9 wishes to pursue V2G, SDG&E will walk them through the equipment requirements, inform
10 them of the Rule 21 interconnection process, and educate them about potential V2G revenue
11 streams including the V2G-Export rate.

12 SDG&E anticipates that most customers on the V2G-Export rate will be medium-
13 duty/heavy-duty (“MD/HD”) electric vehicle (“EV”) fleet operators utilizing high power direct
14 current (“DC”) charging equipment due to current standards that limit AC mobile inverter
15 interconnections. Many of these potential customers are currently participating in SDG&E’s
16 MD/HD EV Infrastructure Program, most notably school districts.⁶ Through the MD/HD EV
17 Infrastructure Program—which SDG&E is marketing as Power Your Drive for Fleets—SDG&E
18 staff advise potential customers on their EV infrastructure plans, include helping customers
19 develop load management plans. These load management plans may include V2G if exporting
20 energy to the grid makes sense given the customer’s business model, vehicle duty cycle, and risk
21 appetite. SDG&E is also focused on outreach to potential MD/HD EV Infrastructure Program
22 customers in what the state refers to as Disadvantaged Communities (“DACs”). SDG&E plans to

⁶ See D.19-08-026.

1 educate MD/HD EV Infrastructure Program participants about the potential benefits of the V2G-
2 Export rate and advise them on EV models and EVSE that supports bidirectional operations.

3 V2G operations may not make sense for many customers and SDG&E cannot assess all
4 of these factors for each potential V2G-Export customer. While SDG&E will educate customers
5 about the V2G-Export rate when appropriate, the Commission should not require overly broad
6 ME&O efforts that serve only to push customers towards engaging in V2G exports who may not
7 be ready to do so.

8 **C. Reporting and Evaluation**

9 The Commission has already set metrics for reporting and evaluating the rollout of V2G
10 energy exports. The existing Semi-Annual Vehicle-Grid Integration (“VGI”) report requires
11 utilities to report on⁷:

- 12 • The adoption of mechanisms to provide credit for EV export;
- 13 • Efforts to accelerate the use of VGI for resiliency;
- 14 • The effectiveness of credit-for-export availability, lessons learned, and potential
15 next steps to increase availability;
- 16 • Participation in credit-for-export and discussions to increase participation;
- 17 • Annual energy exported in kilowatt-hours;
- 18 • The total number of V2G EVSE customers; and
- 19 • The availability of bidirectional-capable EVSE models.

20 SDG&E proposes to report on the enrollment, energy exported, and lessons learned from the
21 V2G-Export rate through the Semi-Annual VGI report, which is widely distributed.

⁷ See D.20-12-029 and VGI Senate Bill 676 Reporting Template at:
<https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/infrastructure/transportation-electrification/vehicle-grid-integration-activities>

1 Given the thoroughness of the existing VGI data reporting template, requiring additional
2 reporting and evaluation specific to the V2G-Export rate would be duplicative and unnecessary.
3 Accordingly, SDG&E has requested no incremental revenue to fund V2G-Export rate reporting
4 and evaluation. If evaluation requirements beyond the Semi-Annual VGI report are set by the
5 Commission incremental funding may be necessary, requiring significant revisions to this
6 Application.

7 If this reporting and evaluation shows that the V2G-Export rate is producing no grid
8 benefits SDG&E would be amenable to closing the V2G-Export rate.

9 **III. CONCLUSION**

10 SDG&E hopes that the V2G-Export rate can be approved and implemented by Summer
11 2023 to enable V2G energy exports to support grid reliability. This concludes my supplemental
12 testimony.