

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



FILED

09/15/21
04:59 PM

Order Instituting Rulemaking to Continue the
Development of Rates and Infrastructure for
Vehicle Electrification.

Rulemaking 18-12-006

**SAN DIEGO GAS & ELECTRIC COMPANY (U 902 M) VEHICLE GRID
INTEGRATION ACTIVITIES MID-TERM REPORT FOR 2021**

Ross Fulton

8330 Century Park Court, CP32D
San Diego, CA 92123-1530
Telephone: (858)654-1861
Facsimile: (619) 699-5027
E-Mail: RFulton@sdge.com

Attorney for:
SAN DIEGO GAS & ELECTRIC COMPANY

September 15, 2021

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

Order Instituting Rulemaking to Continue the
Development of Rates and Infrastructure for
Vehicle Electrification.

Rulemaking 18-12-006

**SAN DIEGO GAS & ELECTRIC COMPANY (U 902 M) VEHICLE GRID
INTEGRATION ACTIVITIES MID-TERM REPORT FOR 2021**

Pursuant to Ordering Paragraph (OP) 1 of Decision (D.) 20-12-029 (Decision), San Diego Gas & Electric Company (SDG&E) hereby submits its Vehicle Grid Integration (VGI) activities mid-term report for 2021 (Report). The Report is set forth in Attachment A and outlines SDG&E's VGI activities through June 30, 2021.

Respectfully Submitted,

/s/ Ross Fulton

Ross Fulton
8330 Century Park Court, CP32D
San Diego, CA 92123-1530
Telephone: (858) 654-1861
E-Mail: _rfulton@sdge.com

Attorney for:
SAN DIEGO GAS & ELECTRIC COMPANY

September 15, 2021

ATTACHMENT A

**SAN DIEGO GAS & ELECTRIC COMPANY
VEHICLE GRID INTEGRATION
MID-TERM REPORT**

Introduction

This report presents San Diego Gas & Electric Company's (SDG&E) vehicle grid integration (VGI) program and activity metrics from the respective program/pilot inceptions through June 30, 2021, unless otherwise specified, including but not limited to implementation of VGI pilots, customer programs, and incentives related to VGI. Consistent with California Public Utilities Commission (Commission or CPUC) guidance, this initial mid-term VGI report includes SDG&E VGI program data provided herein.

Currently, SDG&E does not have programs that include automated load management or electric vehicle related demand response (DR), with only two programs on a VGI rate as shown in Appendix B. As such, several of the requested fields within the data report are marked as zero. SDG&E does, however, provide data where possible to show how it is actively working to support VGI. Please note that SDG&E excluded outcome questions in the mid-term narrative report, as the CPUC's Energy Division indicated that they are only required in the first full VGI report due in March 2022.

SDG&E Responses to Narrative Questions

1. Customer program or pilot and incentives related to VGI

Description of each customer program or pilot and incentives related to VGI

- **Power Your Drive (PYD) Pilot:** Installed approximately 3,000 chargers taking service on a unique VGI rate, which incorporates the California Independent System Operator (CAISO) day-ahead price and dynamic system and circuit adders. Offers Rate-to-Driver billing, where drivers are directly exposed to VGI rate and can set a maximum charging price threshold.
- **Vehicle-to-Grid (V2G) Pilot:** Pilot using six electric buses equipped with bidirectional electric chargers. The project has completed construction phase and is awaiting installation of bidirectional equipment and software on buses. Through this pilot, SDG&E will test numerous V2G services, such as facility peak shaving and potentially grid export.
- **Electric Vehicle (EV) Rates:** EV rates, including time-varying, un-tiered residential rates (EV-Time of Use (TOU), EV-TOU-2, and EV-TOU-5) and the upcoming EV-High Power (EV-HP) rate for non-residential EV charging. The EV-TOU rate is used in public chargers in SDG&E's Electrify Local Highways Pilot, and in PYD for Schools and Parks. Passing time-varying rates to drivers will be the default billing arrangement in SDG&E's PYD Extension Program.
- **V2G Alternating Current (V2G-AC) Pilots:** As required by Decision (D.) 20-09-035, SDG&E Advice Letter 3774-E proposes a temporary pathway for V2G-

AC pilots seeking interconnection that will ensure the requisite safety precautions.¹

- **Emergency Load Reduction Program (ELRP) Pilot:** This program is a 5-year pilot approved in D.21-03-056. ELRP was launched in June 2021 and offers \$1/kWh for incremental load reduction. No penalty for non-performance. Non-residential EVs will be eligible to participate under group A.3 (Rule 21 exporting Distributed Energy Resources)—as it meets the 25 kW per hour threshold and is in compliance with Rule 21 and other application regulations and permit during an ELRP event. SDG&E intends to enroll some customers in the PYD for Fleets Program in ELRP.

2. **Adoption of rates that encourage VGI and adoption of mechanism to provide credit for export**

Discussion on the adoption of rates that encourage VGI and adoption of mechanism to provide credit for export

- SDG&E currently offers three un-tiered residential TOU rates for EV charging. The upcoming EV-HP rate is expected to incentivize grid-friendly charging for non-residential EV sites.
- VGI rate used in PYD Pilot and PYD Extension directly exposes drivers to CAISO day-ahead price and system and circuit adders, both of which incentivize grid friendly charging.
- The Commission has not authorized credit for export beyond net energy metering (NEM) and the Emergency Load Reduction Program (ELRP).

3. **Efforts to collaborate with CAISO to design wholesale market rules and access that support VGI**

Discussion on the efforts to collaborate with CAISO to design wholesale market rules and access that support VGI

For the V2G pilot, SDG&E is adhering to CAISO's existing wholesale market rules. To support VGI, SDG&E is in the process of working through CAISO's new resource implementation process in order to be able to bid into the CAISO market.

¹ This was a Joint advice letter submitted on May 28, 2021, by SDG&E, Southern California Edison Company (SCE), and Pacific Gas and Electric Company (PG&E) (together, the investor-owned utilities (IOUs)). It will be effective upon Commission resolution.

4. Leveraging or supplementing EPIC and/or other sources of funding for VGI technology demonstration projects

Discussion on leveraging or supplementing EPIC and/or other sources of funding for VGI technology demonstration projects

At this time, SDG&E has no VGI funded projects in the current Electric Program Investment Charge (EPIC)-3 cycle. As for other sources, SDG&E may consider bidding on U.S. Department of Energy (DOE) procurements or on California Energy Commission (CEC) EPIC procurements.

5. Efforts to accelerate the use of VGI for resiliency

Discussion on Efforts to accelerate the use of VGI for resiliency

The V2G Pilot will not directly test resiliency use case due to relatively high reliability in the area. But electric buses with bidirectional charging could theoretically support a transportation department or facility being served during an outage event.

6. Progress to reform interconnection rules to advance VGI

Discussion on progress to reform interconnection rules to advance VGI

SDG&E will begin interconnecting Power Your Drive for Fleets customers in 2021 with bidirectional charging equipment for grid exports. SDG&E has interconnected one V2G customer as of Q3 2021. SDG&E has not yet enrolled any customers in the Emergency Load Reduction Program (ELRP) but is actively working to do so.

7. Support and adoption of non-interconnection technical standards to advance VGI

Discussion on support and adoption of non-interconnection technical standards to advance VGI

Electric vehicle supply equipment (EVSE) selected for the PYD Extension will be capable of supporting Open Automated Demand Response standard, which supports adoption of a non-interconnection technical standard.

8. Summary on efforts to fund and launch VGI customer education

Discussion and summary on efforts to fund and launch VGI customer education

SDG&E is conducting ongoing marketing, education, and outreach (ME&O) on TOU rates and its new EV-HP rate. SDG&E also plans to conduct outreach to medium duty/heavy duty (MD/HD) customers that have installed bidirectional EVSE regarding enrollment in ELRP.

9. Summary on efforts to develop and support complementary policies needed to support Automated Load Management (ALM) technology

Discussion and summary on efforts to develop and support complementary policies needed to support Automated Load Management (ALM) technology

SDG&E does not currently utilize automated load management in any programs or pilots.

10. ALM deployment in the utility territory in the context of both existing and future transportation electrification programs, rules, and tariffs to the extent practical; including estimates on the number of ALM

Discussion on ALM deployment in the utility territory in the context of both existing and future transportation electrification programs, rules, and tariffs to the extent practical; including estimates on the number of ALM

SDG&E does not currently utilize automated load management in any programs or pilots. As such, SDG&E does not have an estimate of the number of sites installed by third parties utilizing ALM in its service territory.

11. ALM systems Installed for passenger vehicles and any medium and heavy-duty vehicle segment(s) under currently approved transportation electrification programs as well as estimates on the potentially expected avoided distribution and customer-side cost savings attributable to such ALM installations

Discussion on ALM systems Installed for passenger vehicles and any medium and heavy-duty vehicle segment(s) under currently approved transportation electrification programs as well as estimates on the potentially expected avoided distribution and customer-side cost savings attributable to such ALM installations

SDG&E does not currently utilize automated load management in any programs or pilots.

12. Customer VGI participation in utility demand response programs, including customer retention and efforts to reduce churn and data requested from 3rd party providers as needed

Synopsis on customer VGI participation in utility demand response programs, including customer retention and efforts to reduce churn and data requested from 3rd party providers as needed

SDG&E does not possess participation data for EVs in demand response programs. Within the ELRP pilot, aggregators will be responsible for managing EVs that participate. SDG&E will not possess any EV data.

13. Implementation of VGI pilots, lessons learned and potential future efforts

Description and discussion of Implementation of VGI pilots, lessons learned and potential future efforts

SDG&E has implemented several VGI Pilots:

- **PYD Pilot:** SDG&E completed construction on the PYD Pilot in 2019. The PYD Pilot installed over 3,000 chargers at multi-unit dwellings (MUDs) and workplaces. All sites are billed on the VGI rate, with the majority on Rate-to-Driver billing. The PYD Pilot was the first of its kind, and the only large deployment of dynamic rates for EVs in California. Although SDG&E found that the VGI rate generally shifts load, there was no direct comparison with a control group on TOU rates.
- **V2G Pilot:** The V2G Pilot will test bidirectional charging using six electric buses at local school districts. Progress to date includes securing buses, obtaining a Rule

21 interconnection permit, and installing the chargers. SDG&E plans to test providing V2G services and bidding into the CAISO market.

- **V2G-AC Pilots:** A joint IOU advice letter was submitted on May 28, 2021, and will be effective upon Commission resolution. Implementation, lessons-learned, and potential future efforts are still pending.
- **Emergency Load Reduction Program (ELRP) Pilot:** The Electric Reliability OIR Phase 2 Energy Division's Staff Concept Paper proposed utilities consider modifications for ELRP to enhance Electric Vehicle/Vehicle to Grid Integration aggregation to support the grid at net peak. Aggregating and dispatching EV resources represents an opportunity to enable and demonstrate the technical capabilities and customer engagement strategies necessary to harness and deploy this nascent resource. Opening testimony was submitted on September 1, 2021.

14. Integration of VGI across the utility relevant business activities

Discussion on the integration of VGI across the utility relevant business activities

SDG&E is working to integrate VGI across several SDG&E activities. Examples of this include:

- Verifying that MD/HD EVs with bidirectional charging can participate in ELRP and incorporating this into the Power Your Drive for Fleets (PYDFF) program.
- Rolling out residential TOU rates that incentivize off-peak charging. Designing EV-HP rate that incentivizes ALM and shifting loads off peak.
- ELRP participation, as mentioned above.
- Accelerating the interconnection process for bidirectional charging, including MD/HD program sites.

15. Pilots underway with a discussion on the results and next steps including cost, lessons learned, etc.

Report on each pilot underway with a discussion on the results and next steps including cost, lessons learned, etc.

See response to question 13 above.

16. Metrics on interconnection reform (in conjunction with item 7)

Report out on metrics on interconnection reform (in conjunction with item 7)

SDG&E is interconnecting bidirectional chargers as part of its PYDFF program with the goal of enrolling customers in ELRP.

17. Effectiveness of credit-for-export availability, lessons learned and potential next steps to increase availability

Discussion on the effectiveness of credit-for-export availability, lessons learned and potential next steps to increase availability

The Commission has not authorized credit-for-export beyond ELRP and NEM. Although

no tariff for CAISO export revenue currently exists, SDG&E plans on estimating hypothetical CAISO revenue from energy export as part of the V2G Pilot.

18. Participants in credit for export and discussion to increase participation

Report on the number of participants in credit for export and discussion to increase participation

The Commission has not authorized credit for export. SDG&E will estimate hypothetical CAISO export revenue at the one V2G Pilot site. SDG&E PYDFF customers with interconnected bidirectional charging equipment will have the option of enrolling in ELRP; however, no customers have enrolled to date.

19. Annual energy exported (kWh) and report out on potential efforts to increase participation

Discussion on the annual energy exported (kWh) and report out on potential efforts to increase participation

The V2G pilot progress to date includes securing buses, obtaining a Rule 21 interconnection permit, and installing chargers. Export planned to begin in Q4 2021 with continuous monitoring for potential to increase participation throughout the duration of the two-year program. In addition, SDG&E is accommodating several MD/HD Program participants who have independently adopted V2G technology.

20. Overall barriers removed in V2B

Report out on overall barriers removed in V2B

SDG&E is working to remove barriers to vehicle to building (V2B):

- V2G Pilot has installed bidirectional chargers capable of back feeding to the building and will test V2B for demand charge mitigation.
- PYDFF is installing bidirectional equipment at many sites. SDG&E is interconnecting these installations as non-exporting (that is, performing V2B) under Rule 21.

21. Number of EVs enrolled in DR programs

Discussion on the number of EVs enrolled in DR programs

SDG&E does not currently have a DR program with EV enrollment.

22. Rate of change of EV DR enrollment and potential steps to increase enrollment

Discussion on the rate of change of EV DR enrollment and potential steps to increase enrollment

SDG&E does not currently have a DR program with EV enrollment.

23. EV DR enrollment capacity (MW)

Synopsis on EV DR enrollment capacity (MW)

SDG&E does not currently have a DR program with EV enrollment.

24. EV DR enrollment load shift (MWh)

Synopsis on EV DR enrollment load shift (MWh)

SDG&E does not currently have a DR program with EV enrollment.

26. Site Participation in rate-to-driver and discussion on how to increase participation

Report out on from sites on participating in rate-to-driver and discussion on how to increase participation

SDG&E has and continues to engage with its Power Your Drive sites through a variety of engagement tactics, including EV ride and drives, email communication, and through a site host resource portal.² The portal empowers the site hosts to grow their community of EV drivers by providing them with the tools and resources they need to engage with their employees or tenants. Resources include marketing and educational materials, driver enrollment forms, EV shopping assistant, and an option to ask SDG&E to host a virtual or physical event at their site.

27. Site participating in DR, lesson learned and next steps to increase participation

Report out from sites on participating in DR, lesson learned and next steps to increase participation

SDG&E does not currently have a DR program with EV enrollment.

28. Barriers to data collection and potential solutions

Discussion of various barriers to data collection efforts and potential solutions identified by the IOUs. For example, EV load may not be separately metered. IOUs will describe why these data gaps would occur and will discuss their efforts to address these gaps in their respective reports.

In the process of completing this report, SDG&E identified the following barriers to data collection. Examples of this include:

² SDG&E, *Power Your Drive for Work and Homes*, available at <https://www.sdge.com/business/electric-vehicles/power-your-drive/pyd-resources>.

- SDG&E currently does not have Demand Response programs or programs that leverage ALM technology. Thus, the data for those type of programs are not available. If and when such programs are developed, if feasible, a potential solution would be to ensure the program data is available.
- In some programs, like ELRP for example, SDG&E will not possess all the requested EV data (i.e. usage data) from the program, as the utility is not the primary owner of electric vehicle charging station. It is important to note that the quality of the data shared by charging station owners may vary which could adversely affect the data included within this report.

30. Rate-to-driver enrollment by sites

Rate-to-driver enrollment for commercial sites subscribing to EV dynamic rates. The IOUs will report on this metric for programs that track and offer this service.

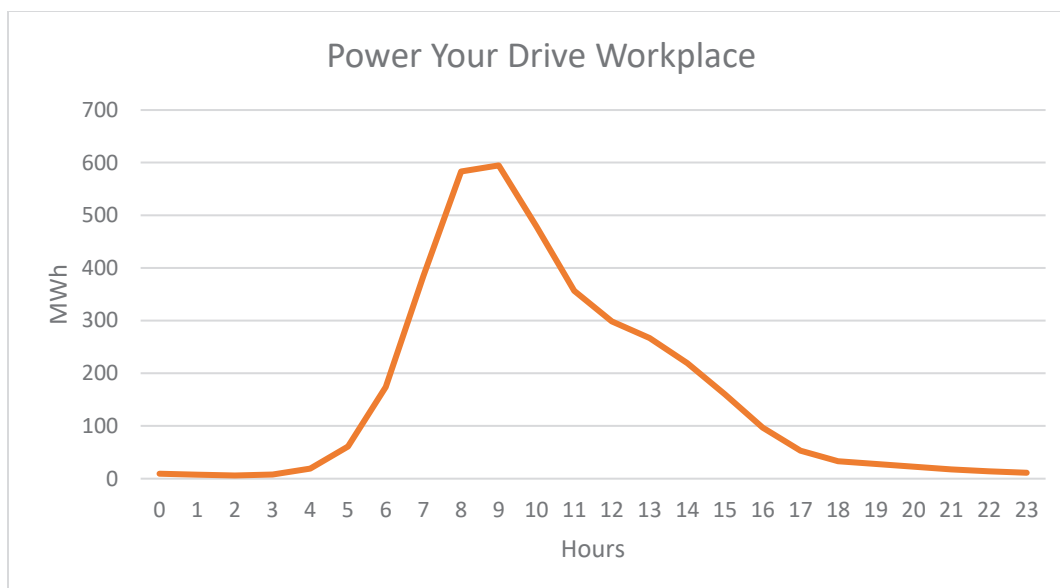
Please see Appendix A for rate-to-driver information by site. This data is inclusive of all Power Your Drive sites, as they are subscribed to SDG&E's dynamic VGI rate.

31. Dynamic rate load shift (MWh)

This will be estimated using meter load data from broadly similar program customers on TOU rates as a baseline.

SDG&E's dynamic rate load shift is calculated by observing the load during super off-peak and off-peak times versus the on peak times. SDG&E assumes that the dynamic VGI rate is largely responsible for program customers that would have charged during on peak times shifting to off peak charging likely to reduce charging costs. Per SDG&E's Power Your Drive Research report,³ most drivers charging their vehicles located in rate-to-driver sites spend less than 20 cents per kWh. Charging at PYD workplace sites peaks when drivers arrive at work and falls off gradually throughout the day, when prices on the dynamic VGI rate tend to rise. This shift in charging behavior in response to high price periods suggests the effectiveness of the VGI rate.

³ SDG&E, *Power Your Drive Research Report* (April 2021), available at <https://www.sdge.com/sites/default/files/regulatory/SDG&E%20FINAL%20Power%20Your%20Drive%20Research%20Report%20April%202021.pdf>.



32. Aggregate unmanaged load profiles within programs (kWh)

Per the Decision, "unmanaged load" refers to customers not on TOU rates. There are no customers within IOU TE programs with entirely unmanaged charging, if "managed charging" includes service on TOU rates.

SDG&E does not track unmanaged load profiles within programs as there are no customers with unmanaged loads within SDG&E transportation programs.

33. Aggregate unmanaged load profiles within programs (kW)

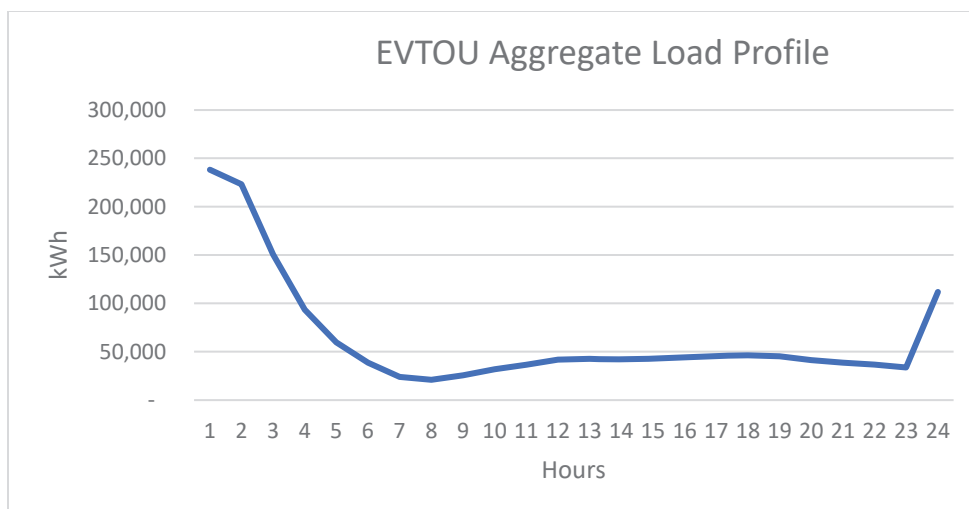
Per the Decision, "unmanaged load" refers to customers not on TOU rates. There are no customers within IOU TE programs with entirely unmanaged charging, if "managed charging" includes service on TOU rates.

SDG&E does not track unmanaged load profiles within programs as there are no customers with unmanaged loads within SDG&E transportation programs.

37. Aggregate load profiles for EV TOU rates within programs (kWh)

Data will be based on separately metered EV load.

The EV TOU Aggregate Load Profile chart below represents SDG&E residential customers on a separately metered EV-TOU rate from January 1, 2019, to June 30, 2021. This hourly load profile suggests EV-TOU customers primarily charge their vehicles in the early hours of the day. However, the EV-TOU customer base is much smaller compared to EV-TOU-2 and EV-TOU-5. It therefore may not be an accurate representation of all EV drivers charging behavior in the service territory.



38. Aggregate peak load of EV TOU rates within programs (kW)

Data will be based on separately metered EV load.

The aggregate peak load of customers on a residential EV TOU rate occurs in the first hour of the day and is approximately 260 kW. The date range of January 1, 2019, to June 30, 2021, was chosen to best show the seasonality of charging behavior over the years.

39. Rate-to-host

Utilities will report on this metric for programs that track and offer this service.

- **Power Your Drive 1.0** program has 55 rate-to-host sites.
- **Priority Review Project – Airport GSE** program has 1 rate-to-host site.
- **Priority Review Project – Electrify Local Highways** program has 4 rate-to-host sites.
- **Priority Review Project – Fleet** program has 4 rate-to-host sites.
- **Priority Review Project – Green Shuttles** program has 3 rate-to-host sites.
- **Priority Review Project – Port** program has 2 rate-to-host sites.
- **Power Your Drive for Parks** program has 1 rate-to-host site.

40. Rate-to-driver

Utilities will report on this metric for programs that track and offer this service.

- **Power Your Drive 1.0** program has 199 rate-to driver sites.

APPENDIX A

Question 30**Site Participation in rate-to-driver and discussion on how to increase participation**

Site Unique Identifier	Site Type	Driver Count
WP170370	RTD	20
WP170033	RTD	43
WP180057	RTD	47
WP160004	RTD	23
WP160003	RTD	9
WP160033	RTD	12
WP170029	RTD	42
WP170032	RTD	121
MF160106	RTD	14
MF170104	RTD	26
WP170022	RTD	11
WP160134	RTD	4
WP170061	RTD	42
WP160053	RTD	2
WP160052	RTD	2
MF160011	RTD	22
WP160048	RTD	47
WP170250	RTD	26
WP170207	RTD	21
MF170185	RTD	56
MF160105	RTD	30
MF170071	RTD	8
WP170062	RTD	65
WP170050	RTD	23
MF170152	RTD	17
WP170060	RTD	9
WP160146	RTD	4
WP170304	RTD	21
MF160086	RTD	7
WP170267	RTD	58
WP170266	RTD	55
WP170068	RTD	41
WP160136	RTD	4
MF170137	RTD	4
WP180015	RTD	34
WP170063	RTD	31
WP180016	RTD	10
MF170091	RTD	14
MF170112	RTD	22
WP170379	RTD	24
WP170312	RTD	3
MF160018	RTD	13
WP170313	RTD	6

Site Unique Identifier	Site Type	Driver Count
MF170144	RTD	14
MF170008	RTD	6
MF170192	RTD	6
WP170276	RTD	8
WP170331	RTD	3
WP170271	RTD	2
WP160011	RTD	25
WP170058	RTD	9
WP170302	RTD	64
WP180049	RTD	22
WP170365	RTD	7
MF180044	RTD	25
MF170095	RTD	26
MF170157	RTD	28
MF180041	RTD	7
WP170330	RTD	4
WP160084	RTD	16
WP160064	RTD	6
WP170052	RTD	37
WP170374	RTD	13
WP160025	RTD	72
MF170355	RTD	1
MF180028	RTD	6
WP180011	RTD	5
WP160102	RTD	110
WP160036	RTD	16
WP160035	RTD	20
MF170329	RTD	6
MF180120	RTD	13
MF180115	RTD	18
WP180124	RTD	11
MF160022	RTD	12
WP180138	RTD	13
MF180020	RTD	12
WP160148	RTD	49
MF180100	RTD	8
WP170219	RTD	11
WP170386	RTD	33
WP160127	RTD	26
MF170047	RTD	4
MF180125	RTD	1
WP160118	RTD	7
MF170313	RTD	35
WP170367	RTD	11
WP180107	RTD	10
WP180080	RTD	9

Site Unique Identifier	Site Type	Driver Count
WP160054	RTD	7
WP160027	RTD	65
MF170181	RTD	30
WP180060	RTD	13
MF160001	RTD	2
MF180099	RTD	39
MF170178	RTD	21
WP170070	RTD	8
MF180049	RTD	5
MF180113	RTD	8
WP160015	RTD	10
WP180126	RTD	2
MF180124	RTD	9
MF170247	RTD	16
WP160016	RTD	18
WP170015	RTD	4
WP170371	RTD	13
MF180126	RTD	2
MF170280	RTD	5
MF170059	RTD	6
WP180085	RTD	2
WP170053	RTD	10
MF180132	RTD	41
MF160016	RTD	15
WP170038	RTD	10
MF170024	RTD	3
MF170135	RTD	8
WP180123	RTD	3
WP170247	RTD	12
MF180021	RTD	7
MF180133	RTD	35
MF180056	RTD	17
WP170059	RTD	7
WP160040	RTD	20
MF170312	RTD	10
WP170328	RTD	6
MF180134	RTD	18
MF170064	RTD	7
WP170320	RTD	14
MF170126	RTD	2
MF180135	RTD	26
WP170316	RTD	11
MF170159	RTD	7
MF180129	RTD	3
MF170025	RTD	8
MF160048	RTD	2

Site Unique Identifier	Site Type	Driver Count
MF170275	RTD	9
MF170346	RTD	2
MF170061	RTD	13
MF170343	RTD	1
MF160008	RTD	6
MF180016	RTD	1
WP180082	RTD	3
MF170125	RTD	3
MF170042	RTD	4
WP170384	RTD	10
MF170279	RTD	2
WP170006	RTD	3
WP170007	RTD	1
MF170243	RTD	9
WP170311	RTD	3
WP170383	RTD	4
WP180075	RTD	1
WP160014	RTD	4
MF170282	RTD	2
MF180104	RTD	1
MF170286	RTD	5
MF170123	RTD	6
WP170310	RTD	1
MF170028	RTD	2
MF180023	RTD	2
MF160088	RTD	2
MF160012	RTD	3
MF170029	RTD	1
MF180097	RTD	1
WP170372	RTD	2
WP170055	RTD	1

Question 31**Dynamic rate load shift (MWh)***Supporting Data*

Site Type	Hour PST	MWh
MF	0	95.97
MF	1	84.20
MF	2	68.20
MF	3	53.90
MF	4	40.64
MF	5	28.01
MF	6	20.87
MF	7	22.02
MF	8	27.05
MF	9	32.68
MF	10	35.46
MF	11	39.01
MF	12	43.24
MF	13	46.40
MF	14	47.86
MF	15	49.50
MF	16	52.64
MF	17	55.33
MF	18	60.52
MF	19	66.64
MF	20	75.76
MF	21	85.57
MF	22	91.32
MF	23	95.53
WP	0	9.36
WP	1	7.55
WP	2	6.16
WP	3	7.67
WP	4	18.93
WP	5	60.85
WP	6	174.00
WP	7	384.44
WP	8	583.21
WP	9	594.82
WP	10	478.58
WP	11	356.48
WP	12	298.38
WP	13	266.75
WP	14	219.17
WP	15	159.96
WP	16	96.89
WP	17	52.87
WP	18	33.02
WP	19	27.84
WP	20	22.71
WP	21	17.44
WP	22	13.77
WP	23	10.95

Question 37
Aggregate load profiles for EV TOU rates within programs (kWh)
Supporting data

EV TOU Load Shape (kWh)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	238,166	223,071	150,423	93,382	59,895	38,703	23,961	21,036	25,654	31,793	36,541	41,811	42,644	42,007	42,935	44,243	45,264	46,329	45,299	41,302	38,686	36,034	33,637	111,840

Question 38
Aggregate peak load of EV TDU rates within programs (kW)
Supporting data

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
EV TDU Load Shape (kWh)	238,166	223,071	150,423	93,382	59,585	38,793	23,961	21,036	25,644	31,793	36,541	41,811	42,644	42,007	42,935	44,243	45,264	46,329	45,299	41,302	38,686	36,534	33,637	111,840
Peak Load Calculation																								
Peak Load	238,166 kWh																							
# of Days	911																							
Aggregate Peak Load (kW)	261 kW																							

APPENDIX B

The Program and Pilot Metrics tab includes metrics in the VGI Decision by program or pilot. This tab plans to list the utilities VGI programs and pilots and their associated aggregated metrics. Definitions of each metric are provided in the Descriptions tab. For draft purposes, illustrative program examples are provided.																			
Aggregated totals:										Totals:									