

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

**Data Request to San Diego Gas & Electric Company Regarding its Proposals Filed in
A.17-01-020**

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SDG&E should provide answers to the following questions and data to support the answers where applicable. These questions relate to SDG&E's overall proposal and to the "priority review" proposals. In light of the Prehearing Conference held on March 16, 2017, the Administrative Law Judge may instruct Applicants to formally file their Data Responses.

Overall Application

1. For SDG&E's Chart 1-2 (p. MMS-17), what are the sources of data for SDG&E's "emissions goals" and "forecasted emissions under current controls?"

SDG&E Response:

The 2020, 2030, and 2050 emissions goals shown in Chart 1-2 represent the SDG&E service territory's allocation of 1990 statewide GHG emission levels calculated by CARB. Tab 1 of the attached file "ED-DR-01-Q1" shows how the emission goals were calculated.

The "forecasted emissions under current controls" scenario is estimated based on CARB's Vision model baseline scenario. On-road data was collected from the Passenger and Heavy Duty Vision 2.1 modules while off-road data was estimated from the statewide data provided in the Vision 2.0 off-road module. Regional off-road emissions were estimated by applying the San Diego Air Basin allocation factor from the CARB OFFROAD model to the statewide emissions levels found in the Vision Off-road module. Tab 2 of the attached file "ED-DR-01-Q1" contains a flow chart that illustrates how this scenario was calculated.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

2. Provide workpapers in Excel format showing the cost assumptions SDG&E used to develop the proposed program budgets. This should include details about capital costs and expenses for each proposed program.

SDG&E Response:

See attached cost estimate spreadsheet provided in “ED-DR-01-Q2.”

3. Provide the model, including associated spreadsheets with formulas, used to calculate the CO₂, NO_x and VOC emissions reductions associated with SDG&E’s proposed programs, as identified in Chapter 8 of SDG&E’s testimony.

SDG&E Response:

The E3 PEV Grid Impacts Model used to calculate the CO₂, NO_x, and VOC emissions is E3’s proprietary model. SDG&E does not have access to E3’s proprietary models, however E3 has provided the “Fleet Delivery Emissions Impact Estimation” spreadsheet (See Spreadsheet “ER-DR-01-Q3.xlsx”) to demonstrate the assumptions and calculations used to estimate the emission impacts. This spreadsheet presents the emission reduction calculations for the Fleet Delivery priority review project. These estimates correspond to the values in Table 8-1A and Table 8-1B in Chapter 8 of SDG&E’s testimony.

While preparing for this data response, E3 discovered a coding error which led to an underestimate of the VOC emission reductions reported in Chapter 8’s Tables 8-1A and 8-1B. Updated VOC values for Tables 8-1A and 8-1B are provided below.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

Table 8-1A

Air Quality Improvements - Impact Estimates Life Time Impacts (VOC Update 4/3/2017)					
SB 350 Projects	GGE[1] Avoided	Electricity Fuel	Net Emission Reductions		
	CO2 (MT)	CO2 (MT)	CO2[2] (MT)	NOx (MT)	VOC (MT)
Priority Review Projects:	No change to CO2 and NOx Emission Reductions from January 20, 2017 Prepared Testimony of J.C. Martin (Chapter 8)				
Airport GSE					79.79
Electrify Local Highways					0.54
Dealership Incentives [3]					
Fleet Delivery					1.80
MD/HD and Forklift					9.06
Green Taxi/Shuttle/Rideshare					2.92
Total Priority Review Projects					94.11
Residential Charging Program:					
Program Case					579.60
Reference Case					176.32
Net Residential Program Impacts					403.28
Grand Total					497.38

[1] Gallons of Gasoline Equivalent (GGE).

[2] Net Reductions is GGE Avoided minus Electric Fuel.

[3] Dealership Incentives impacts are not listed due to likely overlap with other projects and program.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

Table 8-1B

Air Quality Improvements - Impact Estimates 2025 Annual Impacts (VOC Update 4/3/2017)					
SB 350 Projects	GGE[1] Avoided	Electricity Fuel	Net Emission Reductions		
	CO2 (MT)	CO2 (MT)	CO2[2] (MT)	NOx (MT)	VOC (MT)
Priority Review Projects:	No change to CO2 and NOx Emission Reductions from January 20, 2017 Prepared Testimony of J.C. Martin (Chapter 8)				
Airport GSE					3.73
Electrify Local Highways					0.03
Dealership Incentives [3]					
Fleet Delivery					0.11
MD/HD and Forklift					0.50
Green Taxi/Shuttle/Rideshare					0.17
Total Priority Review Projects					4.55
Residential Charging Program:					
Program Case					53.01
Reference Case					16.29
Net Residential Program Impacts					36.72
Grand Total					41.26

[1] Gallons of Gasoline Equivalent (GGE).

[2] Net Reductions is GGE Avoided minus Electric Fuel.

[3] Dealership Incentives impacts are not listed due to likely overlap with other projects and program.

4. In Figures 8-8, and 8-9, SDG&E shows the impacts of unmanaged and managed charging on load. Further clarify SDG&E's assumptions (footnote 26) regarding EV load and availability of renewables under the managed and unmanaged scenarios.

SDG&E Response:

Figures 8-8 and 8-9 illustrate managed and unmanaged electric vehicle load scenarios for the residential charging program. The illustrations assume that EVs are available for residential charging when they are parked at home (generally before and after work commutes between 5pm to 5am). The impact of renewable resources, especially solar, on the net load shape in SDG&E's service are shown in Figures 8-6 and 8-7, with peak net load shifting from afternoon to the evening hours.

5. Are the emissions factors included in the modeling SDG&E-specific? If not, why not?

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

SDG&E Response:

Two sets of emission factors are used in the emission impact estimates, one set for avoided vehicle fuel emissions and another set for incremental electricity emissions. The avoided vehicle emission factors are not SDG&E-specific since they are from ICA Analysis and EMFAC 2014 sources. The incremental electricity emissions are not SDG&E-specific since they are estimated per mmBTU and combined with hourly 40% RPS Marginal Heat Rate (BTU/kWh) estimated by E3's REFLEX model in order to reflect a future renewable resource portfolio and to be more consistent with cost-effectiveness methods and assumptions used in other CPUC proceedings.

6. Please detail assumptions on cost-effectiveness analyses and provide accompanying spreadsheets including:
 - a. Infrastructure analysis lifetime, projected utilization rate of the charging equipment, vehicle mileage by vehicle age, and load factor impacts.
 - b. Any utility specific cost characteristics for electricity generation.

SDG&E Response:

- a) Infrastructure lifetime assumptions are included in Chapters 3 & 4; utilization rate of charging equipment is included in the attached workpapers "E3 SB350 TE GIR Inputs(Final).xlsx" in worksheet "Vehicle Information" - see vehicles per charger in column "G"; load factor impacts are not calculated.
 - b) No SDG&E utility specific cost characteristics for electric generation are used.
7. What research or literature review did SDG&E complete prior to developing its portfolio of proposals? Include details of studies and results from previous pilot projects that were considered.

SDG&E Response:

To inform portfolio designs, SDG&E relied on its knowledge in administering programs and providing a positive customer experience, as well as, professional experience interacting with customers considering EV purchases, employees charging their EVs with dynamic rates, and EV customers charging at home on TOU rates. In addition, SDG&E had several discussions with potential partners about the proposed project ideas to help align their needs with the final project proposals.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

Also, SDG&E has proven through a multi-year Plug-In EV Pricing and Technology Study that customers can be incentivized to charge their EVs during off-peak hours (12 – 5 a.m.), and daytime hours when there are abundant renewables on the grid. SDG&E is in the process of implementing Power Your Drive, a CPUC-approved pilot, which will send drivers an hourly, dynamic day ahead price signal that reflects circuit and system conditions. This rate is designed to encourage off peak charging and charging when renewables are plentiful on the grid. This not only maximizes GHG and air emission reductions, it gives control to the consumer, enabling them to reduce their own fuel costs.

8. Does SDG&E propose that its rates should go through the priority review process? If so, why?

SDG&E Response:

Yes, SDG&E is proposing Grid Integrated Rates (GIR) for 3 of the 6 priority review projects. The Fleet Delivery Services pilot uses the Commercial GIR, the Green Taxi/Rideshare/Shuttle pilot and Electrify Local Highways pilot use the Public GIR. These rate proposals incorporate the grid-integrated price signal which is fundamental to the success of these pilots.

9. How will SDG&E implement any priority review projects that are approved before the corresponding rates?

SDG&E Response:

As stated above, the rates are incorporated into 3 of the 6 priority review projects. The priority review projects contain the GIR and enabling technology. Similar to Power Your Drive (which leverages the VGI rate), the rate cannot be bifurcated from the pilot itself.

10. What alternatives to full utility ownership of the infrastructure and electric vehicle supply equipment did SDG&E consider?

SDG&E Response:

As outlined in Mr. Schneider's Chapter 1 testimony on page MMS-15, "SDG&E proposes to leverage the experience of the competitive marketplace to procure equipment, services, and skills from industry providers. This promotes innovation, efficiency and

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

market growth while ensuring critical customer and ratepayer protections under the Commission's oversight."

As outlined in Ms. Brown's Chapter 2 testimony on page LB-13, "SDG&E's ownership of assets ensures that they are well-maintained, used and useful."

As outlined in Mr. Schimka's Chapter 4 testimony on page RS-17, "SDG&E is proposing to own, install, maintain and operate the EVSEs in 90,000 SDG&E residences. By partnering with third-party electric vehicle service providers (EVSPs) and IBEW-affiliated installation contractors, SDG&E's residential charging program will help expand the ZEV market and opportunities for further private sector participation in the market." Further, on page RS-19, Mr. Schimka states "SDG&E wants to make sure that L2 EVSE's are reliable, used, and useful for their expected life."

In order to capture all of these benefits, SDG&E is proposing full utility ownership (or end-to-end utility ownership) of the infrastructure and EVSE. SDG&E only contemplated end-to-end utility ownership for its proposals in an effort meaningfully accelerate transportation electrification. SDG&E's success should lead to further private sector market participation, opportunity and growth.

11. SDG&E describes Electric Vehicle Infrastructure Training Program certification (p. MMS-16). Please provide more information about this certification, including which organization develops or certifies the program and how it contributes to safety.

SDG&E Response:

According to an EVITP press release¹, "EVITP is a not-for-profit, volunteer EV industry collaborative, designed to deliver a structured platform to facilitate training and certification for the installation of Electric Vehicle Supply Equipment (EVSE) across the residential, commercial, and public markets."

See the EVITP website² for program details, including the training course overview, and more information about the non-profit organization that develops and certifies the program.

¹ [http://www.necanet.org/contractor-resources/hot-topics/topic/article-view/press-releases/2011/04/20/electric-vehicle-infrastructure-training-program-\(evitp\)-holds-master-train-the-trainer-event](http://www.necanet.org/contractor-resources/hot-topics/topic/article-view/press-releases/2011/04/20/electric-vehicle-infrastructure-training-program-(evitp)-holds-master-train-the-trainer-event)

² <http://evitp.org>

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

As described on their website, “The Electric Vehicle market continues to expand in North America and it is critical that EVSE equipment be properly installed to the highest standards to safety and quality. The EVITP program was designed to provide installers with the most comprehensive classroom and hands-on training available in the market today. All EVITP Certified Installers must pass a certification exam for proof of knowledge and skill. The EVITP Training Program has rigorous training standards and is taught by instructors who have well documented qualifications and considerable experience in their areas of expertise. High entry standards and a demanding exam ensure strong classroom performance and consistent training results. EVITP courses are available to electricians in compliance with the mandatory requirements of each state/municipal jurisdiction in the United States and Canada. Core training is supplemented with local requirements where applicable. Upon completing written and hands-on lab testing, participants passing the course will receive Certification through EVITP.”

Fleet Delivery Services Program

1. In SDG&E’s Fleet Delivery Services proposal, it is proposing to own all of the charging equipment. Will there be a participation payment? If so, how will it be calculated?

SDG&E Response:

SDG&E is not proposing a participation fee for this pilot. As discussed in the Leveraged Funding section beginning on RS-53 of Mr. Schimka’s Chapter 3 testimony, electric vehicles in this market segment are more expensive than internal combustion engine equivalents. Participating customers will be required to procure and operate the electric vehicle as part of this pilot. Yes, SDG&E is proposing end-to-end ownership of utility infrastructure and charging equipment.

2. How long will SDG&E own and maintain the charging equipment associated with the Fleet Delivery Services program?

SDG&E Response:

Contracts with site hosts for the Fleet Delivery Services program are expected to be for a period of 10 years. SDG&E would be responsible for maintaining all components of the assets involved in the project per the FERC lifespans of the assets.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

3. What class of vehicles are the UPS trucks associated with the Fleet Delivery Services proposal? Do they use standard L2 electric vehicle service equipment (EVSE)? Would the other project partners use standard, commercially available technology?

SDG&E Response:

SDG&E has not mandated a specific vehicle class for this pilot. Different fleet delivery service operators utilize different sized vehicles.

SDG&E anticipates that UPS will utilize standard L2 EVSE for most of their charging needs. In addition, the installations at UPS will also have one DC Fast Charging station included at each of the three locations. This will provide a faster charging alternative for UPS when needed, and of course, their vehicles must be capable of charging at those higher speeds.

At the other customer sites, standard commercially available L2 charging technology is anticipated. SDG&E will coordinate with customers to ensure the appropriate charging infrastructure is installed to support their electric delivery vehicles.

4. What information does the data logger involved in the Fleet Delivery Services project collect? Is it different than what could be collected by the EVSE? How will SDG&E use this information?

SDG&E Response:

The data logger in the Fleet Delivery Services project is installed on the vehicle, and it gathers performance data about the vehicle while on the road (miles driven, speed, energy consumed, etc.). It is different than the type of data that would normally be collected by an EVSE (that has metering capabilities). That type of EVSE would collect data related to frequency, duration, and consumption of charging. All of this information is important, so that SDG&E can study the vehicles, their charging behavior, their driving behavior, and their overall performance. This will be documented in a report at the end of the project.

San Diego International Airport (SDIA) Ground Support Equipment (GSE) Program

1. SDG&E states that it has worked with SDIA to review ground support equipment GSE growth and energy usage. What are the lessons learned? Please provide any relevant data associated with this review to support any conclusions or recommendations SDG&E has developed.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

SDG&E Response:

Over the past ten years, the electric proportion of the SDIA Ground Support Equipment (GSE) fleet has grown approximately 1.8% annually. Transportation Electrification leaders such as Southwest Airlines represent the majority of eGSE ownership at SDIA, and prefer ratios of one charger per two vehicles. Some of the chargers have data logging capabilities, though they are limited in value due to a complicated mechanism of retrieving that data on a regular basis. Because of this primitive logging capability, SDG&E's initial recommendation is to install load research meters on all existing and future eGSE chargers to reliably capture the frequency, duration and consumption of eGSE charging so that a charging plan with recommendations can be created.

2. Why hasn't SDIA installed any charging ports since 2013?

SDG&E Response:

SDG&E does not know why there have not been any chargers installed on the air operations side of SDIA since 2013.

3. It appears that electric vehicles were purchased in 2006 through 2014. What is the reason additional vehicles have not been purchased since 2014?

SDG&E Response:

SDG&E does not know details about electric vehicle purchases at SDIA since 2014 because SDIA has not completed a GSE survey since 2014.

4. Does SDG&E intend to wait until funding is secured for new electric GSE before developing new charging equipment? Have GSE operators shown interest in and ability to procure electric GSE to participate in the project? Please provide estimated numbers of GSE necessary prior to SDG&E making initial investments.

SDG&E Response:

SDG&E will only install chargers once commitment from SDIA tenants is confirmed. SDIA tenants have expressed an interest in furthering their eGSE installations and are

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

planning on procuring eGSE equipment to participate in the project. SDG&E recommends installation of an eGSE charger for each 2-3 new vehicles that SDIA tenants commit to.

5. Will ownership of EVSE and associated infrastructure at SDIA require an easement for SDG&E? Is this feasible for SDIA? Are there any logistical concerns with SDG&E requiring access to a secure airport site?

SDG&E Response:

SDG&E and SDIA have discussed SDG&E's ownership of charging infrastructure at SDIA. SDG&E and SDIA are prepared to make appropriate property use and access arrangements upon CPUC approval of this project.

6. How will the load of electric GSE be managed and optimized with SDIA's on-site solar generation?

SDG&E Response:

The purpose of this priority review project is to expand the eGSE fleet and collect data on current and future eGSE, and then develop recommendations and methodology for load management at SDIA. Until the eGSE data is gathered and studied, SDG&E doesn't know exactly what the recommendations will be to manage and optimize the charging with the on-site solar generation.

7. What rate will the GSE at SDIA be on? Is SDIA a single SDG&E customer or is each GSE operator/vendor at the airport a separate customer?

SDG&E Response:

GSE charging will remain on the same rate schedule as the airport or the airport tenant. In most instances, this means that the GSE will charge on the rate schedule that SDIA is on. In other instances, this means that the GSE will charge on the rate schedule that the airport tenant is on. This varies by lease arrangement. One of the outcomes of the Airport GSE project will be to study and integrate GSE charging in order to incentivize charging during times that utilize the airport's onsite solar or during times of excess capacity on the grid. This information will be examined to determine if a new rate is appropriate for this market segment.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

8. SDG&E proposes to install load research meters, EVSE, and data loggers for its SDIA infrastructure project. What is the function of the load research meter and data loggers that cannot be accomplished with the submeter in the EVSE?

SDG&E Response:

The EVSE for the SDIA project are for lead-acid batteries and are called “industrial chargers.” They typically do not come from the manufacturer with built-in utility grade submeters. Many of the chargers for eGSE and forklifts, such as those currently at SDIA, do not have metering of any sort. Of the small number of chargers that have metering, the process to gather data from them is cumbersome and ineffective (and must be done frequently to avoid losing data). For that reason, the airport has not gathered any data from these chargers prior to January 2015, and has only gathered data once since that time. Hence the need for load research meters in the project.

SDG&E also recommends that data loggers be installed on the vehicles to gather vehicle performance data as discussed above.

9. Will the participating customer pay any participation payment?

SDG&E Response:

SDG&E is not proposing a participation fee with this project.

10. Has SDG&E engaged any union or organized labor groups in pilot development?

SDG&E Response:

SDG&E met with union management to discuss the projects in SDGE’s SB 350 application in general terms after the projects were developed, but before they were filed. Just before the projects were filed with the CPUC, the IBEW provided SDG&E with a letter of support for the projects (as submitted in Appendix A of SDG&E’s SB 350 application).

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

~~Port of Long Beach~~ Port of San Diego Electrification Program

1. In its Port Electrification proposal, SDG&E states that EVSEs for electric forklifts and other electric port equipment are not developed to allow the equipment to respond to price signals. What automation technology needs to be developed and how does the pilot address this?

SDG&E Response:

Automation technology for medium and heavy duty vehicle charging that would manage load based on price signal or other inputs does not currently exist and would need to be developed. The reason it does not exist is because MD/HD charging is not yet standardized, and these advanced features haven't been needed in the past or asked for by customers.

The technology that would need to be developed would take an input signal, such as an hourly price, and use that input to cause specific behavior by the charging equipment.

SDG&E's MD/HD pilot is about gathering and studying data from the load research meters (charging behavior), and from the data loggers installed on the vehicles (vehicle performance).

As more is understood about how the vehicles operate, and charging systems for MD/HD vehicles becomes more standardized, SDG&E can use this data to better understand port vehicle charging patterns, make recommendations about future technology solutions needed, and could also develop a grid-integrated rate for MD/HD equipment in the future.

2. How will the new electric load at the ~~Port of Long Beach~~ **Port of San Diego** be managed, especially if the EVSE does not allow for response to price signals?

SDG&E Response:

The electric load for this project will be managed manually by the Port of San Diego tenants that are participating. The main purpose of this project is to collect and study vehicle and charging data. Currently, there is minimal data available on electric medium and heavy trucks or forklift operations at the Port. Gathering and studying the data will provide a foundation that will lead to future load management recommendations, and future grid integrated rate recommendations.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

3. Which rate will SDG&E apply to the new electric port equipment?

SDG&E Response:

As stated in Chapter 3, Mr. Schimka's testimony on page RS-39, Lines 5-6, "The new load will utilize the customer's existing accounts and rates."

4. SDG&E proposes to install load research meters, EVSE and data loggers for its port electrification project. What is the function of the load research meter and data loggers that cannot be accomplished with the submeter in the EVSE?

SDG&E Response:

Most charging equipment available for MD/HD vehicles does not have a built-in submeter that can be utilized. The load research meters recommended by SDG&E will measure electrical consumption data related to charging, and the data loggers will be installed on-board the vehicles to collect vehicle-specific data away from the charging stations. This load and vehicle data will be used to understand medium and heavy duty electric vehicle usage and charging characteristics and will be included in reports about the project. The data may also be used to develop future program proposals and rates that meet the needs of the customers while minimizing grid impacts.

5. Will the participating customer pay any participation payment?

SDG&E Response:

SDG&E did not propose a participation fee for this project.

6. Has SDG&E engaged any union or organized labor groups in pilot development?

SDG&E Response:

SDG&E met with union management to discuss the projects in SDG&E's SB 350 application in general terms after the projects were developed, but before they were filed. Just before the projects were filed with the CPUC, the IBEW provided SDG&E with a letter of support for the projects (as submitted in Appendix A of SDG&E's SB 350

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

application).

Electrify Local Highways Program

1. What research has SDG&E and/or Caltrans conducted to ensure the four sites selected for the Electrify Local Highways project have enough EV demand to fully utilize the proposed equipment installation?

SDG&E Response:

As part of Caltrans' 2016 Sustainability Implementation Action Plan³, one of Caltrans' Sustainability Implementation Action Items provides that Caltrans must "develop plans to evaluate new and existing state-owned parking structures lots to install plug-in EV charging infrastructure where most cost-effective and appropriate." In conversations with Caltrans, the four sites selected were Caltrans' four highest priority locations, since these were the next sites to undergo upgrades or construction. In addition, these sites were selected due to their proximity to the transportation corridors and lack of charging stations in these areas. For example, in National City, the only public charging stations are located at dealerships. There are no public charging stations along Interstate 15 near Pala, and there is only one DC fast charger along Interstate 5 in Oceanside on the way up to Camp Pendleton and San Clemente. Finally, the Oceanside Transit Center is looking to replace the 10 Blink charging stations located there.

2. Why are direct current fast charging (DCFC) stations necessary for long dwell-time Caltrans park-and-ride lots?

SDG&E Response:

As outlined on page RS-19 of Mr. Schimka's Chapter 3 testimony on line 10, Caltrans said that their DCFC station at their existing Del Lago Park-and-Ride in Escondido charges approximately five cars per day. For this reason, Caltrans believes their Park-and-Ride locations are good for not only long-duration parking and charging, but also as quick stops for DCFC use.

This point is emphasized on page 2 of the attached "Caltrans Data" file. Approximately 85% of the energy dispensed charging vehicles at the Caltrans Del Lago site was for DC

3

http://www.dot.ca.gov/sustainability/docs/2016_Sustainability_Implementation_Action_Plan_First_Ed_092016.pdf.
See Page 28, row B2.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

Fast charging, so it is clear there is value in offering both types of charging at the Park-and-Ride sites.

In addition, as outlined on page RS-22 of Mr. Shimka's Chapter 3 testimony on line 13, during SDG&E's collaboration with Caltrans, it was conveyed that additional research performed by Caltrans' Sustainability Technical Advisory Committee on ZEVs determined all charging stations at their Park-and-Ride locations must be: (1) public, due to their charter of serving both residents and visitors; (2) accessible by anyone with a credit card and operate under the Electric Vehicle Charging Stations Open Access Act; and (3) allow for drivers to park for long durations (for commuters) or for drivers to get a fast charge (for trip continuation).

3. Are the selected Caltrans park-and-ride lots open 24 hours per day?

SDG&E Response:

The four proposed Caltrans park-and-ride lot locations are open 24/7.

4. What information is available from the existing Caltrans site with EV charging? What information is available from other park-and-ride locations that offer EV charging? What lessons learned can be applied at the four sites in this project?

SDG&E Response:

The Del Lago Park-and-Ride in Escondido is the only existing Caltrans site with Blink Network Level 2 and DC Fast EV charging equipment. Current EV charging information about this location can be found on the Plugshare website, where there are numerous complaints about the Blink chargers at Del Lago:

<https://www.plugshare.com/?location=47312#>

One of the primary lessons learned at the Caltrans Del Lago site is that the charging equipment is frequently out of order (per the comments on the Plug Share site), and there needs to be an owner in place that will have the stations repaired and maintained when there are issues so they are an available resource to drivers.

5. How will SDG&E apply the grid-integrated rate at the Caltrans sites?
- a. What does a customer need to do to pay via their SDG&E bill?
 - b. If the hourly pricing is not displayed on the EVSE, how can SDG&E encourage drivers to charge based on pricing if they do not use the app?

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

SDG&E Response:

- A. In order for a customer to pay via their SDG&E bill, an existing SDG&E customer can visit the My Account section of sdge.com to add the account to their profile, or a new SDG&E customer can sign up for a new account on sdge.com.
- B. As mentioned in Mr. Schimka's Chapter 3 testimony on page RS-30 on lines 10 and 11, "This project will also test the NIST standards set for public charging signage, rate display and general retail EV fuel dispensers, as outlined in NIST handbooks 30, 44, and 130." A driver may use an app to get pricing, but will not have to use an app. Pricing will be displayed on the EVSE, per NIST Handbook 44, Section 3.40, paragraph S.2.4.1 on page 3-151.⁴
6. SDG&E states that it included "all the construction costs" in its project budget. Does this include SDG&E paying for construction costs that are related to renovating the Caltrans sites, but not directly related to installing EVSE?

SDG&E Response:

As stated in Mr. Schimka's Chapter 3 testimony on page RS-26 at line 18, "SDG&E's construction costs are related to installing EVSE and not renovating the Caltrans sites."

7. Will parking spaces be reserved for EV drivers only? Is there any charge for parking when not charging?

SDG&E Response:

Parking spaces with charging stations will be reserved for EV drivers via signage. There is no charge to park at a Caltrans park-and-ride site, and there will be no additional charge for parking when not charging.

8. Since SDG&E has not yet assessed what electrical infrastructure would be necessary, if one project is much more expensive than anticipated, will SDG&E abandon this project?

⁴ <https://www.nist.gov/sites/default/files/documents/pml/wmd/pubs/2016/02/18/3-40-16-hb44-final.pdf>

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

SDG&E Response:

SDG&E has budgeted for a new electric service to be installed at the four Caltrans park-and-ride sites to power the proposed charging stations. Assuming that the Electrify Local Highways program is approved with the four proposed sites, and one of the sites turns out to cost significantly more than originally budgeted due to an unforeseen circumstance (such as a longer trenching run to the power source), then SDG&E will further study the four proposed sites as a package to determine if all four sites can still be constructed within the approved budgetary framework (since some sites may cost more than the estimate and some may cost less than the estimate and the costs may average out). SDG&E might suggest relocating the over-budget site's electric service closer to the charging stations to reduce the costs for construction. However, if after review, it is determined that the costs for all four sites would put the project over-budget, then SDG&E will investigate alternatives, which may include building fewer sites if necessary.

9. Will these sites be reported to the US DOE's Alternative Fuels Data Center?⁵

SDG&E Response:

Yes.

Dealership Incentives Program

1. Describe SDG&E's current work with car dealerships on promoting EV sales.

SDG&E Response:

SDG&E has been working with local dealerships over the last five years encouraging them to provide their customers information on the utilities EV time-of-use rates either verbally or with brochures dropped off at the dealership locations. A few years ago, SDG&E teamed up with SANDAG, Clean Cities Coalition, and Center for Sustainability on a single brochure that listed each organization's benefits for EV drivers. The brochures were distributed to local dealerships.

In 2015, SDG&E began talking with Plug In America about a dealership education program. It was funded in early 2016, and details finalized in March 2017. The four-

⁵ http://www.afdc.energy.gov/fuels/electricity_locations.html.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

month program has a goal of educating 12 salespeople in SDG&E's territory to provide a positive customer experience to EV buyers and lessees.

2. Are there any other pilots or programs working with car dealerships that SDG&E can leverage, such as the CVRP? Can SDG&E leverage existing efforts, such as Plug-In America's dealer advisory council?⁶

SDG&E Response:

Yes, SDG&E will attempt to leverage all dealership pilots, programs and efforts it is aware of to help shape its Dealership Incentives Program.

3. Provide more information on the proposed education and outreach materials.
 - a. Will they be offered to the broader public or dealers not participating in the program?
 - b. Will dealers and salespeople be educating customers purchasing EVs about the benefits of a TOU rate?
 - c. What existing dealership incentive programs are being used as examples in developing this program?

SDG&E Response:

- A. The focus of the program's education and outreach materials will be for the dealers in the program. However, if there are funds available to provide them to dealers not in the program and to the public they will be made available.
- B. SDG&E's education and outreach materials will educate customers on all relevant rate offerings (VGI rate if they are a Power Your Drive customer or new GIR for SB 350 projects once those are approved).
- C. Dealership programs by Plug In America, Center for Sustainable Energy and the State of Connecticut.

4. If there are more than 200 salespeople interested in participating in the Dealership Incentives Program, how will SDG&E select participants? If there are fewer than 200

⁶ <https://pluginamerica.org/dealers/>.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

salespeople interested in participating in the Dealership Incentives Program, how will SDG&E encourage more participation?

SDG&E Response:

As outlined in Mr. Schimka's Chapter 3 testimony on page RS-84 at line 17, "Salespeople will be enrolled in the program on a first-come, first-served basis. If there are fewer than 200, we will continue to work with the New Car Dealers Association to communicate with their dealerships about the program, as well as reach out to the dealerships directly."

In addition, Mr. Schimka's Chapter 3 testimony on page RS-82 says that one of the six main goals of the program is to "emphasize EV sales in DACs."

5. How many dealerships in SDG&E territory are in the New Car Dealers Association or Auto Alliance and eligible to participate in the Dealership Incentive Program?
 - a. How many total sales people work at the eligible dealerships?
 - b. What are the dealerships' current annual EV sales rates?

SDG&E Response:

There are 115 dealerships in SDG&E's territory in the New Car Dealers Association. As for the Auto Alliance, there are 12 manufacturer members and our hope is that these manufacturers communicate to their own dealerships in our territory about the program.

- a. This information is not publicly available.
 - b. This information is not publicly available by dealership, however SDG&E knows approximately how many EVs are sold in aggregate for our territory each month by data sources like Polk, CVRP, etc.
6. SDG&E states that sales people receive a low commission of \$150-200 per EV. What is the average commission for selling internal combustion engine cars?

SDG&E Response:

While many dealerships have different commission structures, most are paid on a percentage of profit. This Motortrend article provides examples of how a car salesman is paid: <http://www.motortrend.com/news/car-salesman-confidential-how-much-do-we-really-make/>

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

Green Taxi/Rideshare Program

1. Will the charging stations SDG&E builds for its Green Taxi/Rideshare Program be open for use by non-participants and the general public? If not, why not?

SDG&E Response:

No, the charging stations will not be open for use by non-participants and the general public during the duration of the pilot. This is for two reasons: 1) the locations targeted for the charging facilities are under control by the site owner/manager, and 2) these locations may not be accessible to those beyond the targeted vehicles types (e.g., the taxi and TNC/Rideshare holding lots at the San Diego International Airport (SDIA) are only accessible by permitted taxis and TNC, respectively).

2. Why do all customers using the charging stations in the Green Taxi/Rideshare Program have to enroll in an SDG&E tariff? Since SDG&E intends to own the stations, couldn't it provide a rate directly to the driver so non-customers could use the facilities?

SDG&E Response:

As stated in Mr. Schimka's testimony on page RS-63, lines 3-5 and 7-10, the tariff is designed to encourage the drivers to maximize the volume of zero emission miles driven by providing an opportunity to select low priced, off-peak hours of the day for vehicle charging. The drivers participating in this project are required to enroll in the rate. For the duration of the pilot, for the reasons stated in answer 1 above, these project charging facilities are for exclusive use by those drivers enrolled in the project and tariff. SDG&E is proposing limiting usage of the installed charging station to program participants so wait time will be minimized.

3. Provide additional information about the 2010/2011 vehicle incentive program mentioned in the Green Taxi/Rideshare Program proposal.
 - a. Who funded the incentives?
 - b. Who was eligible to receive the incentives?
 - c. What were the results of the program in terms of EV adoption rates?

SDG&E Response:

- a. The 2010/2011 Airport Vehicle Rebate Program was funded through the Reformulated Gasoline Settlement Fund.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

- b. Taxi owners, shuttle owners, and livery vehicle owners with permits to operate at SDIA were eligible for the incentives.
 - c. Resultant learnings were that the taxi industry is very slow to utilize new technologies. The program did not sell any vehicles for the first 8 months despite 10 years of hybrid vehicles being available. To help the program, SDIA and Center for Sustainable Energy increased the rebate for the first five hybrids by 300% (from \$2,500 to \$7,500) and 200% for the next five hybrids. At that time, EVs were brand new and there was no L2 or DC Fast Charging to enable EV taxis at or nearby SDIA. There still isn't much charging infrastructure around SDIA, and EV Taxis still have the same charging challenges until appropriate charging is installed.
4. Given the state's Clean Vehicle Rebate Program and Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project, why is a \$10,000 vehicle incentive necessary?

SDG&E Response:

The CVRP is applicable to the taxi fleet EVs and no rebates have been claimed for taxis. Therefore, SDG&E concludes that since no taxi companies have acquired an EV for their fleet, a CVRP-style rebate is not sufficient to encourage adoption. This was confirmed anecdotally with discussions with taxi companies. Please also see the response to 3c above. Similarly, since only one shuttle company in the region (serving the SDIA) has adopted electric fleet vans, SDG&E concluded that the HVIP rebate is not sufficient to encourage EV adoption. Therefore, as a small pilot, an incentive that substantially approximates the incentive provided in a similar program (see footnote 77 and 82 in Chapter 3) during the 2010-2015 timeframe increases the likelihood of meeting the objective to introduce this technology to these fleet operators with the expectation that both the driving experience and the opportunity for low fueling costs (through off-peak charging) will jump-start fleet interests in EVs. As stated on page RS-62, 8-11, "Exposing taxi, shuttle and rideshare companies and drivers to electric vehicles ("EVs") at this time will increase confidence in the technology, and knowledge about the relevant economic benefits, which will help to accelerate the widespread adoption of EV in this market."

5. How does SDG&E intend to coordinate the charging schedules of the different vehicle and fleet types to ensure optimal charger utilization?

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

SDG&E Response:

SDG&E does not intend to coordinate charging schedules, because the rate and fueling incentives proposed (see page RS-69) will sufficiently encourage drivers to maximize the volume of zero emission miles driven, by creating an opportunity to reduce fueling costs by charging the EV during low-priced, off-peak hours of the day. Maximized volume of zero emission miles driven will yield high charging facility utilization rates. In addition, as noted on page RS-73, lines 5-20, high utilization rates are facilitated by: 1) charging facility site selection (accessible and convenient locations), 2) the rate of facility installation will keep pace with the rate of EV adoption (see footnote 91, page RS-73), and 3) project charging facilities will be shared by taxi, shuttle and rideshare EV fleet.

6. SDG&E is proposing to install L2 EVSE at TNC drivers' homes.
 - a. Is SDG&E proposing to own and maintain this equipment?
 - b. How does SDG&E intend to maintain the EVSE? Does this require an easement?
 - c. What happens if the customer is no longer a TNC driver, if they no longer own an EV, or if they move? How does SDG&E monitor these conditions?

SDG&E Response:

- a. Yes, in a manner similar to the proposed Residential Charging Program.
 - b. As stated in answer 6a, in a manner similar to the proposed Residential Charging Program.
 - c. Goals of this pilot are to generate increased exposure to EVs, increase EV adoption, encourage off-peak charging, and to maximize zero emission miles driven by high annual mileage transportation modes such as taxi, rideshare and shuttles. In light of these expected results, as long as the drivers continue to own or lease their EV and stay enrolled in the EV rate, then the L2 EVSE will remain in place. The EVSE will be removed if the driver is no longer driving an EV.
7. If the Green Taxi drivers receive an EV fueling credit of \$4,000, essentially making charging "free," how can they be incentivized to charge at optimal times without a price signal?

SDG&E Response:

The total fueling cost for the first year depends on the hourly price the driver selects for fueling the taxi. As stated on page RS-66, lines 15 to 17, "...the incentive not only

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

encourages each driver to maximize the number of zero emission miles driven, as well as helping to make these fueling dollars go further by charging during lower-priced, off-peak hours.” For example, consider these assumptions and conclusions:

- A taxi driver, on average selects those hours priced at \$0.22 per kWh
- A taxi driver drives 4,500 miles per month (roughly 5 times greater than a conventional passenger vehicle)
- One kWh provides three miles of EV range, using 1,500 kWh per month
- This amounts to a fueling cost of \$330 per month, or \$3,960 over 12 months (rounded to \$4,000)

Therefore, if a taxi driver selects those hours priced at more than \$0.22 per kWh, then the fueling incentive will not cover 12 months of fueling, so drivers will be compelled to study the day-ahead prices to plan their fueling schedule for the next day to stretch the fueling incentives over more zero emission miles. It is important to note that the fueling incentive can only be used at project charging facilities, and if a driver does not use the entire \$4,000 incentive over 12 months of operation, they do not keep the difference. As drivers enroll in the rate and project, SDG&E will provide educational materials to drivers to ensure that they make the most effective use of this incentive (i.e., stretching their fueling dollars).

8. Could the TNC portion of the pilot apply to TNC drivers that already own an EV, or does this only apply to drivers who purchase an EV as part of the pilot?

SDG&E Response:

Yes, the TNC portion of the pilot can apply to TNC drivers that already use the EV for providing rideshare services. The objective remains the same, which is to maximize the volume of zero emission miles driven with that EV by enrolling in the rate and project.

9. What current or past work with shuttles is SDG&E leveraging for this pilot?

SDG&E Response:

Anecdotal information gathered by working with the only electric shuttle company in the region has provided insights on not only the need for fast charging facilities, but also a rate design that works to encourage drivers to maximize the volume of zero emission miles driven, by creating an opportunity to reduce fueling costs by charging the EV during low-priced, off-peak hours of the day.

Energy Division DATA REQUEST
ED-SDG&E-DR-01
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: March 27, 2017
DATE RESPONDED: April 10, 2017

In addition, SDG&E also sponsored a University of Arizona MBA consulting project to better understand operational costs of commercial electric vehicles. This project focused on electric shuttle operations and charging.

10. Has SDG&E engaged any union or organized labor groups in pilot development?

SDG&E Response:

SDG&E met with union management to discuss the projects in SDGE's SB 350 application in general terms after the projects were developed, but before they were filed. Just before the projects were filed with the CPUC, the IBEW provided SDG&E with a letter of support for the projects (as submitted in Appendix A of SDG&E's SB 350 application).