TURN DATA REQUEST
TURN-SDG&E-DR-01
SDG&E TRANSPORTATION ELECTRIFICATION MD/HD and V2G PROPOSALS (A.18-01-012)
SDG&E RESPONSE
DATE RECEIVED: January 30, 2018
DATE RESPONDED: 2/13/2018

Question 1: Please provide the total revenue requirement in Excel on annual basis through 2030 for the MD/HD charging infrastructure program. Please sum the remaining revenue requirement after 2030 in a column to the right. Please provide two separate files or tabs (clearly marked) for "100% utility ownership of EVSE" and "50% utility of ownership of EVSE" options. Please provide all workpapers and calculations related to this response in Excel format, which should include all items impacting the revenue requirement.

SDG&E Response:
For the response to this question and the calculation is seeks, please refer to SDG&E excel attachments:

      Turn DR-01 Q-1 MDHD Buses-100percent-REV REQ Input-12-30-17
      Turn DR-01 Q-1 MDHD Buses-50percent-REV REQ Input-12-30-17
      Turn DR-01 Q-1 Rev Req Summary MDHD Elect. 12-30-17-PET Tax Chng-01-08-18
      Turn DR-01 Q-1-Rev Req-2 cases-01-31-18

In addition to the attached workpapers submitted as part of this response, it is important to note that SDG&E is asking that the Commission approve the revenue requirement for years 2019-2025 only and not beyond 2025.   Please refer to the Chapter 5 direct testimony of Gregory Shimansky Section I Purpose & Summary GDS-2 lines 1-7. Revenue requirements shown beyond 2025 (workpapers etc.) are for illustrative purposes only.

Question 2: Please provide a Table summarizing the annual bill impacts for the MD/HD charging infrastructure program for the residential and small commercial classes through 2040 or the latest date available.

SDG&E Response:
Please refer to SDG&E excel attachment titled: "TURN DR 1 Q-2 Annual Bill Impacts through 2040". The referenced file provides the average rate impact by class, which reflects the impact on the average bill, by customer class. This percentage change is expected to be the same for all customers within that class, assuming no change in usage. This file also provides the annual bill impacts for the MD/HD charging infrastructure program for a typical residential customer through 2040. SDG&E does not have a "typical" small commercial customer and therefore cannot provide the same data for this customer class.

Question 3: Please provide all cost estimate workpapers related to the proposal, segregated at a minimum by class of vehicle and type of equipment (e.g. such as the categorization provided in Chapter 5 testimony, Table GDS-17, p. GDS-15). Please indicate what costs are "utility-side" (front of the meter) versus "customer-side" costs (behind the meter).

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Direct cost estimate workpapers have been provided in response to this question. Attachments include:
- Final – Confidential – Unredacted – MD HD Cost Estimate 100 Percent utility ownership
- Final – Confidential – Unredacted – MD HD Cost Estimate 50 Percent utility ownership
- Allowance Amounts – Confidential

SDG&E did not calculate the "utility-side" versus "customer-side" costs because SDG&E's cost estimate was not structured based on that distinction. Creation of this type of cost breakdown involves a series of assumptions on key data points, such as length of trenching required on the "customer-side". These data points can vary significantly between sites.

It should be noted that while compiling the data responsive to this data request, SDG&E discovered an error in its prior calculations. Specifically, the error relates to an overstatement of forecasted costs of $515,088 (found at the tab titled "Estimate Class 2-3", line 21, column C of the direct cost spreadsheets). The correction results in a cost reduction on the order of 0.3%. Accordingly, SDG&E intends to correct its testimony at a future appropriate time, most likely at the time of hearings. In the meantime, the data provided in this response is corrected.

Question 4: If not previously provided, please provide an estimate of the number of vehicles supported by SDG&E's proposal, segregated by class (2-8).

SDG&E Response:
For cost estimate purposes, SDG&E assumed the following electric vehicle supply equipment (EVSE) counts. Generally, a one for one ratio, EVSE to electric vehicle, is assumed. Note that actual uptake by vehicle class will be customer driven.

- Class 2 – 3:   1200
- Class 4 – 5:   900
- Class 6:   300
- Class 7 – 8:   450
- On-route transit chargers: 10
- Forklifts and TRUs: 225 (capped)
3,085 EVSEs total for Program

Question 5: Please provide the "Proprietary IHS/Polk Data" referenced in Chapter 2 Testimony, p. HJR-9, footnote 10, in Excel. Please provide the most recent version of the data in addition to the file used by SDG&E for its testimony.

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SDG&E's annual license for the IHS/Polk Data has expired. Under the license agreement, SDG&E was required to dispose of the source data at the expiration of the license. However, we were allowed to retain information derived from the source data.

IHS/Polk Data - Derived from Source Data

Commercial Vehicles in SDG&E Service Territory
June 2016 Registrations

Class	
1	49096
2	68068
3	6837
4	4825
5	4168
6	5176
7	2899
8	11142
TOTAL	152211

Class 2 - 8   **103115**

Question 6: Please provide all workpapers that support Chapter 7 testimony, "GHG and Air Quality Benefits."

SDG&E Response:
Please see workpapers files "MD-HD-OffRd AQ Impacts (Final).xlsx" and "MD-HD AQ Impacts (Final).accdb".

Question 7: Please provide the *total* annual CO2e, NOx, and PM2.5 emissions from the various vehicle classes in the same format as presented in Table 7-1 (and 7- 2) in Chapter 7 testimony, p. JCM-4. Please provide this in Excel.

SDG&E Response:
The model used for Table 7-1 and 7-2 calculates only first-year and lifetime emission impacts. To be responsive to TURN DR-01 Question 7 SDG&E estimated annual emission impacts by incrementing the first-year calculations for each year over the life of the vehicles, please see the attached workbook "TURN DR-01 Q7.xlsx" for the total annual emission impacts estimated with this method.

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Question 8: Has SDG&E conducted a cost-benefit analysis for its proposal? If yes, please provide the analysis and supporting workpapers. If no, please explain why not.

SDG&E Response:
No, SDG&E did not conduct a cost-benefit analysis for its proposal. A cost-benefit analysis was not required by the Assigned Commissioner's Ruling Regarding the Filing of the Transportation Electrification Applications Pursuant to Senate Bill 350 (September 2016). The Program is designed to support the goals of Senate Bill 350, encourage greenhouse gas reductions and accelerate transportation electrification.

Question 9: Please provide the expected incremental charging revenue for each class of vehicle (or like vehicles grouped together) for a ten-year period. Please provide a per vehicle estimate and total class estimate. Please provide all workpapers, calculations, assumptions, and sources.

SDG&E Response:
SDG&E did not conduct this analysis in preparing the application and testimony. Incremental charging revenue will depend on vehicles adopted, size of battery, miles traveled per day and other factors.

Question 10: Please provide the annual cost reduction savings to the operator (host) due to reduced fuel, maintenance, and any other meaningful cost reductions by class of vehicle (or like vehicles grouped together). Please provide all workpapers, sources, and assumptions related to this response.

SDG&E Response:
SDG&E has not calculated the annual cost reduction savings to the operator due to reduced fuel or maintenance costs.

Question 11: Chapter 2 testimony, page HJR-9, lines 5-6, state, "SDG&E's program targets a small fraction of the population – approximately 3% of SDG&E service territory population."
      a. Please provide all workpapers, sources, and an explanation of how this 3% target was arrived at.
      b. Please explain whether 3% of each class of vehicle was assumed or if it is of the total number of vehicles. Please provide all workpapers/calculations that support this response.
      c. Please provide the number of EVs by class currently in SDG&E's territory, and/or whatever information is known to SDG&E regarding MD/HD and off-road EV adoption through 2017.

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SDG&E Response:

a. Adoption curves show that the first 2.5% of technology adopters are "innovators." They are followed by the next 13.5%, known as "early adopters." SDG&E's program size of 3% helps move the San Diego region market out of the innovators group into the early adopters group.

b. 3% reflects the total number of vehicles targeted as part of the Program. It is not broken up by each class of vehicles.

c. SDG&E does not have this information.

Question 12: Chapter 1 Testimony, page LPB-16, lines 9-10 state, "Additionally, SDG&E has vast knowledge and experience in administering programs and providing a positive customer experience." Please explain and provide examples of the SDG&E programs referenced in this statement and provide any evidence demonstrating that they have resulted in a positive customer experience. Please share any other relevant documentation to support this response.

SDG&E Response:

One of the main areas where SDG&E provides a positive customer experience is through its Energy Efficiency programs. SDG&E is committed to energy efficiency and helping our customers manage their energy costs as their trusted energy advisor. Using the guiding principles of innovation, integration and comprehensiveness that SDG&E used in designing its program portfolio, SDG&E's energy efficiency program portfolio achieved substantial annual energy savings. As stated in SDG&E's Energy Efficiency Programs Annual Report 2016 Results, in 2016, SDG&E's efforts resulted in savings of over 346 million kilowatt-hours (kWh) and reduced energy demand by approximately 93 MW. In addition to helping customers save money and save energy, the energy efficiency programs helped reduce CO_2 in support of the State's goal of reducing greenhouse gas emissions.

SDG&E also continues to provide innovative and user-friendly solutions to enable customers to take control of their energy use and reduce their bills. By signing up for My Account through SDG&E's website, customers can access the Energy Management Tool, which helps them manage their energy use by providing updates on how and where they use energy the most. Customers can conveniently access their consumption history via the Green Button process, and have the option to authorize a third party to review and analyze their energy use data through Green Button Connect My Data. In addition, SDG&E customers can borrow an in-home display device from SDG&E at no cost to understand their home's energy use and identify high energy use appliances with near-real time information and estimated energy costs. SDG&E's Marketplace offers customers an easy way to review and purchase energy efficiency products. In 2016, SDG&E launched a new Marketplace feature that provides efficiency ratings to help customers make informed decisions.

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Question 13: Chapter 1 Testimony, page LPB-18, lines 6-8 state, "SDG&E has seen evidence in its Power Your Drive ("PYD") Program that the RFP process has driven competition and innovation in the market as vendors develop new products and capabilities in order to serve PYD customers." Please explain and provide the "evidence" referenced in this statement.

SDG&E Response:
In the Power Your Drive Request for Proposal (RFP) process, SDG&E solicited input from nearly 90 vendors and providers that had shown interest and responded to SDG&E's earlier Request for Information solicitation. From the RFP solicitation, SDG&E received 34 responses from interested vendors and providers that wanted to participate. The RFP process drove innovation because no responding vendor had off-the-shelf products and software ready to deliver that could fulfill all of SDG&E's PYD requirements for the hourly VGI rate to drivers and the billing data specifications (some vendors were closer than others). All vendors needed some time to modify their software and processes in order to give a demonstration of their capabilities and move forward. SDG&E allowed any vendor or partnering vendors to show interest, but they needed PYD compliant products and services to move forward with the qualification process.

SDG&E believes that the idea of participating in one of the first historic utility pilot EV charging projects with managed charging features is what drove many of the RFP bidders to take the necessary steps to add and refine the required PYD features to their products and software. After doing that work, these features and products will be available to all customers in the future who want to implement a managed charging solution. SDG&E believes without the PYD program driving innovation and, it is doubtful that this managed charging innovation would have occurred in the industry as early as it has.